

Additional information to the proposed JCM methodology

“Energy Saving by Introduction of High Efficiency Firewood Cookstove to Replace Traditional Cookstove” on setting default value for reference emissions

1. The status of using woody biomass for cooking in Cambodia

The population of Cambodia is 16,718,971 based on projections of World Bank data in 2020¹. Only 20% of the people in Cambodia live in urban areas, and there aren't many large cities and 80% of the population residing in rural area has to depend heavily on forests for their basic need². Based on a document of World Bank, over 90 percent of energy used for cooking comes from wood, contributing to increased deforestation³. The use of wood for burning directly leads to reduced greenhouse gas emissions. Furthermore, it can be helpful to user's health.

2. Determination of the default value for emission reductions

The proposed project activity aims at reducing the use and demand of non-renewable biomass that would have been used to cook by distributing improved cookstove to replace the traditional one which is used by household in Cambodia. The traditional cookstoves three-stones are placed on the ground using firewood (not charcoal), or a cookstove with no improved combustion air supply or flue gas ventilation. Each baseline stoves might have different efficiencies. A research was conducted by A,H.M.R. Khan et al, traditional cookstoves are inefficient, harnessing only 5-15% of biomass energy depending on the depth of the stove and size of the flue gas exits⁴. Furthermore, in CDM tool 33 version 02.0, the default value for the efficiency of the traditional cookstove is 0.15⁵. Since the efficiency value of the reference stove is inversely proportional to the amount of reference emissions. Thus, in order to secure net emission reductions in the methodology, a default conservative value for the reference cookstove efficiency value is used at **0.15**.

¹ <https://data.worldbank.org/indicator/SP.POP.TOTL>

² <https://worldpopulationreview.com/countries/cambodia-population>

³

<https://documents1.worldbank.org/curated/en/570931468036882999/pdf/696390ESW0P1010ECHOLOGIES0Cambodia.pdf>

⁴ Khan A, et al. (1995) The Development of Improved Cooking Stove Adapted to the Conditions in Bangladesh (BCSIR, Bangladesh, and Eindhoven University of Technology, Eindhoven, The Netherlands.), final report of collaborative research project between IFRD; BCSIR, Bangladesh; and Eindhoven University of Technology, Eindhoven, The Netherlands <https://poverty-action.org/sites/default/files/publications/low-demand-nontraditional-cookstove-technologies.pdf>

⁵ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-33-v2.0.pdf>