

UN-Energy

**Activities of Member Organizations and Partners of UN-Energy in support of
“2014-2024 United Nations Decade of Sustainable Energy for All”**

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TABLE OF CONTENTS

I.	Introduction	4
II.	United Nations Development Programme (UNDP)	5
III.	World Bank Group	8
IV.	United Nations Environment Programme (UNEP).....	9
V.	World Health Organization (WHO).....	11
VI.	World Meteorological Organization (WMO)	13
VII.	Food and Agriculture Organization (FAO)	14
VIII.	United Nations Industrial Development Organization (UNIDO).....	15
IX.	United Nations Conference on Trade and Development (UNCTAD).....	18
X.	United Nations Educational, Scientific and Cultural Organization (UNESCO)	20
XI.	United Nations Department of Economic and Social Affairs (UNDESA).....	21
XII.	United Nations Human Settlements Programme (UN-Habitat)	22
XIII.	United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).....	27
XIV.	United Nations Economic Commission for Europe (UNECE)	29
XV.	Economic and Social Commission for Western Asia (ESCWA).....	30
XVI.	International Fund for Agricultural Development (IFAD)	32
XVII.	United Nations Capital Development Fund (UNCDF) CleanStart	32
XVIII.	United Nations Foundation (UN Foundation).....	33
XIX.	Renewable Policy Network for the 21 st Century (REN21)	35
XX.	International Renewable Energy Agency (IRENA)	36
XXI.	United Nations Children’s Fund (UNICEF)	37

ABBREVIATIONS

APEF	Asian and Pacific Energy Forum
CEB	UN Chief Executives Board
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
GTF	Global Tracking Framework
GW	Gigawatt
HIO	High Impact Opportunity
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
kWh	Kilowatt-hour
LDC	Least Developed Countries
MDG	Millennium Development Goals
PM	Particulate Matter
REN21	Renewable Policy Network for the 21 st Century
SE4ALL	Sustainable Energy for All
UNCDF	United Nations Capital Development Fund
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme

UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development

I. Introduction

Building upon the accomplishments of the Sustainable Energy for All (SE4ALL) initiative, and stressing the need for a coherent and integrated approach to energy issues and sustainable development, the 2012 General Assembly approved a resolution declaring 2014-2024 as the “United Nations Decade of Sustainable Energy for All” (The Decade)¹. This declaration sets the stage for a greater emphasis on long-term energy sustainability in the post-2015 development agenda and demonstrates the rising and resounding interest of the Member States in energy issues.

The Decade provides an opportunity to create an enabling environment for ensuring universal access to modern energy services, doubling the global rate of improvement in energy efficiency and doubling the share of renewable energy in the global energy mix, and to promote synergies across the global energy agenda for sustainable development, with a focus on eradicating poverty and contributing to the post-2015 development agenda. It creates a platform for increasing engagement with governments, the private sector, and civil society in activities necessary to reduce poverty, achieve sustainable development, address the challenges of climate change, and achieve national sustainable energy for all by 2030. The Decade will create a more coordinated global plan of action and emphasize the clear nexus that exists between energy and other development factors, including water, food security, health, education, gender equity and poverty.

The foundations laid by the SE4ALL initiative will help achieve the Decade objectives with such tools as growing global awareness, institutional capacity, and the Global Tracking Framework which establishes baseline energy data and a methodology to monitor progress to improve accountability and transparency. Further, these efforts will contribute to advancing the global conversation about the connection between energy and sustainable development. SE4ALL and the Decade heighten the call for action on energy worldwide.

The SE4ALL Global Action Agenda² identifies 11 ‘Action Areas’ to achieve the three objectives. These thematic focal areas provide a framework for identifying High Impact Opportunities (HIOs), a way to organize multi-stakeholder actions across all relevant sectors of the economy, and serve as tangible entry points for stakeholders interested in taking action in specific areas of interest. The Action Areas include seven ‘sectoral’ areas: (1) modern cooking appliances and fuels; (2) distributed electricity solutions; (3) grid infrastructure and supply efficiency; (4) large-scale renewable power; (5) industrial and agricultural processes; (6) transportation; and (7) buildings and appliances. There are also four ‘enabling’ Action Areas: (1) energy planning and policies; (2) business model and technology innovation; (3) finance and risk management; and (4) capacity building and knowledge sharing.

¹ A/RES/67/215

² The Secretary-General’s High-Level Group on Sustainable Energy for All. *A Global Action Agenda, Sustainable Energy for All*. 2012.

Many countries and regions have endorsed Sustainable Energy for All as a priority through explicit declarations and commitments to action. Hundreds of leaders from countries, businesses, civil society organizations, and international organizations have also come forward with concrete commitments.

Record investments are needed to propel innovation, development, and commercialization of environmentally sound technologies. Ample cooperation between a diverse array of stakeholders, concrete project actions, improved supportive institutional frameworks, and substantially increased flow in finance towards clean energy investments are needed to substantially increase the contribution of these technologies to the world's energy systems and to guarantee modern energy services to everyone. Also of primary attention when considering the transformation of energy systems is the disproportionate effect on women and girls in the developing world of lack of universal access to sustainable energy. Women and girls typically bear the responsibility for domestic tasks, such as collecting wood and animal waste as energy sources.

In light of the opportunities and clear linkages between energy, poverty reduction, and sustainable development, UN organizations have a number of activities underway and forthcoming designed to scale up the efforts to eradicate energy poverty. Several UN organizations that work in the field of energy are members of UN-Energy, which was formed under the auspices of the UN Chief Executives Board (CEB) in direct response to the request by the 2002 World Summit on Sustainable Development (WSSD), to support system-wide interagency coordination on sustainable development. UN-Energy is the principal collaborative mechanism to ensure that UN work on energy is undertaken in a coherent, coordinated and mutually supportive manner.

The following section of this report summarizes the major ongoing and future activities by UN-Energy member organizations in support of the Decade.

II. United Nations Development Programme (UNDP)

The 2014 to 2024 Decade provides the UN system in general and **UNDP** in particular with a platform for increased engagement with governments, the private sector, and civil society in activities that are critical to reducing poverty, achieving sustainable development, and addressing the challenges of climate change to achieve national SE4ALL goals for 2030. UNDP will work across sectors to identify 'triple-win' solutions to simultaneously grow economies, reduce inequalities and poverty, and protect the environment while working with diverse partners in inclusive ways to attain transformational change. UNDP will ensure the Decade's activities are linked to national development priorities of developing countries in the context of the post-2015 sustainable development agenda, future sustainable development goals, follow-up actions of the Rio+20 Conference on Sustainable Development, and the on-going climate change discussions under United Nations Framework Convention on Climate Change (UNFCCC).

UNDP has identified sustainable energy and addressing the challenges of climate changes as priorities in its 2014-2017 Strategic Plan. Its role in the SE4ALL initiative and the Decade is clearly shaped by its mandate within the UN System and its work in sustainable development, poverty reduction, human development, and its universal presence in developing countries. Both the Decade and SE4ALL recognize that universal access to energy services in developing countries would reduce poverty, improve living conditions and standard of living for the majority of the world's population, and it is essential for sustainable development and to achieve the MDGs.

UNDP will continue to assist countries to integrate energy goals into national development strategies. UNDP will, in collaboration with key partners, provide technical advice to develop specific sustainable energy solutions especially related to 'bottom up' decentralized energy options. As an example, UNDP is collaborating with the African Union / New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency in partnership with the African Development Bank and others to assist countries achieve sustainable energy goals. Through this collaboration, UNDP provides technical assistance targeted to scaling up feasible decentralized energy solutions to expand bottom-up approaches to specific demand sectors such as education, health, agriculture, youth employment, small enterprises, and rural and urban housing. The scale-up of energy solutions will be implemented through UNDP's various energy and climate change programmes, notably GEF-supported climate change projects, UNDP global, regional, and country office sustainable energy programmes, low carbon emission programmes, and the UNDP-implemented GEF Small Grants Programme.

As an implementing agency of the GEF, UNDP has two decades of experience in designing and implementing market transformation initiatives for sustainable energy and climate change mitigation activities. This experience will provide a robust basis to support achieving SE4ALL targets. Under the work of the UNDP-GEF, UNDP will support the Decade by implementing three signature programmes:

- *Clean Energy: Promoting Access to Clean and Affordable Energy Systems and Services.* The urgent need to achieve greater access to clean energy for the poor is addressed while enhancing the quality, security, and affordability of energy services. In this programme, UNDP promotes distributed clean energy systems, focusing mainly on sustainable use of biomass and other renewable energies, delivering on-grid and off-grid electricity solutions, providing clean fuel for heating and cooking, promoting greater efficiency, and the productive use of energy.
- *Urban Infrastructure: Promoting low emission and climate resilient urban and transport infrastructure.* UNDP promotes low emission urban and transport infrastructure and systems by integrating energy efficiency in buildings, clean energy production, waste management, synergies in select industries, in particular those using ozone depleting substances, and promoting sustainable, climate resilient urban and transport system planning and design.
- *Access to New Finance Mechanisms:* UNDP-GEF is managing the MDG Carbon Programme to develop Clean Development Mechanism (CDM) projects with high

development benefits in under-represented countries. The focus is shifting towards economy of scale approaches, such as Nationally Appropriate Mitigation Actions with a focus on rural electrification to increase the access to energy for rural communities.

Projects and programmes supported by UNDP going forward will assist governments and their development partners to: scale up off-grid, mini-grid, and decentralized grid-connected energy solutions; establish optimal policy, regulatory, and financial frameworks for energy service provision; strengthen energy supply chains via capacity development, standardization, and training for users and technical providers; create income generation and entrepreneur opportunities in the energy sector; apply innovative financial approaches such as microfinance to energy services; and develop national and local capacities to implement and monitor results of energy access policies and programmes.

Support for the Decade will broadly include the establishment of national targets and policy frameworks for renewable energy and energy efficiency, and developing regulatory frameworks that provide technical regulations and conditions for the installation of renewable energy generation plants and their connection to the grid. Other areas of support include generating methodologies for calculating costs for renewables-based electricity, standardised contract modalities (e.g., power purchase agreements) for buying back electricity from renewable energy generation, and establishing energy efficiency standards and labels for buildings and appliances. UNDP will design and implement financial mechanisms and incentive schemes to lower risks of clean energy investment, especially at the community level, which may include setting up enabling mechanisms such as feed-in tariffs, supporting local microfinance organizations, or establishing dedicated national clean energy climate funds. UNDP seeks to develop local manufacturing, engineering, operation, and maintenance capabilities along the energy supply chain, and strengthen capacity of national and local governments to implement, coordinate, and monitor the results of clean energy policies.

