WORKPLAN ON ENHANCING MITIGATION AMBITION

TECHNICAL EXPERT MEETING ON ACCELERATING ENERGY EFFICIENCY IN URBAN ENVIRONMENTS

Friday, 5 June 2015, 13.30–17.30

Saturday, 6 June 2015, 10.00–13.00

Summary by the facilitator Ms. Sylvie Lemmet (France)

As part of the technical examination process under the Ad Hoc Working Group on the Durban Platform for Enhanced Action, a technical expert meeting (TEM) on accelerating energy efficiency in urban environments was held in Bonn, Germany, on 5 and 6 June 2015. This TEM built on the recommendations and findings of the participants of the two TEMs held in March and June 2014 on broader aspects of energy efficiency and urban environments. This meeting focused on: the potential for and benefits of enhanced energy efficiency policies in urban environments; ways to accelerate implementation of scalable, replicable and transformative actions; and ways to turn potential into action on the ground. Participants that represented Parties, subnational authorities, private sector organisations and international organisations and partnerships engaged in an in-depth discussion to share experiences in urban energy efficiency policies in three sectors: lighting and district energy systems (DESs), energy-efficient buildings and sustainable urban transport.

Many replicable success stories from different parts of the world demonstrated how to address the technical and non-technical challenges in urban environments through the concerted action of multiple stakeholders. Participants agreed that the benefits of energy efficiency, including economic improvements, increased climate resilience, energy security, health and other social impacts, should be widely communicated in order for energy efficiency to become a more broadly accepted solution for the transition towards a low-emission society. Benefits of increased cooperation between Parties and non-State actors were highlighted, and in this respect, strengthening international partnerships was pointed out as an efficient way to unlock the potential of cooperative action on the ground. To ensure further acceleration of implementation, participants called for better coordination and synergies among the UNFCCC institutions.

The following points summarize the discussion at the TEM with respect to the three sectors that were covered at the meeting:

- Access to data demonstrating health and economic co-benefits of energy efficiency (e.g. databases of the World Health Organisation and the En.lighten initiative of the United Nations Environment Programme (UNEP)) is important to convince policymakers at all levels about the need for accelerated implementation, but further work is needed to enhance availability of such data;
- Phasing out inefficient lighting products and aiming at 100 per cent use of light-emitting diode (LED) systems is one of promising energy efficiency policies. The En.lighten initiative could contribute to the achievement of such objectives;
- Upscaling actions in the building sector is much needed. Establishment of a global alliance of the existing initiatives working on energy efficiency in buildings can help provide integrated support options and scale-up the global engagement by Parties and non-State actors. UNEP and France proposed to work in this direction with all stakeholders;
- Improving fuel efficiency leads to multiple co-benefits, especially those relating to public health improvements owing to reduced air pollution. To this end, the Global Fuel Economy Initiative can support implementation of relevant fuel economy policies in

selected countries. Further measures are needed to limit obsolete vehicles import and to promote the use of electric vehicles.

Realizing the potential for and benefits of accelerated energy efficiency in urban settings

Participants of the TEM heard that urban areas are associated with approximately 70 per cent of the global energy consumption and 75 per cent of energy-related greenhouse gas emissions.[1] Cities occupy about 3 per cent of land surface and contain more than 75 per cent of the human population. Owing to the projected rapid urban population growth, cities will continue to face significant energy, transportation and air pollution challenges. Addressing these challenges will require a broad variety of instruments such as integrated urban planning, regulatory solutions and implementation capacities. The participants highlighted the fact that the number of examples of proven policy approaches and existing technologies that can be replicated and scaled up in many urban environments in developed and developing countries is increasing.

To address these challenges, cities are undertaking energy efficiency actions that are largely motivated by associated economic, social and environmental co-benefits, which, for many cities, are the main drivers for climate action. These benefits relate to energy efficiency improvements at individual, sectoral, national and international levels. For example, the significant health benefits of energy efficiency stem from lasting local improvements in urban environments (e.g. air quality changes). Such improvements make energy efficiency a socially attractive solution. Other examples of co-benefits that drive action by local governments, financial institutions and other relevant stakeholders are the potential cost savings resulting from energy efficiency policies, which offer short payback periods and low costs. Although many mitigation policies are local in nature, their effects can be multiplied through policy replication at the national level and beyond. There was an understanding among the participants of the TEM that although the co-benefits are clear, they should be widely communicated for energy efficiency to become a broadly accepted solution for the transition towards low-emission society.

