

Virtual Event Series: The Asia Regional NDC Clinic

Session 2 - Deploying Energy Efficiency Solutions in the Use of Appliances¹

(25 January 2022, 1400-1600 GMT+7)

Context Setting

Despite many pledges and efforts by governments to tackle the cause of global warming, CO₂ emissions from energy and industry have increased by 60% since 1992 when the UN Climate Change Convention was signed (IEA, 2021)². Energy efficiency has a central role in tackling climate change and meeting targets embedded in the Nationally Determined Contributions (NDCs). Around 44% of the CO₂ emission reductions needed to meet the Paris Agreement can come from energy efficiency measures (IEA, 2018)³ and solar, wind and energy efficiency combined can deliver around half of emissions reduction required to put the planet on a net zero emission pathway in 2030 (IEA, 2021). Without efficiency, renewable's potential alone will not be sufficient in bringing the much-needed sustainable energy transition.

According to experts' estimation, majority of energy savings could even come from less energy-intensive sectors like light manufacturing and to realize these savings, performance standards for key industrial equipment, including electric heat pumps and motors, can be complemented by incentives to increase the adoption of energy management systems and improved information (IEA, 2018). Currently lighting, appliances and equipment account for more than 50% of total global electricity consumption, which is expected to grow by over 30% by 2030 and double by 2050 in developing countries. More energy-efficient lighting, appliances and equipment alone can save the electricity used each year equivalent to over 300 large power plants, saving emerging economy consumers in all global regions more than \$60 billion annually. Beyond industry, energy efficiency also brings promises in transport (i.e. *transport activity can double with energy demand stay unchanged to 2040*) and building sectors (i.e. *60% more building space in 2040 for no additional energy use*) (IEA, 2018). In the Synthesis Report published by the UNFCCC Secretariat in September 2021, reviewing 164 new or updated NDCs communicated by 191 Parties, it was

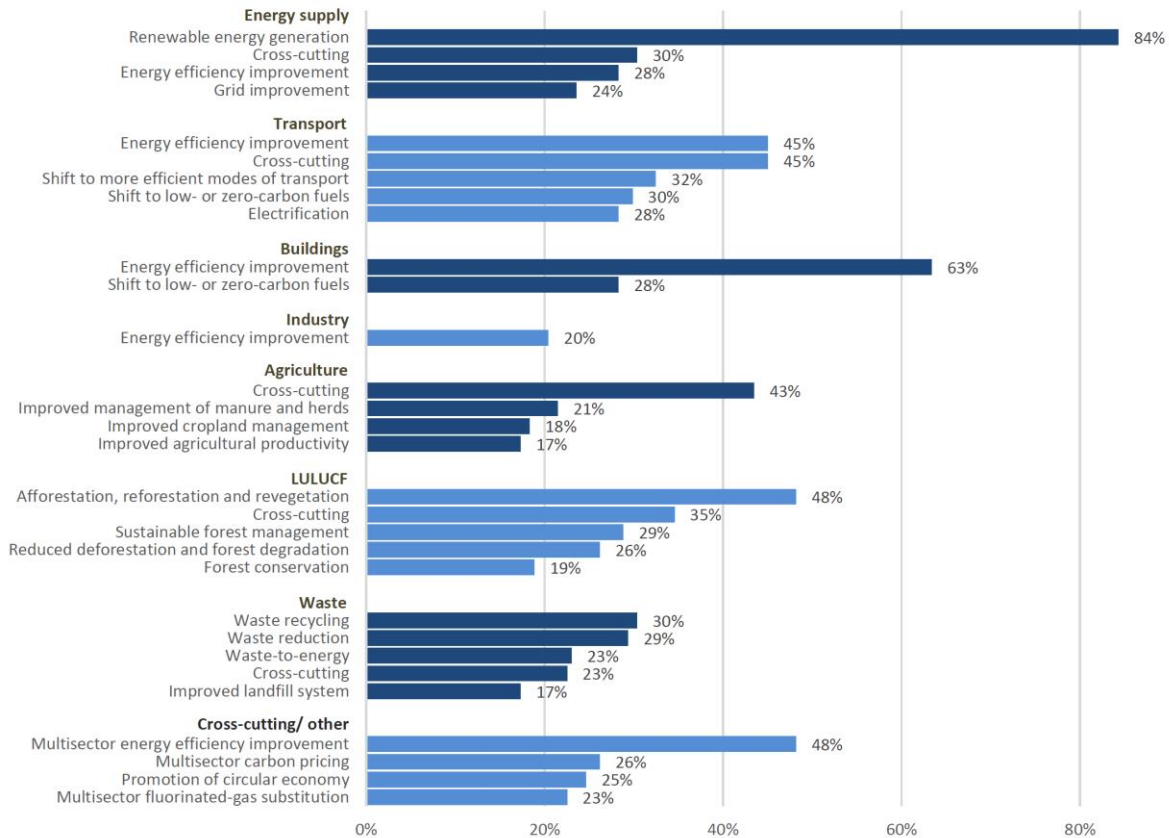
¹ Appliances are referred to distribution transformers, electric motors, lighting, refrigerators, and room air conditioners under the United for Efficiency Initiative supported by the UNEP.

² IEA (2021), Net Zero by 2050: A Roadmap for the Global Energy Sector, IEA, Paris.

³ IEA (2018), Energy Efficiency 2018, IEA, Paris.

found that energy efficiency improvement is one of the most frequently indicated mitigation options across many key economic sectors, a significant increase in comparison to the previous round of NDC submissions.