Through its UN Resident Coordinators (RC) system, UNDP will play a key role in mobilizing key constituencies at the country level through the UN RC system in support of the Decade. This is critical for success to create enthusiasm and support at the country level. UNDP will ensure that UN Country Teams have a clear and thorough understanding of SE4ALL and Decade objectives, e.g., while in dialogue with national authorities. UNDP will leverage its capacities at the global level as chair of the UN Development Group and at the country level as host of the UN RC system to ensure: coordinated engagement from the UN System and close collaboration with other development partners under the leadership of the government; the range of stakeholders needed to build momentum for scaled-up action goes well beyond the energy sector; and that the Decade activities promote initiatives that remain inclusive in supporting poor and disadvantaged groups.

III. World Bank Group

The **World Bank Group** strategic priority in the energy sector is to improve electricity access, which is essential for sustainable growth in an environmentally and socially sustainable manner. The Bank Group pursues a portfolio approach, which includes support for investments in power generation that are least-cost and sustainable, strengthen and expand transmission and distribution power networks, and that improve efficiency through technical assistance and advisory services that can help countries improve the performance of electricity utilities, bring greater rigor to governance, and offer guidance on policy and regulatory frameworks to attract and increase the impact of public and private sector investments. Some developing countries, especially those emerging from conflict, have weaknesses in capacity to implement projects. The Bank provides support to strengthen their capacity.

The World Bank Group has committed to doubling the leverage of its energy financing and to providing technical assistance to several SE4ALL opt-in countries. The Bank Group is also supporting initiatives in partnership with the Energy Sector Management Assistance Program (ESMAP), e.g., the Bank Group has launched a global SE4ALL Technical Assistance Program, with USD 15 million of funding from ESMAP. It will provide support to five countries in Sub-Saharan Africa to expand energy access and build a prospectus of investment-ready projects to facilitate that expansion. Together, these are expected to catalyze donor funding and private investment enabling countries to achieve universal access to electricity and safe household energy solutions by 2030.

Other new initiatives include: the ESMAP-managed Renewable Energy Mapping Program, which will produce the maps needed by governments, project developers, and investors to identify renewable resource 'hot spots' for solar, wind, biomass, and small hydropower potential at a national scale; the Global Geothermal Development Plan (GGDP), also managed by ESMAP, that better manages and reduces risks of exploratory drilling and power delivery to millions with an initial target of mobilizing USD 500 million; and the World Bank-led Global Gas Flaring Reduction (GGFR) initiative that is now in its fourth phase in flaring reduction and has already helped reduce gas flaring by 20% worldwide since 2005.

On the analytical side, the World Bank Group led a team of experts from 15 agencies to produce the 2013 *Sustainable Energy for All Global Tracking Framework Report*, which provides baseline information on where we are in the journey towards meeting the global energy goals. This Report will be generated every two years until 2030 and enable tracking SE4ALL progress towards 2030 targets. The Report also provides data-driven guidance on where to focus efforts to achieve the SE4ALL objectives by identifying high-impact countries that offer the most potential to make rapid progress. In the Report, 20 countries in Asia and Africa were identified that account for about two-thirds of all people without electricity access and three-quarters of those using solid household fuels.

In addition to these initiatives that support the SE4ALL agenda, the World Bank Group is sustaining its support for a wide range of energy projects with 44% of Bank Group energy

financing in 2012 totaling USD 8.2 billion designated for renewable energy projects. These projects include those financed by the International Finance Corporation (IFC) whose energy activities include the innovative 'Lighting Africa' program which, after successful pilots in Kenya and Ghana, aims to expand across the continent with the goal of reaching 250 million people by 2030. The model is being replicated with a new program, 'Lighting Asia', launched in India in 2012. The World Bank and IFC are also among 10 partners in the 'Global Lighting and Energy Access Partnership' (Global LEAP). This collaboration aims to increase modern energy access worldwide by supporting sustainable commercial markets for affordable quality-assured off-grid energy and lighting products and services.

Other World Bank-supported programs include:

- Delivering electricity by solar photovoltaic panels to 1.4 million low income rural households in Bangladesh with financing from the International Development Association (IDA);
- Expanding electricity services to 4,300 towns and villages in Ethiopia via three IDA credits over five years;
- An electricity rollout program in partnership with the government of Rwanda that tripled electricity connections from 2009 to 2012;
- Three programs in India – expanding transmission by 52 billion kWh, supporting the India Power Grid Corporation's increase in grid size by 40,000 km, raising inter-regional electric power transfer capacity by 16 GW, and supporting the expansion of five regional transmission systems to enable transfer of power from energy-surplus regions to towns and villages in under-served regions, reduce transmission losses, and improve reliability; and
- Supporting the distribution in Mexico of almost 23 million energy-saving light bulbs that consume only 20% of the energy and last 10 times longer than traditional bulbs for over 5.5 million families in a project financed in part by the GEF and World Bank.

IV. United Nations Environment Programme (UNEP)

Energy is at the heart of sustainable development. UNEP's work on energy aims at transforming the way we produce and use energy, mainly by bringing a 'sustainability' dimension into energy sector decision-making and investment. Policy and investment decisions on energy production and use over the coming decade will determine whether the future that we will have will live up to our hopes for the future we want.

The UNEP Medium Term Strategy 2014-2017, through dedicated programmes and projects on renewable energy, energy efficiency, decentralized energy solutions, transport, buildings, cities Short-Lived Climate Pollutants, sustainability criteria, networks and partnerships, and energy and climate finance, directly responds to the call of the Secretary-General for UNEP to remain committed and engaged in the Initiative throughout its lifespan. UNEP will support the Decade by continuing to raise political will and leadership. At UNEP's highest level, the Executive

Director of UNEP is a member of the SE4ALL Advisory Board and co-chairs the SE4ALL Energy Efficiency Committee.

The UNEP energy programme and projects support countries' low emission and resource efficient development pathways and provide tools that comprise and combine the areas of policy, technology, and finance to improve energy efficiency in key sectors and increase renewable energy in the energy mix. Through its efforts, UNEP privileges an integrated approach rather than solely focusing on one objective, to harness multiple benefits and synergistic opportunities, thereby actively contributing to the attainment of sustainable development objectives through a transition to an inclusive Green Economy.

Sustainable energy production and use that aim at minimizing environmental impacts on water, land, air, people, and ecosystems, can become the norm through systematic use of science by decision-makers, whereby trade-offs between policy objectives and business models internalize external costs. Sustainability criteria will be critical to allow informed and insightful decision-making on the energy mix in a given country context, and possible safeguards that need to be put into place, whilst addressing fossil fuel subsidies, latter as recommended in the Rio+20 outcome document. UNEP, as the mandated UN environmental entity and as UN-Energy member, will continue to contribute to multilateral processes on energy in the context of the Sustainable Development Goals and the post-2015 development agenda.

The various activities planned by UNEP include:

- (i) Outreach - Targeted outreach activities and multi-media campaigns (such as the 'We have the power' which was launched last November in New York) building on the photo essays and photo exhibitions of UNEP sustainable energy projects in several countries, a new energy website, the biannual International Renewable Energy Conference facilitated by REN21 and enhanced coordination with the SE4ALL Global Facilitation Team on communication and events.
- (ii) HIOs and Partnerships - UNEP is engaged in multistakeholder partnerships, acting as co-lead on HIOs on lighting and appliance efficiency, on vehicle fuel economy under the framework of the Global Fuel Economy Initiative and on Sustainable Energy Investment (through the Renewable Energy Performance Platform), as well as a partner on Energy Efficiency in Buildings (in association with the UNEP Sustainable Buildings and Climate Initiative and the UNEP Finance Initiative), and the Water – Energy – Food Nexus.
- (iii) Energy Efficiency Hub - SE4All's thematic Hub for Energy Efficiency, initiated and supported by the Government of Denmark, is being operationalized as a satellite to the UNEP Risø Centre. It will be the Champion of EE objective, and will focus on tracking of progress and identifying gaps, knowledge management, particularly analysis of policies and practices and sharing of good practices.

(iv) Knowledge sharing - UNEP was actively involved in the development of the SE4ALL Global Tracking Framework (GTF) Report (2013) and will remain engaged in future editions, planned to be published on a biannual basis. UNEP contributes through publications (Global Environment Outlook, Global Environment Alert Service bulletins, Global Trends in Sustainable Energy Investment with Bloomberg New Energy Finance and Frankfurt School Collaborating Centre, REN21 Renewables Global Status Report, the Clean Energy Voyage report (2013), the clean energy postcard series initiated in 2012 and planned to be an annual feature); and through Networks (regional networks of climate change officers, the Climate Technology Centers and Network).

(v) Science for Policy – The International Resource Panel, whose secretariat is hosted and staffed by UNEP, is publishing an upcoming series on greenhouse gas mitigation technologies to inform decision makers about the impacts of key energy supply and demand technologies. UNEP will also pilot the GBEP voluntary science-based sustainability indicators for bioenergy in two countries.

(vi) Collaborative Action - UNEP will collaborate with other institutions on cross-cutting issues such the Climate and Clean Air Coalition on short-lived climate pollutants; the UNFCCC Climate Technology Centers and Network on pollution reduction, climate mitigation, and clean technology transfer; or the clearinghouse of the 10-Year Framework Programme of Action (10YFP) on Sustainable Consumption and Production that can contribute to networking and information exchange through its online energy efficiency community.

V. World Health Organization (WHO)

WHO is the directing and coordinating authority for health within the UN system, and is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, providing technical support, and monitoring and assessing health trends. WHO considers the SE4All initiative a landmark opportunity to reduce the enormous disease and death burden associated with the lack of access to clean, modern energy solutions, and inefficient energy use as health is inextricably linked to every aspect of energy use.

The lack of access to modern energy sources in homes and health care facilities impacts the health of billions around the world. Nearly 3 billion people rely upon rudimentary and inefficient coal and biomass stoves for cooking and heating, causing about 4.3 million premature deaths a year from indoor smoke³, including over half of all deaths to childhood pneumonia, around 1/3 of all chronic obstructive lung disease deaths, over 1/5 of all deaths to stroke and close to 1/5 of all deaths to ischemic heart disease and lung cancer. In countries of Sub-Saharan Africa, a recent WHO analysis of nationally representative surveys revealed that

³ <http://apps.who.int/gho/data/node.main.122?lang=en>

26% of health care facilities lack access to electricity, and fewer than 1/3 of facilities have reliable access, which impedes the use of even the most basic diagnostic and treatment equipment required for obstetric care, preservation of vaccine cold chain, sterilization, and water pumping.⁴ Ambient (outdoor) air pollution from energy inefficiencies in building design, transport systems, and power generation, also have considerable health impacts in developed and developing countries. WHO estimates that in 2012, 3.7 million deaths were attributed to such air pollution.