With regard to the opportunities relating to energy efficiency, the Sustainable Energy for All (SE4ALL) partnership highlighted the fact that significant energy efficiency potential could remain untapped by 2035 unless energy efficiency actions are accelerated on the ground. In this regard, the SE4ALL Global Energy Efficiency Accelerator Platform was established to support sector-specific needs by creating opportunities for high-paced implementation action. According to past trends, energy efficiency has been the largest resource since 1974 and was named as the first fuel by the International Energy Agency.

It was further emphasized that collaborative action by the public and private sectors in addition to stronger vertical integration and cooperation among national and subnational governments is needed to accelerate climate action in urban environments. There is also a need for a more comprehensive cross-sectoral approach to energy efficiency due to the strong links between the economic sectors (e.g. territorial planning for buildings, transport and DESs). In this respect, the role of the TEM in bringing together stakeholders from all these sectors and levels of government was highlighted.

Accelerating the implementation of scalable, replicable and transformative actions

At the meeting, participants discussed options to bring action to fruition, mobilize finance, technology and capacity-building, and ways to overcome barriers in the three sectors discussed at the meeting, which are also significant energy users and therefore represent a sizeable potential for energy efficiency improvements, especially in urban environments.

[1] The Intergovernmental Panel on Climate Change estimated that in 2010, urban areas accounted for 67–76 per cent of global energy use and 71–76 per cent of global carbon dioxide emissions from final energy use.

While it was highlighted that there is no one-size-fits-all policy or technological solution, many opportunities to scale up action were identified. In addition, several suggestions on the way forward under the technical examination process were made.

Lighting and district energy systems

Cities and regional governments shared their practical experiences in using DESs for cooling and heating and efficient street lighting systems, which created: affordable local energy supplies; reductions in electricity, water and chemical consumption; cost savings; energy systems thinking that encompasses energy, transport, buildings and industry sectors; and better resilience to the changing climate.

The introduction of efficient lighting products has made a visible breakthrough in the recent past. For example, the En.lighten initiative by the UNEP has made a remarkable input in phasing out inefficient lighting products and systems through creation of enabling environments, setting minimum energy performance standards (MEPSs), supporting the collection and recycling of obsolete products and promoting 100 per cent LED-based solutions.

Experiences in implementation of efficient lighting and DES projects have demonstrated that there are barriers related to lack of regulatory frameworks, inadequate access to energy resources, high costs of maintenance and retrofitting of energy systems, provision of reliable public services and lack of financial resources for system retrofits. There is a growing understanding that increased access by cities to the financial markets is a key factor for promoting energy efficiency on the ground. Financing for cities should be complemented by integrated support packages covering capacity-building related to crediting, project formulation, institutional arrangements and pre-feasibility studies, which allow cities to obtain improved terms and access to financing.

Participants discussed various policies and technologies that are already being implemented on the ground to scale up energy efficiency actions. These include:

- In efficient lighting systems – development of integrated low-emission development strategies, including: phasing out of incandescent lighting and use of LED lighting; installation of efficient technologies and removal of obsolete technologies; environmentally friendly disposal and recycling of used lamps; availability and access to financing instruments and tools; establishment of energy servicing companies (ESCOs); setting MEPSs for lighting; and supporting policies to promote public acceptance and demand for energy-saving lighting.

- In DESs – detailed assessment of the scope and potential for introduction of DESs, including: the availability of renewable energy sources and the energy efficiency potential in energy distribution, heating and cooling systems; related capacity-building and methodology development; establishment of cross-sectoral technical units in local governments; and implementation of pilot testing projects.

Energy-efficient buildings

There are many success stories on cities improving energy efficiency in the buildings sector, which is recognized as a sector with significant mitigation potential, the largest energy consumption and many low-cost mitigation opportunities. Participants highlighted the sustainable development co-benefits associated with efficiency gains in buildings such as reductions in energy use, addressing electricity and water shortages, higher property prices, public health improvements and better living conditions.

The success stories varied from putting in place long-term national and city development strategies and innovative building legal frameworks, together with convening and empowering communities (such as building users) and engaging the private sector. It has

been proven that long-term development strategies encourage commitment to technology innovation, compliance with building efficiency standards and rating schemes, new businesses development, and sustainable private investment flows for efficient building construction and renovation. A mix of mandatory efficiency requirements, standards and voluntary approaches has been applied to implement good practice measures on the ground.

