

## **Agenda item 4.6(b)**

Paragraph 26 of the annotated agenda

# **TOOLXX: Determination of standardized baselines for energy efficiency measures in residential, commercial and institutional buildings**

**CDM EB 100**

Bangkok, Thailand, 27 to 31 August 2018



## Procedural background

---

- EB 85: mandated development of standards with a methodological framework for 2 specific project types
  - a) energy-efficient appliances for residential/household application (e.g. air conditioners, refrigerators); and
  - b) energy efficiency in buildings.
- MP 74: information note “Draft framework for the development of a tool or guidelines to determine standardized baselines (SBLs) for energy efficiency in residential, commercial and institutional buildings” published for a call for public inputs. No comments received;



## Purpose

---

- Facilitate the work of the DNAs to develop standardized baselines for projects for energy efficiency in residential, commercial or institutional buildings.
- To provide simplified, reliable and conservative approaches to determine the specific CO<sub>2</sub> emissions for whole buildings in tCO<sub>2</sub>/m<sup>2</sup> of floor area of building (reduce data burden where possible).



## Applicability

---

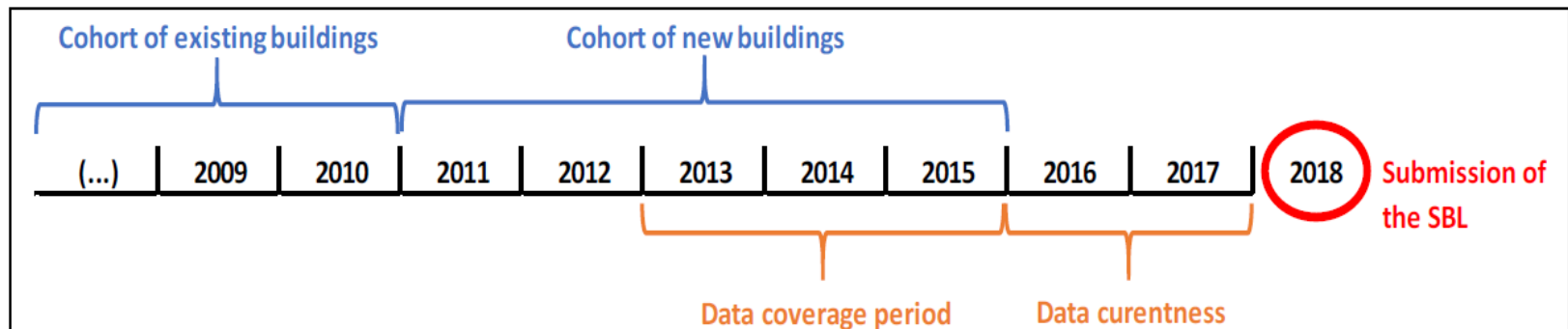
- Determination of specific CO<sub>2</sub> emissions of baseline buildings based on the consumption of:
  - a) electricity
  - b) fuel
  - c) chilled/hot water
- Does not cover emissions associated with replacement of refrigerants.
  
- Only applicable to determine the specific CO<sub>2</sub> emissions of baseline buildings based on:
  - a) Survey; or
  - b) Building energy codes or certification systems.



# Applicability

- Covers existing and new buildings
- Defines **data coverage period** and **data currentness**
  - a) derived from paragraph 19 of the standard “Determining coverage of data and validity of standardized baselines”

Figure 1. Example on how to determine the cohort of new and existing buildings and the allowed data currentness for a SBL submitted in 2018



## Determination of the specific CO<sub>2</sub> emissions in buildings

---

### **OPTION 1 – Based on benchmark using the top-20% best performing buildings**

- Survey conducted separately for new and for existing buildings through a sample of similar building units that:
  - Belong to the same building category; and
  - Are located in the same geographical scope
- Data from existing official surveys may be used if the requirements on data currentness is met
- Sample size should be the minimum value between building units in building unit category *i* or 20;
- Electricity, fuel and chilled/hot water consumption for new and existing buildings shall be collected following the requirements of data coverage period;



# Determination of the specific CO<sub>2</sub> emissions in buildings

---

## **OPTION 1 – Based on benchmark using the top-20% best performing buildings**

$$SE_{j,i,BL} = \frac{BE_{electricity,j,i,BL} + BE_{fuel,j,i,BL} + BE_{water,j,i,BL}}{GFA_{j,i,BL}}$$



## Determination of the specific CO<sub>2</sub> emissions in buildings

---

### **OPTION 2 – Based on Building energy codes or certification systems**

- Specific CO<sub>2</sub> emissions can be proposed for different building categories based on national, regional or international building energy codes or certification systems. **The proponents shall provide a basis of deriving the specific CO<sub>2</sub> emissions and its conservativeness**





## Impacts

---

The proposed tool with a methodological framework will broaden the portfolio of methodological standards in the area of energy demand (e.g. facilitating the work of the DNAs in the area of standardised baselines).



## Subsequent work and timelines

---

- The following approved CDM methodologies may require revision, in order to allow the application of this tool:
  - a) “AM0091: Energy efficiency technologies and fuel switching in new and existing buildings”;
  - b) “AMS-II.E: Energy efficiency and fuel switching measures for buildings”;
  - c) “AMS-II.Q: Energy efficiency and/or energy supply projects in commercial buildings”;
  - d) “AMS-III.AE: Energy efficiency and renewable energy measures in new residential buildings”.



## Recommendation to the Board

---

The MP recommends that the Board adopt this draft tool and provide mandate to revise the methodologies that will be used in conjunction with the tool.