Products of incomplete combustion from biomass or fossil fuels are emitted by inefficient vehicles, cooking and building heating, and electricity production, as well as from waste incineration and industry. These include very small (<PM₁₀) and fine particles (<PM_{2.5}) that can penetrate deep into the lungs and enter the blood stream. Significant health co-benefits can be derived from transitions to clean and efficient energy sources in the workplace, the community, and the home, making health an indicator of progress towards all SE4All goals. Renewable energy sources also generate health co-benefits in cities, homes, work places, and health facilities. For example, small PV solar systems can provide better illumination in small workplaces of the informal sector, reducing indoor exposures to kerosene fumes, injury risks and improving productivity.

In particular, WHO has contributed the following in support of the SE4All initiative main goals via: producing documented evidence about health benefits of clean household fuels and technologies; completion of 'WHO Indoor Air Quality Guidelines: Household Fuel Combustion' which provide health based guidance for policy-makers and implementers on fuels and technologies used in the home; monitoring energy access in to the development of the new SE4All Global Tracking Framework for universal energy access; conducted a multi-country analysis in Sub-Saharan Africa of access to reliable electricity and energy in health care facilities; and the WHO 'Global Ambient Air Pollution in Cities Database' collates ambient air pollutant concentration measurements from 1,600 cities. WHO's 'Global Platform on Air Quality and Health' will use ground-level monitoring, advanced satellite imagery and chemical transport models to monitor air pollution exposure globally. This platform can be used to identify reductions in exposure to health damaging pollutants associated with energy efficiency improvements. Similar to the effort in Sub-Saharan Africa, WHO is collaborating with the World Bank in a global framework for monitoring access to energy for health services.

In addition, the WHO 'Global Household Energy Database' serves as the baseline for SE4All tracking of home energy transitions and health impacts, and the 'Health in Green Economy' series on health co-benefits of energy efficient buildings and transport. WHO is currently collaborating with the World Bank in a global framework for monitoring 'Access to Energy for Health Services in resource-constrained settings', and has been a key collaborator with UN-

⁴ Heather Adair-Rohani, Karen Zukor, Sophie Bonjour, Susan Wilburn, Annette C Kuesel, Ryan Hebert, Elaine R Fletcher. *Glob Health Sci Pract* 2013;1(2):249-261. <http://dx.doi.org/10.9745/GHSP-D-13-00037>

Women and the UN Foundation in creating a high impact opportunity on Energy and Women's Health under SE4All in support of universal health coverage and improving maternal health.

VI. **World Meteorological Organization (WMO)**

The **WMO**, in its support of developing science-based climate and environmental information, provides the authoritative voice on the Earth's atmosphere for the UN, including its interaction with the oceans, the climate it produces, and the resultant distribution of water resources. Weather, climate, and water affect all areas of human activity, and this information is critical for major decisions concerning, for example, new water supply reservoirs, plans and infrastructure for expanding settlements, and economic policy targeting climate-sensitive industries such as tourism, renewable energy, and aquaculture. Although the concept of climate as a resource seems straightforward enough, its optimal management may demand intensive scientific and multidisciplinary approaches, which can be an additional challenge to the scientific community, development practitioners and stakeholders. Furthermore, climate information is critical for the safety and basic operations of hydropower and other energy sources such as fossil fuels, wind, solar, and fuel wood.

WMO's programmes such as the World Climate Programme (WCP), including the World Climate Research Programme (WCRP) and co-sponsored bodies like Intergovernmental Panel on Climate Change (IPCC), mobilize the scientific community to contribute to climate change studies and assessments and improves the understanding of policy makers (e.g., on long term trends of climate-dependent energy demands). Furthermore, WMO's Commission for Climatology (CCI) provides leadership in promoting expertise and international cooperation in climatology. WMO significantly improved the global networks of solar radiation stations, hosted by National Meteorological and Hydrological Services (NMHS).

The Global Framework for Climate Services (GFCS) will provide an opportunity for WMO and partner UN agencies to address issues related to user requirements for climate information and energy, and identify and address observational, research, and forecast production needs to improve climate services to the energy sector. The first priorities for GFCS implementation will be for agriculture and food security, health, water, and disaster risk reduction, and energy is inherent in many of these priority areas. The GFCS will promote the use of climate information for sustainable development and environmental stewardship. WMO is partnering with the International Renewable Energy Agency (IRENA) to develop the Global Solar and Wind Atlas. This work is intended to create a high-quality internet-based platform that will raise awareness of technology opportunities to limit the financial risk of countries and of investors. It will also provide essential information resources to support planning, policy development, and investment.

Renewable energy sources have a large potential to displace emissions of greenhouse gases from the combustion of fossil fuels and thereby to mitigate climate change. If implemented properly, renewable energy sources can contribute to social and economic development, an

increase in energy access, a secure and sustainable energy supply, and a reduction of negative impacts of energy provision on the environment and human health. Intensive applied research in this sector is underway and it is highly dependent on contribution of the climate science. In terms of energy efficiency, climate has a direct effect on energy issues. Buildings with inappropriate materials and designs require a large amount of energy for cooling or heating depending on the climate and may cause severe power cuts or shortages. Energy-inefficient buildings and cities may impact negatively on the health of the dwellers. With proper climate information and services, the designs, safety and comfort of buildings and cities can be greatly improved. Oil price on the world market is dependent on demand which itself is a function of the expected climate.

One potential area for future WMO contribution to the Decade scope of work is to implement and sustain the land-based, marine-based, and space-based observing programmes that will inform decision-makers on energy potential at various sites, and therefore on appropriate sites for installation of the expensive renewable energy technologies. Facilitating consistent and reliable access to analyzed or modeled data, and climate information based on observed data is also an area for potential collaboration. Further, multidisciplinary international collaboration is required to ensure the appropriate access to and use of reliable climate information in energy planning and decision-making to support sound climate risk management and sustainable development in the energy sector.

VII. **Food and Agriculture Organization (FAO)**

Energy, food, and water are inextricably linked with the food production and supply chain responsible for around 30% of total global energy demand and water for energy currently about 8% of global water withdrawals. Food production is the largest user of water at the global level, responsible for 80-90% of blue water use, and by 2050, it is expected that there will be a 60% increase in agricultural demand for food and a 50% increase in energy demand unless waste, losses, and consumption patterns are addressed. **FAO** has shown that around one third of the food we produce is lost or wasted, and with it about 38% of the energy consumed in the agrifood chain. In developing countries, food losses are often due to lack of access to energy for adequate storage, processing, transportation and distribution.

With regard to food security and nutrition, energy is critical in four ways: (i) energy is needed for production, storage, distribution, preparation, and cooking (so, at every stage of the agrifood chain)⁵; (ii) energy prices influence the price of agricultural inputs and therefore food prices and farmers' income; (iii) biofuel development can influence food prices, food security, and nutrition in a positive or negative way depending on local circumstances; and (iv) reducing time spent by women in particular on household tasks, which frees up alternative uses of their time. When considering the link between water, energy, and food, a nexus approach is

⁵ Recent information on this topic is available here: <http://www.fao.org/docrep/014/i2454e/i2454e00.pdf>

therefore needed to address the current and future interconnected water-energy-food security needs in an integrated way.

In addition to the agrifood sector producing over 20% of global greenhouse gas emissions, another concern is that the 60% projected increase in food demand by 2050 will primarily result from yield increase, hence more fossil fuel dependence if the modernization of agrifood systems follows the conventional pathway; which have grown reliant on fossil fuel. Future increases in productivity may be constrained by the limited future availability of cheap fossil fuel supplies, and the need to limit their use for climate change management purposes. With higher and increasingly volatile fossil fuel prices foreseen in the future, these consequences are likely to become even worse, given the close links between fossil fuel and food prices. In green economies, new development paths are sought that put agriculture and economic equity at the centre. The agrifood chain, the supply chain from field to the plate, can be part of the solution. Agrifood systems have a unique link with energy in that they can both consume and produce energy. This allows for the challenges of the 'food-energy-water-climate change nexus' to be addressed from both energy used in and energy produced by agrifood systems. FAO's multi-partner programme, 'Energy Smart Food for People and Climate' (ESF), represents its commitment to the implementation of the SE4ALL initiative. The food-energy-water or climate-land-energy-water-development nexus is an important element to consider in achieving food security and sustainable development. ESF seeks to address these challenges by working towards the SE4ALL goals at all stages of the agrifood chain.

Energy Smart Food Systems promote improved energy efficiency, diverse energy sources with gradual increase in the use of renewable energy, and improve modern energy access in agrifood chains. Examples of ESF activities that will continue into the Decade include: developing a robust and cost effective water-energy-food nexus assessment package in the context of climate change; improving energy efficiency and increasing the use of renewable energy; an improving access to affordable modern energy services at different stages of the agrifood chain in particular to reduce food losses with an emphasis on post-harvest stages; improving the sustainability of production and use of energy in emergency / rehabilitation situations ; and supporting the promotion of sustainable bioenergy through the availability of FAO's Sustainable Bioenergy Support Package, and its significant role as Secretariat and active Partner of the Global Bioenergy Partnership (GBEP). Further, FAO has prominent roles in two HIOs of the SE4ALL Global Action Agenda: co-chairing (with IUCN) of the HIO on Sustainable Bioenergy; co-chairing (with Germany) the HIO on "Water-Energy-Food Nexus", and leading role in the development of post-2015 targets and indicators related to the linkages between SE4ALL objectives and food security.

VIII. United Nations Industrial Development Organization (UNIDO)

UNIDO believes that implementation of the Decade offers a unique opportunity for the launch of new partnerships, programs, and initiatives to implement the SE4ALL objectives, which will be a crucial window of opportunity to drive transformational change. UNIDO is actively

involved in the delivery of technical assistance, capacity building, and policy advice in support of access by developing countries to clean and efficient energy for productive use. UNIDO has been championing the cause of SE4ALL and has led and chaired UN-Energy for the past five years.

UNIDO stands ready to support the implementation of the Decade by focusing on tangible actions and concrete initiatives enabling the global transition to a 'greener' model of industrialization and economic growth and transformation to a path for sustainable industrial development. This is particularly imperative in light of world industrial energy demand projections that indicate growth of 1.5% per year through 2035⁶. Furthermore, industry accounts for approximately one-third of final energy consumption globally⁷ and industrial production is expected to expand by a factor of 4 between now and 2050. To reach a fundamental transformation of global energy and industrial systems by 2030 to meet the SE4All objectives, enabling policy frameworks for capturing green growth opportunities must emerge as a path to sustainable industrial development. UNIDO sees its role in aligning the transformational agenda of the energy sector with the opportunities for realizing higher-value low carbon growth and business opportunities in the industrial manufacturing sectors, driven by clean, efficient and sustainable energy technologies and systems.