It was highlighted by participants that the impediments which inhibit acceleration of financial investments in the buildings sector relate to non-technical barriers such as high transaction costs, split incentive schemes, a variety of market actors, information asymmetries, lack of structured financial instruments and insufficient regulatory frameworks. Mobilization of local financial institutions, establishment of ESCOs, technical assistance programmes, integrated investments projects covering both adaptation and mitigation measures, and provision of blended concessional finance combined with policy dialogues and capacity-building have been proven to deliver implementation results. It was recognized that there is a need for scaling-up actions in this domain and coordination of fragmented interventions.

Various policy options, actions and technologies were discussed at the meeting, including: the introduction of building codes, and sustainable architectural and construction guidelines (for building design and materials); territorial and land-use planning for building positioning; retrofitting programmes; and financial instruments such as blended concessional financial schemes.

Sustainable urban transport

Participants highlighted the importance of an integrated planning approach in the transport sector that covers aspects such as urban infrastructure development, mobility enhancement, mass road and rail public transportation and freight, non-motorized transportation, fuel efficiency, new technologies and information technology solutions, capacity-building and public awareness.

In terms of the development of new technologies, it was highlighted that battery-powered electric transport systems are a viable proven solution and are now a reality in some European and Asian cities. China was highlighted as a leading country in electrifying passenger transport. Many technological barriers such as vehicle autonomy, battery charging time and vehicle weight have been successfully addressed.

Investment alone is unlikely to contain the surge in individual mobility that is the most important emission reduction driver, and without new mobility patterns, the transport sector is unlikely to decarbonize. Owing to expensive infrastructure, efficiency improvements in transport are more expensive than in other sectors. However, when the co-benefits, such as improvements in road safety and air pollution, are taken into account, the cost–benefit ratio becomes more balanced, which makes mitigation of transport emissions more socially attractive. Improved fuel economy is necessary to abate emissions from the growing vehicle fleet. In this regard, the Global Fuel Economy Initiative promotes knowledge, methodology and information sharing and wider use of capacity-building toolkits.

Participants discussed various policy options and technologies aiming at promotion of modal shifts from private to public transport, including: development of mass public transportation systems; use of non-motorized transport and electric vehicles; and changing mobility patterns. In addition, the following good practice policies were highlighted at the meeting: regulations and voluntary sectoral commitments (for automobile fuel economy); fuel efficiency framework targets (e.g. for the use of renewable energy sources in transport fuels); economic incentives (e.g. vehicle purchase and fuel taxes, and road pricing); voluntary enterprise challenges; partnerships and government programmes; and long-term research and development.

Action through 'accelerator partnerships': turning potential into action on the ground

There are many support opportunities offered by multilateral partnerships to assist national and subnational governments in the implementation of energy efficiency policies. Many partnerships shared their long-term plans relating to expansion of country coverage, new commitments, additional emission reductions, etc. A few examples presented at the meeting include: the UNEP's En.Lighten initiative, the SE4ALL Global Energy Efficiency Accelerator Platform, the Low-Carbon Technology Partnership Initiative, the Global Fuel Economy Initiative, the Build Upon initiative by the World Green Building Council, 1 Gigaton Coalition, the Transformative Actions Programme by ICLEI local governments for sustainability, and the Partnership on Sustainable Low Carbon Transport.

Importantly, the Lima–Paris Action Agenda provides enhanced political support and visibility to multilateral initiatives and help Parties to address such gaps to accelerate action on the ground. Transport and building sectors were mentioned as the two sectors where further strengthening of cooperation and partnerships is needed.

The UNFCCC institutions demonstrated their readiness to support Parties and other stakeholders, such as cities, in promoting energy efficiency. Participants called for streamlining of institutional arrangements to ensure closer ties, synergies and stronger cooperation under the Convention. For example, proposals were made to enhance collaboration by: having the same focal points for different issues under the Convention, financing of Clean Development Mechanism (CDM) projects under the Green Climate Fund (GCF), and provision of result-based finance to implement TEM recommendations. Some ongoing examples of cooperation were presented, such as the Climate Technology Centre and Network (CTCN) working closely with ICLEI and using the lessons learned from the CDM.

Further, participants suggested: to review, in 2016, the progress achieved by the initiatives presented at the TEM; to conduct more focused discussions at future TEMs; to engage more stakeholders through the CTCN; and to look closely at energy efficiency as a priority for financing by the GCF.