Figure 1. Mitigation options listed in the recent round of NDC submissions



(UNFCCC, 2021)⁴

⁴ UNFCCC (2021), Nationally Determined Contributions Under the Paris Agreement: Synthesis Report by the Secretariat, UNFCCC, Bonn.

Box 1. Improving energy efficiency in motor and engines in Mongolia

Mongolia is one of the three Asian countries under the International Climate Initiative (IKI) supported NDC Action Project implemented by UNEP and UNEP DTU Partnership (UDP). Under its recent NDC update (2020), energy efficiency in industry sector is prioritized as a high GHG reduction measure and there are three mitigation options in this regard being proposed by the government:

- Improve the efficiency of electric motors of factories;
- Install the energy efficient lighting;
- Improve the consumption management.

Half of all electrical energy is used by electric motor systems worldwide. Global electricity demand by electric motors and motor systems can be reduced by 20-30% by 2030 if adequate efficiency measures are deployed (U4E, 2017)⁵. A transition to energy efficient motor systems and lighting would drastically reduce Mongolia's electricity consumption. Meeting these targets can help the country achieve close to 7% of its mitigate related NDCs. It is one of the two sectors the government has identified as priority sector under the NDC Action Project. There are many solutions to address energy losses in motors and appliances, such as selecting the right minimum energy performance standards, covering a wide range of motor sizes and types under standard and regulation and implementing monitoring, verification and enforcement regime. These solutions would add to the initial price of the equipment, but given they yield energy savings that would lower utility bills. The end result for the purchaser would be a lower overall lifetime cost of the ownership of the motor system and more broadly a lower operational cost of the industry.

The increased recognition of the role played by energy efficiency in tackling climate agenda is encouraging. However, harvesting energy improvement potential requires bold actions from reforming policies, streamlining investments, changing consumer behaviours to utilizing and inventing new technologies, including digital technologies.

About the Virtual Event

As part of the Asia Regional NDC Clinic series led by UNEP and UDP under the NDC Action Project and in collaboration with the NDC Partnership, this 2-hour virtual session is designed to allow countries to pose questions, share concerns and challenges they've encountered, as well as experience they've obtained in implementing energy efficiency measures in meeting climate mitigation and clean energy

⁵ U4E (2017), Policy Guide Series: Accelerating the global adoption of energy-efficiency electric motors and motor systems.

goals. The aim of the event is to support country policymakers and practitioners with essential information and advise on technical, policy and financial considerations so they can effectively implement energy efficiency activities with a focus on the use of electric appliances. The survey prior to the event, the questions solicited from initial country engagement, and the interactive session design will stimulate dialogue and exchange. A set of questions to be dived into in this session include:

- Using electric appliances as an entry point, what **policy and regulatory tools** have proved their effectiveness in delivering the energy efficiency promises and how to have them scaled up and become mainstreamed? How to use **fiscal policy and public procurement** to provide adequate incentives to stimulate energy efficiency investments?
- What can we learn from existing **financing and business models**, such as energy service companies based financial model to drive up energy efficiency deployment? How to strengthen these models and continuously innovate so **new and additional financing** can be leveraged for energy efficiency investments? Is there a potential role for carbon market to leverage resources towards such investments?
- How to establish **effective collaboration arrangement** so policy makers, regulators, manufacturers, financiers and consumers can collectively work towards a common energy efficiency goal?

The outcome of the webinar will shape the technical activities being implemented in NDC Action project in Asia on energy efficiency. It will also be shared with countries beyond the region where common challenges are faced, solutions can be deployed and contributions towards implementing NDCs can be achieved.

Time Slot	Agenda Item	Speaker & role
1400-1410	Introduction	UNEP opening remarks
1410-1425	Theme setting presentation to provide an overview of the role of energy efficiency in meeting global 1.5 degrees and zoom into the analysis of energy efficiency potential in appliance use in Asia	Ms. Melanie Slade, Senior Programme Manager, International Energy Agency (IEA) (<i>invited</i>)
1425-1550	A moderated session with experts and country representatives to discuss a set of questions on accelerating energy efficiency deployment in the use of appliances from the perspective of policies, financing and multi-stakeholder collaboration. After each topic, audience from the virtual space will be given the opportunity to interact with experts and country speakers.	Moderator: Ms. Madeleine Edl, Policy Expert, United for Efficiency (U4E) initiative, UNEP
(1425-1450)	Q1. What policy and regulatory tools have proved their effectiveness in delivering the energy efficiency promises and how to have them scaled up and become mainstreamed? How to use fiscal policy and public procurement to provide adequate incentives to stimulate energy efficiency investments?	Expert's remark: Mr. Sommai Phon-Amnuaisuk, Vice President, International Institute for Energy Conservation (<i>invited</i>) Country response: Government of Mongolia
(1450-1530)	Q2. What can we learn from existing business models , such as energy service companies based financial model to drive up energy efficiency deployment? How to strengthen these models and continuously innovate so new and additional financing can be leveraged for energy efficiency investments? Is there a potential role for carbon market to leverage resources towards such investments?	Expert's remark: Global Green Growth Institute (GGGI) (<i>invited</i>) Country case studies: Governments of Maldives and India
(1530-1550)	Q3. How to establish effective collaboration arrangement so policy makers, regulators, manufacturers, financiers and consumers can collectively work towards a common energy efficiency goal?	Expert's remark: ASEAN Center for Energy Country response: Government of Vietnam
1550-1600	Closing remarks	Dr. Sudhir Sharma, NDC Action Regional Coordinator, UNEP Asia and the Pacific Office