The Decade provides the industrial manufacturing industry with opportunities to both contribute to the implementation of the Decade and its related initiatives and to benefit from considerable business opportunities in the area of green growth, cost reduction, and competitiveness. Energy efficiency improvements, renewable energy, and low-carbon technology development and deployment will need to make a significant impact if industry is to substantially reduce its energy intensity and increase energy productivity. UNIDO is the SE4All lead organization in energy efficiency and renewable energy standards, and works with GEF and ISO on these topics as a HIO. UNIDO will support Member States through initiatives that lead to the development of national Industrial Energy Efficiency Action Plans, and promote and support dissemination of energy management systems, standards, and best policies and practices in energy audit and management. UNIDO will scale up its activities to support global dissemination of energy management systems and standards (EnMS) and that of cross-cutting best policies and practices in energy audit and management. Furthermore, the UNIDO Global Initiative on Industrial Energy Efficiency (IEE) Benchmarking and Professionals Certification will serve to offer key guidance for decision-makers at the enterprise level with respect to allocation of resources and investments in energy efficiency and energy management.

The industrial sector offers interesting opportunities for deploying renewable energy technologies that have so far not received a lot of attention. UNIDO analyzed the long-term potential for renewable energy in industrial applications⁸. This study suggests that up to 21% of all final energy use and feedstock in manufacturing industry in 2050 can be of renewable origin

⁶ US Energy Information Administration, 2011. International Energy Outlook, 2011.

⁷ IEA, 2011, World Energy Outlook, Paris: OECD/IEA

⁸ UNIDO 2010: Renewable Energy in Industrial Applications: An assessment of 2050 potential.

so numerous business opportunities exist for a greater share of renewable energy in the energy mix. In addition, an increase in renewable energy in industry has the potential to contribute about 10% of all expected greenhouse gas emissions reductions in 2050, or 25% of the total expected emission reductions of the industry sector, which is equivalent to the total current CO₂ emissions of France, Germany, Italy, and Spain.

Overall, UNIDO targets supporting enterprise growth via creating employment and sustainable industrial development. UNIDO currently has 50 renewable energy projects in operation in 35 countries with 20 more in the pipeline. The organization's renewable energy programme promotes productive, or income and growth-generating activities through mainstreaming the use of renewable energy in industrial applications, in particular SMEs, the creation of business development opportunities through increasing access to energy through renewable energy mini-grids, and innovative business models, particularly in rural areas, by augmenting the use of locally available renewable energy services.

UNIDO has long recognized that environmental issues must be addressed and cleaner production methodologies must be promoted at a systemic level in industrial development. The promotion of resource efficiency, including energy, requires a perspective and a decision-making process that simultaneously considers both economic value and environmental sustainability. UNIDO's portfolio of initiatives includes promotion of the cleaner and more efficient use of energy by industry, facilitation of productive activities through improved access to modern energy services, and integration of industrial energy efficiency and renewable energy interventions for low carbon, low emissions growth. UNIDO works towards the objective of wider deployment of renewable energy by bringing established technologies to market by demonstration (technology-push) and deployment and diffusion (market pull) by encouraging their use by SMEs. This has proved successful for decentralized technologies where small-scale businesses can leverage local resources and financial institutions to foster effective energy service delivery and productive applications for electricity, heating, cooling, cooking, agro-processing, as well as delivering social services.

UNIDO has launched a number of global multi-stakeholder initiatives that are relevant in support of the Decade, notably: the Green Industry Initiative and Platform, which aims at building national capacities for accelerating growth of the industrial sector in developing countries while not harming the environment and the climate; the Clean Technology Program for SMEs; and the Motor-Systems Efficiency Partnership. UNIDO also runs a number of technology facilitation mechanisms and networks, including the global network of Resource Efficient and Cleaner Production Centres or RECP*net*, International Technology Centres (ITCs), Investment and Technology and Promotion Offices (ITPOs), and UNIDO Centres for South-South Industrial Cooperation, which are excellent examples of international networks that offer sector-specific technical support, investment scale-up support, and flows of technology and information on new processes, energy efficiency and renewable energies, materials, and resource use. UNIDO and UNEP also recently launched a new Climate Technology Center and Network (CTCN) with partners and stakeholder technical organizations that aims at responding,

through a network of selected specialized institutions, to the technical assistance need of developing countries in the area of sustainable energy and climate change.

IX. United Nations Conference on Trade and Development (UNCTAD)

The goal of the **UNCTAD** is to assist developing countries with raising living standards through trade, investment, finance, and technology, helping developing countries benefit from the globalized economy, and contributing to the international debate on emerging issues related to developing countries and the world economy. With 1.3 billion people lacking access to electricity as of 2013 and 2.6 billion relying on conventional biomass for basic cooking and heating needs (95% of whom reside in Sub-Saharan Africa and developing Asia), UNCTAD emphasizes the role of sustainable energy as a tool for economic growth in developing countries. In this context, UNCTAD implements a work programme on energy, trade, and development based on three pillars of work: (i) policy oriented research and analysis, (ii) consensus building, and (iii) technical cooperation. The scope of these programs will be expanded during the decade 2014-2024 so as to further contribute towards the SE4ALL initiative.

Primary goals for UNCTAD are to help developing countries increase information capacity, improve exploitation agreements, manage price volatility, move towards fuel efficiency and optimal freight logistic systems, promote international debate on harmonization of bioenergy sustainability standards, as well as increase the usage and trade of low-carbon energy sources, including renewables. Sustainable energy is largely dependent on conditions governing national and international energy markets, pricing, access to finance, and procurement practices. Recent changes in the energy markets include shifts in trade flows, the emergence of shale gas, growing liquid natural gas markets, biofuels growth, concerns over global warming and environmental degradation and emergence of non-traditional high energy consumers such as China and India.

UNCTAD programmes and activities pertinent to the Decade generally fall under the categories of energy commodity development and greening international trade. The energy commodity development programme focuses on reducing information asymmetry for increased energy access and efficiency, promoting natural gas in the global energy mix, increasing local participation for reducing energy poverty, contract negotiation for balanced accrual of returns and improved access to energy services, mitigating the impact of energy price volatility for universal access to energy, and trade, competition and investment policy for energy development.

One specific initiative is the current collaboration with the Economic Commission for Africa, which supports the region in realizing opportunities for creating economic linkages to increase outsourcing in the energy value chain to help countries pilot models for increasing energy supply and network creation. It also helps establish strategies for energy pricing and risk management such as stocks building, price predictability mechanisms, government guarantees,

and hedging, and mainstreams the nexus between energy development and regional integration, mobilizing private capital to deploy climate mitigation technologies. UNCTAD also launched the Natural Resources Information Exchange (NRIE), an initiative to assist natural resources-rich developing countries to capture untapped value from reliable data on the mineral value chain with a view to optimizing natural resource development and management. Eight African countries are engaged in NRIE pilot projects. Decade-related objectives for NRIE include helping governments attract investment, contributing to energy efficiency, and developing regionally integrated energy supply systems and increased affordable energy services.

A second UNCTAD focus area is Green International Trade, which refers to the decarbonization of clean energy commodity supply chains. It considers CO₂ in international trade and carbon footprint goods transportation and requires global standards that go beyond greenhouse gas emission accounting. For example, agrifood standards should integrate computation of the 'environmental footprint' from 'farm to fork'. Two activities in this focus area include fuel efficiency and sustainability principles of freight transport, which reduces emissions and optimizes supply chain networks, and the Biofuel Initiative. The Biofuel Initiative promotes the use of second generation biofuels produced from sustainable feedstock including agricultural residues, nonfood crops or inedible waste products that do not divert food away from animal or human food chains. The Biofuel Initiative supports countries by providing access to sound economic, legal and trade policy analysis, capacity building activities, and consensus-building tools.

UNCTAD work in trade and investment policy will continue towards mainstreaming the nexus between energy development and regional integration, as well as private capital mobilization to deploy climate mitigation technologies. Private capital is critical to fill funding gaps in energy development. For example, between 2001 and 2011, new investments in renewable energy averaged USD 135 billion. 85% of global investments that drove change in renewable energy came from private capital. Issues to be addressed to attract finance include: border energy tariffs, subsidies, the effect of government intervention on energy efficiency and prices; creating a level playing field between high-carbon and low-carbon investment alternatives; regional integration through grid interconnection for energy security; market-grid access for low-carbon technologies; regional cooperation in the area of infrastructure investment and operations and management (O&M); and transparent international rules governing energy trade and investment, including rules providing incentives for universal access to energy.

With regards to competition policy, UNCTAD advises developing countries to design and implement competition laws in public utilities. Implementation of competition laws aiming at lowering entry barriers and collusion in pricing contributes to preventing excessive prices and hence to universal access to energy. In addition, innovative financial mechanisms could also assist in reducing entry barriers to local companies and entrepreneurs in energy distribution services.

X. United Nations Educational, Scientific and Cultural Organization (UNESCO)

Responding to the challenges of achieving sustainable energy for all requires increased use of locally available renewable energy sources, building a knowledge base, disseminating relevant technical and scientific knowledge, and promoting appropriate energy policies and choices as a foundation for increased use and application of environmentally sound energy technologies. **UNESCO** plays a catalytic role in this process as it is essential to promote comprehensive, holistic approaches to energy, climate change, and sustainable development.

UNESCO promotes partnerships, scientific exchange, as well as information and networking to provide access to data, knowledge, and best practices in renewable energy and energy efficiency. Identifying and promoting innovations and breakthrough technologies in the rapidly evolving renewable energy sector will help to further refine related policies and strategies and the resulting contribution to sustainable development. For both renewable energy and energy efficiency, research and development needs to be strengthened as well as promoting the sharing of scientific knowledge. To facilitate a wider development of clean energy technologies, supportive policy and regulatory frameworks must be established. UNESCO's strategy includes support and assistance to member States to take concrete actions through effective policies and institutional frameworks toward enhancing the use of clean energy technologies. UNESCO emphasizes promoting energy initiatives as hands-on experiences and its contributions often serve as a catalyst to projects with a multiplier effect that can leverage additional funding.

In addressing the objectives of the Decade, UNESCO's strategy will build on its achievements related to renewable energy for: (i) education and capacity building; (ii) sharing best practices and scientific and technological knowledge; and (iii) promoting related energy policies and standard setting.

In recognition that doubling the share of renewable energy in the global energy mix will require enhanced national capacities to harness locally available renewable sources of energy and identify the best choices and technologies, UNESCO launched the Global Renewable Energy Education and Training (GREET) Programme. GREET provides awareness raising, capacity building, and serves as a framework for partnership and exchange of scientific and technological know-how and best practices. As an example, the African Chapter of GREET developed a training platform covering solar photovoltaic, mini-hydropower, and mini-grid systems, and its activities covered training tool design and implementation, training that targeted professional groups, and setting educational standards. Annual regional summer schools on renewable energy sources targeting Africa and South East Asia are organised as well.

UNESCO also launched e-learning energy courses, 'Energy for Sustainable Development in Asia' through the CONNECT-Asia network. This curriculum, which supports building local capacity in energy education, was subsequently adapted at the national level by several regional experts and local universities. UNESCO also partnered with Barefoot College to provide a solar energy

training initiative in solar energy that targets empowering women in rural communities. This programme has been implemented in some of UNESCO's biosphere reserves in Africa.

As a contribution to the SE4ALL Initiative and through support from OPEC Fund for International Development and Panasonic a project concerning the "Solar electrification of rural schools" was launched in five sub-Saharan African countries (Benin, Madagascar, Mauritania, Niger and Togo) to address the energy poverty in rural areas. The project concerns the solar electrification of seventy five rural schools (fifteen per country) with the aim to improve the quality teaching and learning by using solar energy powered systems. The project includes an ICT as well as a capacity building element to ensure the sustainability of the project. This initiative has the potential to serve as a model with multiplier effect that could be duplicated at country level as well as regional and international levels.

Concurrently and as part of the UNESCO Climate Change Initiative, a Renewable Energy Futures for UNESCO Sites Initiative (RENFORUS) was launched to promote the use of UNESCO biosphere reserves and World Heritage sites as field observatories on the sustainable use of renewable energy sources

UNESCO activities in renewable energy and energy efficiency also involve affiliated science institutes and centers such as the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy, (Category 1) as well as centers under UNESCO auspices (Category 2) such as the Regional Centre for Renewable Energy and Energy Efficiency (CDER) in Marrakech and the International Sustainable Energy Development Center (ISED) in Moscow. To promote N-S-S cooperation, ISED is providing annual fellowships to representative from developing countries and countries in transition for a one month training course on alternative and renewable energy. The Centre is furthering the publication of a quarterly "*Energy Bulletin*" as well.

XI. United Nations Department of Economic and Social Affairs (UNDESA)

UNDESA will continue playing a key role in the coordination of activities of UN-Energy and will support the coordination and implementation of planned activities for the Decade. As the UN-Energy Secretariat, UNDESA is coordinating the participation of member organizations in the post-2015 consultations on energy. In particular, UNDESA is providing key support during the inter-governmental negotiations on the definition of Sustainable Development Goals (SDGs), targets and indicators on energy for the post-2015 development agenda. UNDESA, through its Statistics Division and the Division for Sustainable Development, is also supporting the Sustainable Energy for All Global Tracking Framework effort.

DESA's technical support will continue to be directed towards the objective of securing universal access to modern energy services. In relation to this objective, UNDESA is leading a public-private partnership on "Minimum Electricity Access" that promotes electrification in rural isolated communities with stand-alone renewable energy systems. UNDESA conducted in 2013 an Expert Group Meeting on "Barriers and Challenges to Rural Energy Access" and a global conference on capacity development for "Rural Energy Access: A Nexus Approach to

Sustainable Development and Poverty Eradication.” More activities in this field are being planned for implementation during the Decade.

In addition, UNDESA will foment and promote cooperation among UN agencies for the implementation of programmes supporting the Decade that address the energy nexus with other development factors including water, health, food security, agriculture, gender equity and education. In particular, DESA is developing comprehensive national sustainable energy assessments designed to take into consideration in an integrated manner major development factors and allowing the empowering of poor communities based on an energy nexus approach.

XII. United Nations Human Settlements Programme (UN-Habitat)

UN-Habitat emphasises that cities today are home to more than half of the World’s population, consume 60 to 80 percent of the World’s energy resources and produce over 70 percent of the World’s Carbon emissions. The global urban population will grow from the 3.3 billion people in 2008 to almost 5 billion by the year 2030. Almost all of the growth will occur in unplanned and underserved city slums of developing countries. The pace of urbanization far exceeds the rate at which basic infrastructure and services including modern energy could be provided. Today, there are more than 1 billion people in cities living from less than 2 US\$ per day. These people are also affected in particular by energy poverty. This figure is likely to double until 2030, shifting the centre of gravity from rural to urban energy poverty. Substantial intervention with a focus on cities, towns and human settlements are becoming increasingly necessary in the course of the 21st century.

This understanding translates into an important strategic compliment and added values that UN-Habitat is contributing under the frame of the *United Nations Decade of Sustainable Energy for All*.

Cities represent places of opportunity in terms of social, cultural and economic development. This is the case since the beginning of human settlements as such. Cities are pivotal in achieving sustainable development and sustainable consumption. Well-planned and managed cities minimise energy consumption and enable all citizens to consume resources more efficiently. The benefits of improving Access to Modern Energy Services in poor urban and peri-urban areas are transformational: Lighting for productive activities, increased security, energy *for* basic service provision, including water and sanitation, cleaner indoor air, faster food-processing/cooking, more income-generating opportunities, industrial development and so on. Energy is one essential factor to unlock the productive potential of cities. Solutions include for instance slum electrification programmes, where the poor are given special treatments to get connected to electricity; biogas system to address sanitation systems, improved cook stoves for sustainable use of and firewood; solar home systems and solar charging stations, solar water heaters, to mention but a few.

In its Medium Term Strategic and Institutional Plan, UN-Habitat underlines that the challenges for achieving sustainable urban energy systems are: Increasing energy access, achieving energy sufficiency, improving energy conservation and energy efficiency, optimising energy demand management and promoting the deployment of renewable energy systems and appropriate technologies. Developing green cities and green economies will need supportive policies, capacity building, knowledge transfer, financial support mechanisms, market stimulation and sensitizing the population, at the regional, national and local level.

In order to tackle the energy challenges in human settlements, UN-Habitat's strategic approach in line with the *United Nations Decade of Sustainable Energy for All* focuses on four main areas of intervention:

- Urban energy planning, municipal energy policy and legislation, and urban energy finance,
- Energy access for the urban poor, with special emphasis on women and youth,
- Energy and resource efficiency in the built environment,
- Renewable energy technologies in the urban energy mix.

Urban energy planning, municipal energy policy and legislation and urban energy finance

The ensemble of energy planning, policy and legislation and finance is necessary for the systematic transfer of political ideas and agendas into urban reality. Without these three elements (in conjunction) no policy implementation and no sustainable development will be possible in cities. UN-Habitat facilitates key policy interventions in sectors like the transport sector, the commercial sector, the industrial sector, the residential sector, but also on municipal operations and a city's energy supply. The ultimate objective is to increase access to energy, while reducing emissions and the investment. All sectors are important, as they interlink on a city scale. Relevant legislative instruments promoted by UN-Habitat on the city level include for instance energy efficiency building codes and regulations on sustainable building practice. Financial instruments and mechanisms include green mortgages, green urban tax reforms and feed-in tariffs.

Urban development corridors are of special importance: City extension planning in response to rapid urbanisation and urban energy planning need to go hand-in-hand. Corridors linking several cities represent huge opportunities for cities extension through proper urban planning and opportunities for green industrial development along the same. If properly organised, this can generate job opportunity for the youth and decongest overcrowded urban areas.

UN-Habitat's initiatives in line with the *United Nations Decade of Sustainable Energy for All* include:

- Developing municipal energy strategies/policies to coordinate and guide the implementation of low-carbon action plans,

- Formulating and adopting energy and resources efficiency codes for buildings,
- Setting up appropriate financial instruments and mechanism for the implementation of energy efficiency measures in the built environment,
- Providing technical assistance with regards to feed-in tariff design.

Energy access for the urban poor, with special emphasis on women and youth

Expanding access to affordable and clean energy in human settlements is critical for achieving international development goals. Improving urban energy services is a requirement to economic development, livelihood creation and improved living conditions, as it encourages lighting for schools, functioning health clinics, water pumps and sanitation, cleaner indoor air, faster food-processing and more income-generating opportunities, among others.

Nearly 40% of urban residents in the rapidly growing cities in Africa and Asia do not have access to modern energy services such as electricity and LPG. UN-Habitat will promote energy access for the urban poor through normative interventions, such as advocacy, knowledge sharing, awareness creation and capacity building. The agency helps public utility companies in slum electrification as well as in mapping energy access in human settlements. Multifunctional Clean Energy Centres (MCECs), i.e. service centres built mainly in urban slums, provide access to modern energy services, but also to other urban basic services, including water, sanitation, and community services. Technologies deployed in MCECs include solar lantern charging stations, biogas systems, solar photovoltaic systems, solar water heating, wind power generation and wind pumping.

UN-Habitat's initiatives in line with the *United Nations Decade of Sustainable Energy for All* include:

- Developing Multi-Functional Clean Energy Centres (MCEC), i.e. service centres for urban basic services, including energy, water and sanitation.
- Strengthening of the Global Energy Network for Urban Settlements (GENUS).
- Developing urban energy corridors, an approach linking energy access and urban development alongside regional development axes.
- Organising hands-on trainings on energy efficiency and renewable energy for youth empowerment in different regions to increase uptake of renewable energy.

Energy and resource efficiency in the built environment

Energy and resource efficiency does not mean that we should reduce or sacrifice any standards of living. In the contrary, improved energy efficiency allows to reduce energy consumption and to minimize energy wastage, while maintaining or improving standards of living at the same

time. Energy and resource efficiency in human settlements is a prerequisite for achieving energy access. Especially in the urban context energy wastage and lack of energy access often coincide.

UN-Habitat helps to reduce urban energy wastage by increasing energy efficiency in buildings and other sectors. This means nothing less but to change the way cities are built, building-by-building, but also to link urban planning and neighbourhood development with energy planning and management. Environmental considerations, local climate and local culture are all integrated in the design of the new building. Energy and resource efficiency needs to be embedded as a principle in urban planning development.

UN-Habitat's initiatives in line with the *United Nations Decade of Sustainable Energy for All* include:

- Promoting of green building design and awareness raising.
- Energy efficiency data collection and benchmarking in the building sector.
- Capacity building of practitioners and other stakeholders in energy efficiency and best practices in the building sector.
- Developing tools for designing sustainable buildings that are climate friendly;
- Assisting local authorities to develop roadmaps towards low-carbon cities.

Renewable energy technologies in the urban energy mix

Renewable energy is the future. In the course of the 21st century renewable energies are an inevitable reality in overcoming both, the imminent threat of climate change and the existing energy crisis. Cities need an uninterrupted supply of energy to fuel their activities, and this is currently being met predominantly by fossil fuels. Renewable energy in the 21st century will and must play an increasingly important role. Cities can move from being mere energy consumers to also being energy producers. A lot of "un-lifted treasures" and opportunities exist, including waste to energy. UN-Habitat will promote the recovery of energy from waste, the use of solar energy technologies, and the utilization of renewable source of energy that in many developing countries are available in abundance. A key role will play taking a city-wide approach, i.e. to assume a 75-100 km boundary around the city for especially producing power from renewable energy sources, and in doing so develop a district energy system. The agency will also encourage national governments to develop feed-in tariffs.

UN-Habitat's initiatives in line with the *United Nations Decade of Sustainable Energy for All* include:

- Designing and implementing pilot renewable energy projects to enhance pro-poor access to water and sanitation.

- Promoting biogas in public institutions such as schools, prisons, hospitals, public spaces etc.
- Developing of Multi-functional Clean Energy Centres, including a multitude of renewable energy technologies.
- Producing best-practice casebooks and technology roadmaps for renewable energy use in human settlements.
- Designing sustainable municipal solid waste management system with emphasis on producing energy from waste.

The contribution of UN-Habitat in line with the *United Nations Decade of Sustainable Energy for All* will be consistent with the **new urban paradigm**, as promoted by the agency. Five principles are especially relevant in this regard:

- 1) Adequate space for streets and public space,
- 2) Mixed land use,
- 3) Social mix,
- 4) Adequate density and compact city,
- 5) Limited land use specialisation.

These principles are from our point of view to be observed and very relevant in the context of sustainable urban development. In this wider context, cities that are energy and resource efficient are also more resilient against impacts of climate change. UN-Habitat's activities as part of *United Nations Decade of Sustainable Energy for All* will also make an important impact on the creation of employment in towns and cities, in particularly in a newly established urban green economy. This will contribute to youth empowerment, as well as the empowerment of women.

Our intervention will rely on normative and operational activities include:

- Advocacy, networking and publication of good and best practices, as well as the participation in international dialogues on urban energy and human settlement development,
- Developing policies and institutional frameworks to promote access to clean energy, energy efficiency and renewable energy technologies,
- Strengthening institutional efficiency and effectiveness in the provision of urban energy services,
- Enhancing consumers' demand for efficient and environmentally sound basic services,
- Designing and implementing pilot/demonstration projects, and on
- Providing technical assistance and capacity building.

XIII. United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

Regional cooperation to enhance energy security and sustainable use of energy in Asia and the Pacific are ESCAP's main objectives promoted through rigorous analysis and peer learning, translation of findings into policy dialogues and recommendations, and providing good development practices, knowledge sharing, and technical assistance to member States. ESCAP provides a forum for governments in the region to review and discuss economic and social issues and strengthen regional cooperation. In May 2013, the Asian and Pacific Energy Forum (APEF) was convened in the Russian Federation to strengthen regional consensus and promote regional cooperation for enhanced energy security and the sustained use of energy, and this was the first intergovernmental ministerial conference on energy under the UN framework. The Forum resulted in the adoption of the *Ministerial Declaration on Regional Cooperation for Enhanced Energy Security and the Sustainable Use of Energy in Asia and the Pacific*, and the *Plan of Action on Regional Cooperation for Enhanced Energy Security and the Sustainable Use of Energy in Asia and the Pacific, 2014-2018*.

In these two APEF outcome documents, energy security was identified as a key development issue that poses serious challenges to countries in the region, particularly to least developed countries, landlocked developing countries, and small island developing States. The Plan of Action contains initiatives that address the specific needs of the Asia-Pacific region and its sub-regions for the promotion of new and renewable sources of energy, to address energy security shortfalls, and facilitate continuous dialogue and cooperation to enhance energy security and work towards sustainable development. Supported areas of action included 15 areas including: A. Establish a platform for continuous dialogue, B. Work towards universal access; C. Advance the development and utilization of renewable energy; D. Improve energy efficiency; E. Diversity the energy mix; F. Improve energy trade and investment opportunities; G. Improve fiscal policy and financing mechanisms; H. Improve energy statistics, I. Minimize the environment impact of the energy sector; J. Promote more efficient and cleaner use of oil; K. Promote the efficient and clean use of coal; L. Promote expanded production, trade and use of natural gas; M. Promote the development of advance energy technologies; N. Develop common infrastructure and harmonized energy policies; O. Promote capacity-building; and 5 Subregional initiatives from East and North-East Asia, North and Central Asia, The Pacific, South and south-West Asia, and South-East Asia. The outcome documents acknowledged that energy was of crucial importance as a prerequisite of poverty eradication, ensuring sustained economic growth, and achievement of the MDGs. Furthermore, it was recognized that the UN development agenda beyond 2015 will not be advanced and sustainable development goals will not be achieved without affordable, accessible, and sustainable energy services.

In facilitating the implementation of the APEF outcome documents, ESCAP took the initiative to provide a platform for policy makers to hold continuous dialogue by organizing a three-day policy dialogue on energy for sustainable development in December 2013. The Policy Dialogue reviewed and agreed in establishing APEF Review and Assessment Mechanism to facilitate the implementation of the APEF outcome documents. The APEF Review and Assessment Mechanism, which will consist of (1) portal containing data and policy information, (2)

analytical review papers and (3) organization of an annual policy dialogue. The Mechanism is expected to facilitate in developing a more focused regional cooperation mechanism towards the next Asian and Pacific Energy Forum in 2018. This process is expected to also support the implementation of the Decade of Sustainable Energy for All.

For the Asia-Pacific region, ADB, UNDP and ESCAP have agreed to jointly establish a regional hub hosted by ADB to support the implementation of the sustainable energy for all. The regional launching of SE4ALL and the Asia-Pacific regional hub will be held during the Asia-Pacific Clean Energy Forum, 18-20 June, 2014 Manila.

The Asia-Pacific region combines both the largest producers and consumers of energy and, although the importance for inter-regional trade is constantly growing, the potential for full-fledged energy cooperation is far from being adequately exploited. This is particularly lacking in light of the growing need and opportunity associated with the Asia-Pacific energy demand projected to almost double by 2030, high rates of urbanization and population growth, and continued reliance on fossil fuels. It was resolved at the 2013 APEF to create a greater regional voice in energy related international forums, enhance regional and sub-regional cooperation, and to participate actively in regional and global decision-making processes. In support of the goals of the Decade, new and renewable energy sources were targeted as needing to increase their share in the regional energy mix, as well as boosting end-use energy efficiency, and moving towards universal access to sustainable modern energy services.

The APEF emphasized raising the profile of energy, mobilizing financial resources, working closely with UN-Energy and other relevant international and multilateral organizations to promote partnerships and enhance energy security, facilitating dissemination of information and exchange of best practices, and promoting networking and information sharing.

In addition, with funding support from International Fund for Agricultural Development (IFAD) and the UN Development Account, ESCAP is implementing a multi-year project to widen access to modern energy services for rural communities through the programme, Pro Poor Public Private Partnership (5P) for Rural Development. 5P develops national and local capacities to attract private sector investment in rural energy access with the locally available renewable energy resources. In its early stages, pilot projects will be established in Nepal and Lao PDR to demonstrate innovative models to leverage the strengths of government, the technical and financial advantages of the private sector, and the cooperative competencies of rural communities. A second initiative ESCAP is supporting is the creation of the Asian Energy Highway, aimed at advancing regional energy planning, infrastructure development, and power trading across Asia and the Pacific, e.g., through an integrated regional grid. Development of an integrated regional grid is a regional priority to promote diversification within the energy generation mix, optimize efficiencies in energy resource consumption, and reducing susceptibility to power shortages in a cleaner and low-carbon manner.

XIV. **United Nations Economic Commission for Europe (UNECE)**

The **UNECE** brings together 56 countries to facilitate greater economic integration and cooperation among its member countries and promote sustainable development and economic prosperity. These objectives are realized through policy dialogue, negotiation of international legal instruments, development of regulations and norms, exchange and application of best practices and economic and technical expertise, and technical cooperation. UNECE will play an active role in supporting the Decade through the regional and global implementation of projects and activities that achieve these objectives by securing affordable and sustainable energy. UNECE initiatives promote dialogue and knowledge-sharing, and facilitate expert networking on sustainable energy to enhance intraregional and interregional cooperation and thus show pathways to sustainable energy that fall within the context of UN-Energy. Work explores the sustainability challenges of the energy sector and how UNECE can contribute to sustainable development and achieving a low carbon economy.

The UNECE sub-programme on Sustainable Energy, through its Committee on Sustainable Energy (CSE) and subsidiary bodies carry out a programme of work in the field of sustainable energy to provide affordable and clean energy in line with SE4ALL objectives, and help reduce greenhouse gas emissions and the carbon footprint of the energy sector. UNECE work on sustainable energy is performed through concrete and results-oriented activities on issues in these core areas: cleaner electricity production from fossil fuels, coal mine methane, energy efficiency, natural gas, renewable energy and resource classification.

In the field of energy efficiency, UNECE areas of work cover regulatory and policy dialogue, addressing financial, technical, and policy barriers to improve energy efficiency implementation, and the sharing of experiences and best practices, including at the institutional level, in order to address market failure. In support of cleaner electricity production from fossil fuels, UNECE focuses on activities that significantly reduce greenhouse gas emissions from electricity production from fossil fuels, including carbon capture and storage, enhanced oil recovery with CO₂, and advanced fossil fuel technologies for power generation. Regulatory and policy dialogue and sharing best practices are primary tools used to significantly increase the uptake of both energy efficiency and renewable energy.

Currently, UNECE is advancing the development, dissemination, and maintenance of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources (UNFC), a global classification system for energy and mineral reserves and resources. In particular, priority is being given to the development of a common assessment methodology for renewable energy resources based on UNFC. A common methodology will provide a measure of comparability and reduce subjectivity in resource estimates and valuations; offer a basis to estimate the scale and potential of each renewable resource; provide more reliable estimates based on standards that consider widely-adopted technological advances and a consensus on

best practices; and provide the foundation to calculate a range of metrics, such as profitability, operating costs, or net income per equivalent energy unit.

A new UNECE Group of Experts on Renewable Energy is mandated to work on regulatory and policy dialogue and sharing of best practices on renewable energy with a view to increasing the share of renewables in the global energy mix. Early on, priority will be given to tracking the state of renewables in the UNECE region.

UNECE is also a lead agency in implementing the UN Development Account project, Promoting Energy Efficiency Investments for Climate Change Mitigation and Sustainable Development, jointly with other UN Regional Commissions. The objectives of this joint effort are to develop energy efficiency investment projects and providing capacity building, improving the regulatory and institutional framework for promoting new financing for energy efficiency projects, attracting investment, and providing case studies on the experience of policy reforms.

XV. Economic and Social Commission for Western Asia (ESCWA)

ESCWA promotes economic and social development through regional and sub-regional cooperation and integration and serves as the main general economic and social development forum for 17 Arab countries in Western Asia. Accordingly, through its sub-programme on sustainable development and productivity, ESCWA continues to play an active role in promoting sustainable energy that comes in line with the context of the United Nations Decade of Sustainable Energy for all.

In recognition of SE4ALL objectives, ESCWA will support its member countries to take tangible actions to achieve the Decade during 2014-2024 at regional and national levels through: formulating and promoting development assistance activities and projects commensurate with the need for sustainable energy, and acting as an executing agency for relevant operational projects. It will also provide frameworks for the formulation and harmonization of sectoral policies for member countries, platforms for congress and coordination, home for expertise and knowledge, and will act as information observatory.

ESCWA's work on sustainable energy primarily focuses on access to modern energy services, transition to sustainable energy consumption and production patterns, improvement of energy efficiency and promotion of the use of renewable energy. Accordingly, ESCWA's programs and activities will be expanded in various directions during the Decade (2014-2024) so as to further contribute towards achieving SE4ALL objectives.

ESCWA is currently preparing for the organization of "The 2nd Arab Forum for Renewable Energy and Energy Efficiency "Enhancing the Role of Small and Medium Enterprises in Promoting RE & EE" in collaboration with the League of Arab States (LAS), the Regional Center for Renewable Energy & Energy Efficiency (RCREEE), the Ministry of Electricity and Renewable Energy (MOERE) in Egypt, and the European Union's project "Mediterranean Energy Efficiency

in the Construction Sector –MED-ENEC”. This forum will initiate a regional dialogue between relevant stakeholders to discuss the current status and future prospects of SMEs working in the EE & RE fields in the Arab region and the necessary means for strengthening their involvement in accomplishing the “Sustainable Energy for All” (SE4All) agenda, and the development of RE & EE in the region, including in rural and remote areas.

In its efforts towards improving energy efficiency, ESCWA is implementing a UNDA project on “Promoting Energy Efficiency Investments for Climate Change Mitigation and Sustainable Development”, which focuses on improving the capacity of national project developers and energy experts in developing countries and countries with economies in transition to develop energy efficiency investment projects in private and public sectors, and improving the regulatory and institutional framework for promotion of new financing mechanisms for energy efficiency projects through regional training and workshops. The project is implemented in collaboration with the other four Regional Commissions and DESA.

ESCWA is also planning to implement a regional project on “Up-scaling Energy Efficiency in the residential and services sectors in the ESCWA Region”. This project intends to assist member countries in developing appropriate tools and mechanisms to allow them to make a shift in scale and magnitude in the implementation of energy efficiency programmes and projects in the building sector. This regional project will focus on helping ESCWA Member Countries in mobilizing the necessary means to tap into the enormous EE potential in the **existing building stock** and provide a “**jump start**” for such programmes that can reshape, in the short term, energy consumption patterns in the building stock, and reinforce, by providing tangible results, the ongoing and more long term EE approaches that are being developed or implemented.

ESCWA is also working on the development of different projects in the field of renewable energy including: “Enhancing & Improving Access to Energy Services through Development of Public Private Renewable Energy Partnerships” that seeks to build the capacity of governments and other stakeholders on public private partnership for promoting renewable energy services in rural areas. In addition, ESCWA will be implementing a UNDA project on promoting renewable energy investments for climate change mitigation and sustainable development in collaboration with the Economic Commission for Europe. The project will develop the skills of the public and private sectors at the national level to identify develop and implement RE investment projects, provide assistance to authorities to introduce regulatory and institutional reforms needed to support these investment projects, and enhance financing of renewable energy projects in selected countries. Furthermore, a RE training center, hosted by the Agricultural Research Center at the American University of Beirut (AUB'ARC) sited in a rural area of Lebanon is being developed, to be equipped with operational models of different RE technologies appropriate for rural areas that will be used as hands-on training tools. This center, which is the last phase of ESCWA’s UNDA project on “Climate Change Mitigation for Poverty Alleviation in Western Asia”, aims to develop the use of RE resources, promote awareness, develop national capacity, attract interest of the small scale investments, and enhance research and development activities in the field of RE.

Acknowledging the strong linkage between sustainable access to water and sustainable access to energy services, and the deep relationship between water production, distribution and consumption patterns and associated energy consumption modes, ESCWA will be implementing a UNDA project on "Developing the Capacity of ESCWA Member Countries to Address the Water and Energy Nexus for Achieving Sustainable Development Goals". The project intends to strengthen the capacity of ESCWA Member Countries to pursue an integrated and sustainable management of water and energy resources to achieve sustainable development.

Furthermore, and as green economy is recognized as an important tool in transitioning towards sustainable development and achieving poverty eradication, ESCWA will be implementing a UNDA project on "Building Capacities in Developing Appropriate green technologies for improving the livelihood of rural communities in the ESCWA region" , which aims at strengthening the capacities of countries to mainstream appropriate pro-poor green technology initiatives into national development programmes and policies, in order to enhance livelihood of rural communities.

XVI. International Fund for Agricultural Development (IFAD)

IFAD focuses on rural poverty reduction, working with poor rural populations in developing countries to eliminate poverty, hunger, and malnutrition, raising productivity and incomes, and improving the quality of their lives. Given its strong link with microfinance institutions and expertise as a financial institution, IFAD is well-placed to contribute to Decade financial initiatives. There is also potential for IFAD to enhance its participation in the rural energy sector without having to re-orient its strategic framework. IFAD recommends the emphasis of income generation to increase at scale the demand for clean energy products by linking access to energy to agriculture-related activities. Additional value is gained by strengthening entrepreneurial and business skills and the promotion of private investment by providing better access to finance for rural people.

IFAD has developed country and technology-specific pilot approaches for such diverse technologies as micro hydropower in Nepal and jatropha biofuel in Mali that demonstrate the aforementioned connection between linking access to energy to income generation and agriculture. A solar powered drip irrigation system project in Northern Benin is also a notable example of successful IFAD programmes where energy and water are two critical factors for food security yet they often compete with one another for available water to keep systems running.

XVII. United Nations Capital Development Fund (UNCDF) CleanStart

CleanStart is an innovative approach to scaling up access to sustainable, low-cost clean energy for low income households, implemented by **UNCDF** and in close cooperation with the Global Environment Facility (GEF). CleanStart supports households and micro-entrepreneurs through

microfinance service providers with the goal of enabling over 2.5 million people to benefit from cleaner, more efficient energy by 2017. Currently, the programme collaborates with 18 financial service providers in Asia and Africa to work towards building a sustainable supply chain for energy technologies and services. Over the life of the programme, a total of USD 60 million will have been distributed through lending, with the potential to reduce over 300,000 tonnes of CO₂.

The CleanStart programme is delivered through four mutually reinforcing components: (i) finance for clean energy to strengthen capabilities of financial service providers to offer microfinance for clean energy with a technology-neutral approach; (ii) technical assistance to remove barriers to successful technology and financial service deployment; (iii) awareness raising and capacity building of the potential for microfinance to scale up clean energy; and (iv) advocacy and building partnerships to create an enabling policy and business environment to expand microfinance for clean energy. The long-term vision of the Programme is to dramatically scale up energy financing for the poor beyond the initial six least developed countries (LDCs) and also other developing countries with high levels of energy poverty. Its definition of clean energy refers to renewable energy solutions, low greenhouse gas emitting fossil fuels like liquid petroleum gas, and traditional fossil fuels that produce less CO₂ emissions through the use of improved technologies like improved cookstoves. CleanStart will identify high to medium potential technologies or services that could be supported through microfinance via initial market research. Ultimately, partner financial institutions will select the clean energy solutions to finance based on their own market research for financial product development.

CleanStart supports partner financial service providers, stakeholders along the supply chain, and end-users to develop scalable business models. Technical assistance is provided, for example, in the form of market research, brokering partnerships, financial product development and roll-out, strengthening supplier capability to market and reliably deliver, install, and maintain technologies and services, and end-user awareness. Financial support can also be provided to partially cover incremental costs involved with clean energy lending to the poor, and aims to leverage an initial investment of USD 26 million with refinancing, energy value chain development, and carbon financing that total USD 49.5 million. Risk mitigation instruments that are offered include pre-investment advisory assistance, risk capital grants, and concessional loans. Research grants and capacity building will be offered to develop training curricula, improve practices going forward, and assess impacts such as on client living standards, poverty reduction, business prospects, and national policies and regulations that promote adoption of clean energy among the poor.

XVIII. **United Nations Foundation (UN Foundation)**

The **UN Foundation** links the UN's work with others around the world, mobilizing the energy and expertise of businesses and NGOs to help the UN tackle issues such as climate change,

global health, peace and security, women's empowerment, poverty eradication, and energy access. The UN Foundation leads several initiatives that support the three objectives of Sustainable Energy for All – most notably the Energy Access Practitioner Network, the Global Partnership for Energy-Efficient Buildings, and the Global Alliance for Clean Cookstoves.

The **Energy Access Practitioner Network**, launched in 2011, draws together businesses, investors, and civil society organizations to deliver sustainable energy services to communities and households in areas beyond the reach of the conventional grid. With more than 1,600 members working in 191 countries, the Network focuses on market-based sustainable energy applications, emphasizing mini-grid and off-grid solutions, and catalyzing energy service delivery to achieve the objective of universal energy access by 2030. The Network seeks to mainstream new technologies, business models, and financing mechanisms that have a clear potential for strong positive impact on communities. To this end, the Network is working on forging new partnerships; amplifying the voices of practitioners as stakeholders in global energy access discussions; strengthening their capacity by providing them with a range of doorstep services and knowledge-sharing platforms; and ensuring their coordination to support and scale up a range of market-led decentralized solutions. The Network is also working on catalyzing country-specific activities and helping provide locally tailored solutions via country affiliates, Sustainable Energy Network Ghana (SENG) and the forthcoming Clean Energy Access Network (CLEAN) in India. These country affiliates will serve as a platform to help influence policy, increase advocacy for renewables, and strengthen work on the electrification component of energy access at a national scale, on both community and household levels.

The UN Foundation considers improving women's and children's health a top priority, and has initiated recent programmes to support women and children, including delivering life-saving vaccines and anti-malaria nets to children, fostering clean cooking solutions, family planning, and improving public health through mobile technologies. As part of the Sustainable Energy for All initiative, the UN Foundation is leading an effort with WHO and UN Women to increase access to, and encourage the effective and sustained use of, energy-dependent health services, with a particular emphasis on women in low- and middle-income countries. This multi-disciplinary initiative is bringing together partners from the energy and health sectors, government, business, and civil society to develop and deliver decentralized, sustainable energy solutions for health care in remote areas.

The **Global Partnership for Energy-Efficient Buildings** is a public-private partnership aimed at helping policy makers implement policies and programmes that increase investment in energy-efficient buildings. The Partnership serves as a platform where the private sector and public institutions such as the UN, World Bank, and civil society organizations can collaborate with each other to achieve the SE4ALL energy efficiency objective. The Partnership will support the Building Efficiency Accelerator launched by SE4ALL, targeting opportunities for concrete action at the sub-national level – working with cities, states, and regions in conjunction with their national government – in support of the larger Energy Efficiency Accelerator platform coordinated by UNEP.

The **Global Alliance for Clean Cookstoves** is an innovative public-private partnership to save lives, improve livelihoods, empower women, and protect the environment by creating a thriving global market for clean and efficient household cooking solutions. Exposure to smoke from traditional cookstoves and open fires, the primary means of cooking and heating for 3 billion people in developing countries, causes 4.3 million premature deaths annually, with women and young children the most affected. The Alliance's ambitious ten-year goal, in collaboration with almost 1000 public, private, and non-profit partners, calls for 100 million households to adopt clean and efficient cookstoves and fuels by 2020.

Over the past year the Alliance and its partners have made great strides in developing a market for clean cooking solutions, with 9.6 million clean cookstoves manufactured – a doubling of previous figures. The Alliance also is driving investment into the sector, supporting capacity building for entrepreneurs and increasing financing through mechanisms such as the Spark, Pilot Innovation, and Women's Empowerment Funds, which have provided more than \$3 million in grants. In addition, the Alliance has provided support to 13 global testing and knowledge centers and engaged in new health, environment, gender, and adoption research in dozens of countries where national policies are identifying clean cooking solutions as integral to achieving improvements in energy access, women and children's health, and the environment. These efforts are most evident in the Alliance's focus countries of Bangladesh, China, Ghana, Kenya, Nigeria, and Uganda. The Alliance has also concluded market assessments and country action planning meetings with stakeholders in India, China, and Guatemala to support the clean cooking sectors in these countries.

XIX. Renewable Policy Network for the 21st Century (REN21)

REN 21's goal is to facilitate a global transition to renewable energy in both developing and developed economies. REN21's multi-stakeholder network brings together governments, non-governmental organisations, international institutions, industry as well as science and academia to learn from one another and build on success. Its flagship publication, the *Renewables Global Status Report*, provides a timely and comprehensive overview of renewable energy market, industry, investment and policy development worldwide.

From 2014-2024 REN21 will continue to document the status of renewables through this annual report as well as its Renewables Interactive Map. Additional work by REN21 will focus on detailing the current level energy access and evolution of the renewable energies from a regional perspective. From 4-7 October 2015, REN21 will co-convene with the South African Government the South Africa International Renewable Energy Conference (SAIREC). SAIREC will provide Africa with the unique opportunity to showcase its nascent yet promising renewable energy industry and gain experience from the best practices adopted in countries at the forefront of renewable energy deployment. The status of renewable energy and energy efficiency in West Africa will be detailed in an upcoming publication *ECOWAS Renewable Energy and Energy Efficiency Status Report*. A dedicated report on distributed renewable energy will be

produced. Given high levels of energy poverty, initial research efforts will be concentrated on Sub-Saharan Africa.

To further support energy access efforts REN21, in partnership with other organisations, is developing a Mini-grid Policy Toolkit. This toolkit will help policy makers understand the importance of mini-grids in a country's energy structure: it will also assist policy makers in designing the best policy structure to support implementation. Other products in line with the SE4ALL objectives will be developed over the decade, drawing REN21's 500+ global network of renewable energy experts.

XX. International Renewable Energy Agency (IRENA)

In recognition of its central role as the only global intergovernmental organization dedicated solely to renewable energy, IRENA has been nominated the **Renewable Energy Hub within the SE4ALL initiative** – the UN Secretary-General's call for global action around three aspirational goals: Ensuring universal access to modern energy services, doubling the global rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix by 2030.

IRENA is uniquely positioned to take a lead role in advancing the aspirational goal of doubling the share of renewables in the global energy mix. In doing so, IRENA will engage with those who have made specific commitments to renewable energy within the Initiative and in the context of different SE4ALL High Impact Opportunities (HIO) on issues of relevance to its programmatic agenda, such as work on islands, cities, off-grid lighting and the water-energy-land Nexus. Close cooperation with other SE4ALL hubs, as well as the Global Facilitation Team, will be central to this work. IRENA will work closely with regional banks to ensure synergies and complementarity of efforts with IRENA's activities in regions.

In order to provide an inclusive framework and bring together all actors, IRENA has developed a **roadmap for doubling the global share of renewable energy by 2030 – REmap2030** – by identifying policy needs, highlighting opportunities for international cooperation and possible technology options. The findings of REmap2030 conclude that a global energy system with one third share of renewables in 2030 is feasible and would provide added investment opportunities, while keeping the system costs of energy at the same or lower level. REmap2030 is a tool for action and a framework for the analysis and review of opportunities for transformational change. The findings are now translated into concrete country policy and strategy recommendations.

The findings inform SE4ALL investment and financing and support the SE4ALL renewables committee's goals of developing a set of recommendations to advance the objective of doubling the share of renewable energy in the global mix by 2030 and of initiating a set of game-changing initiatives/instruments in support of the renewables objective. In the course of 2014-2015, IRENA will work with interested countries and other stakeholders under the

REmap2030 umbrella on specific issues such as transportation and other areas that could have a transformative impact on the deployment of renewables. IRENA will continue to expand the range and scope of technology, geographical and topical work to provide a sound knowledge base for efforts made toward sustainable energy for all.

IRENA will also contribute to the UN Decade through its **regular programmatic activities** around the following objectives:

- Mainstreaming renewable energy options and strategies in energy plans;
- Making renewable energy knowledge accessible to all;
- Improving policy frameworks and enabling market conditions for accelerated deployment of renewable energy;
- Contributing to sustainable livelihoods through access to renewable energy;
- Transforming island energy systems through renewable energy; and
- Regional cooperation on increasing deployment of renewables, to meet growing energy demand.

XXI. United Nations Children’s Fund (UNICEF)

Children, mothers, energy, climate change and equity are inextricably linked. In fact, energy plays a key role in children and mothers’ development and well-being. For example, children need energy at home to do homework after dark, at health centers to get proper treatment, including at night time, and for transportation to school. Mothers need energy for maternal health care, for cooking meals and boiling water, and also for income-generating activities. In many places, children and mothers’ energy needs are simply not met, or they depend on unsustainable energy resulting in for example household air pollution from which 534,000 children under five die annually.

UNICEF is stepping up its involvement to ensure climate change will not further infringe on children’s rights. As part of that, it is expected that promoting innovative sustainable energy solutions for children, is expected to become one of the priority areas. Already, UNICEF is increasingly applying sustainable energy solutions in its Country Office Programmes of Cooperation, and is in the process of exploring possibilities to scale up its involvement and investments in this area.

Some examples of UNICEF’s current work on sustainable energy are the following:

- **Improved cook stoves in Bangladesh:** This carbon offset initiative started in early 2014 and is a joint initiative of the UK Committee for UNICEF and the UNICEF Bangladesh Country Office (CO), with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH as the main implementing partner. Set up for a period of ten years, the

initiative brings together businesses and the international development sector, through the purchasing of carbon credits, with Marks & Spencer (M&S) as the first major company participating in this new “financing for development” scheme.

Over the course of its lifespan, the initiative will provide 40,000 low-income households in Bangladesh with improved cookstoves that are technologically similar to and which uses the same fuel as the traditional ones used in the country, but which are much more efficient. These improved stoves need only half the amount of fuel as traditional stoves and have chimneys. As a result, they produce one ton less of carbon per year than a traditional stove, and reduce the amount of toxic smoke and particulates in homes. Community entrepreneurs are being trained in how to make the stoves from locally available materials, then sell them at a subsidized affordable rate, and provide maintenance and user support. Cooperation with local and international universities is being established to bring forward the research on indoor air pollution in Bangladesh and the effectiveness of improved stoves, respectively.

- **Project Lumière in Burundi:** Project Lumière started in mid-2013. Through collaboration between stakeholders including UNICEF, the private sector partner Nuru Energy, the local NGO FVS, community volunteers, the University of Brussels and local academic institutions, the project aims at strengthening services for children at the community level and help deliver sustainable energy solutions.

Over the course of the pilot phase, 16 community groups from three different provinces with varied geographic and economic profiles will participate in the project. These community groups purchase a PowerCycle (pedal-powered generator) and rechargeable LED lights to be sold within their communities. Each group, comprised of up to 45 members, makes an initial payment towards the purchase of the generator, and pays down the balance over a fixed period of time through revenue generated from the sale and recharge of the LED lights. In parallel, UNICEF works closely with the local NGO, which serves as micro-finance partner, to support the development of a community-owned social enterprise to oversee management, procurement and distribution of additional lights and other affordable off-grid energy solutions.

- **‘Youth Kiosks’ and ‘MobiStations’ in Uganda:** UNICEF Uganda’s Innovation Lab has developed two key products which run on sustainable energy together with local experts.

Youth Kiosks are robust computers, powered through solar energy, usually consisting of a set of three low-energy laptops which are mounted in a metal housing to a wall. They are loaded with a great variety of educational material, including Uganda’s national

school curriculum in video format. Currently, 37 of these mobile school labs are placed in youth centres in poor rural and urban settings. Installing the Youth Kiosks in public spaces is particularly important in providing access to information and education to those children that have dropped out or never attended school in the first place. In addition to the educational information children receive through operating the Kiosks, they acquire basic computer literacy as a practical skill that can be of great advantage in their future work-life.

MobiStations are the digital version of the ‘school-in-a-box’ that has been provided by UNICEF as a hallmark disaster response for the last twenty years. These portable technology platforms can be powered through solar energy, generator, or grid. They include a laptop, micro projector, multiple camera devices, speakers, and batteries. MobiStations feature multiple USB ports, extended battery life, optional solar panels, and can function as content servers and wireless hotspots. They are pre-loaded with free quality educational content and can be used for a variety of contexts such as education and trainings in schools, universities, the health sector, and also in emergency settings. In the latter, MobiStations are usually combined with UNICEF’s Rapid Family Tracing and Reunification (RapidFTR) software with the objective to support reuniting disconnected families in these settings.

UNICEF has also recently commissioned a paper on “Sustainable Energy for Children and Mothers in Developing Countries, An overview of children and mothers’ energy needs, barriers in meeting these, and policy recommendations to move forward”. The paper aims to inform governments and development partners on children and mothers’ distinct energy needs and the state of the art in meeting these sustainably. It identifies specific barriers that hamper children and mothers’ access to sustainable energy and provides targeted policy recommendations. The paper is expected to be launched the second half of 2014. UNICEF plans to follow up on the recommendations in the paper through its Country Programmes, with global policy advocacy, and partnerships.