

# Model Regulation Guidelines for Energy-Efficient Ceiling Fans

## U4E Guidelines Role, Approach, and Progress

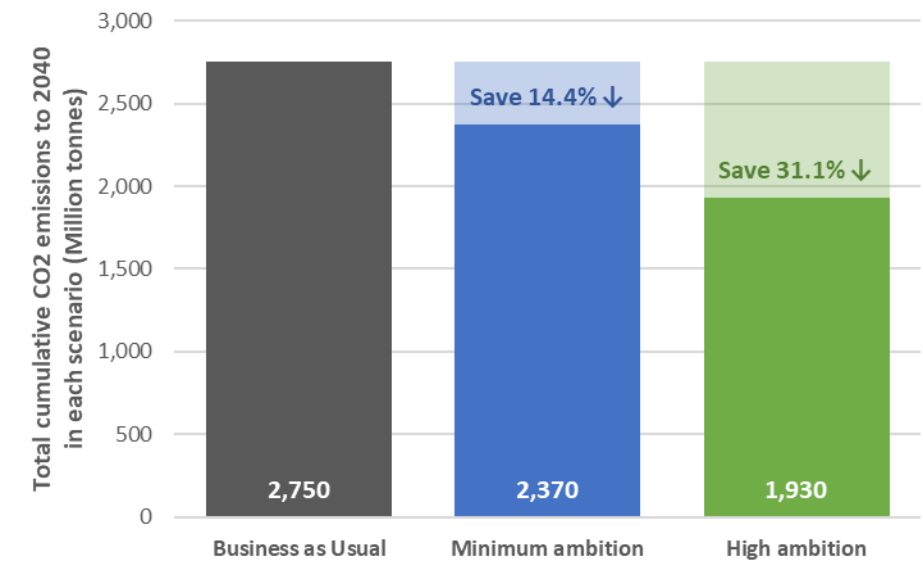
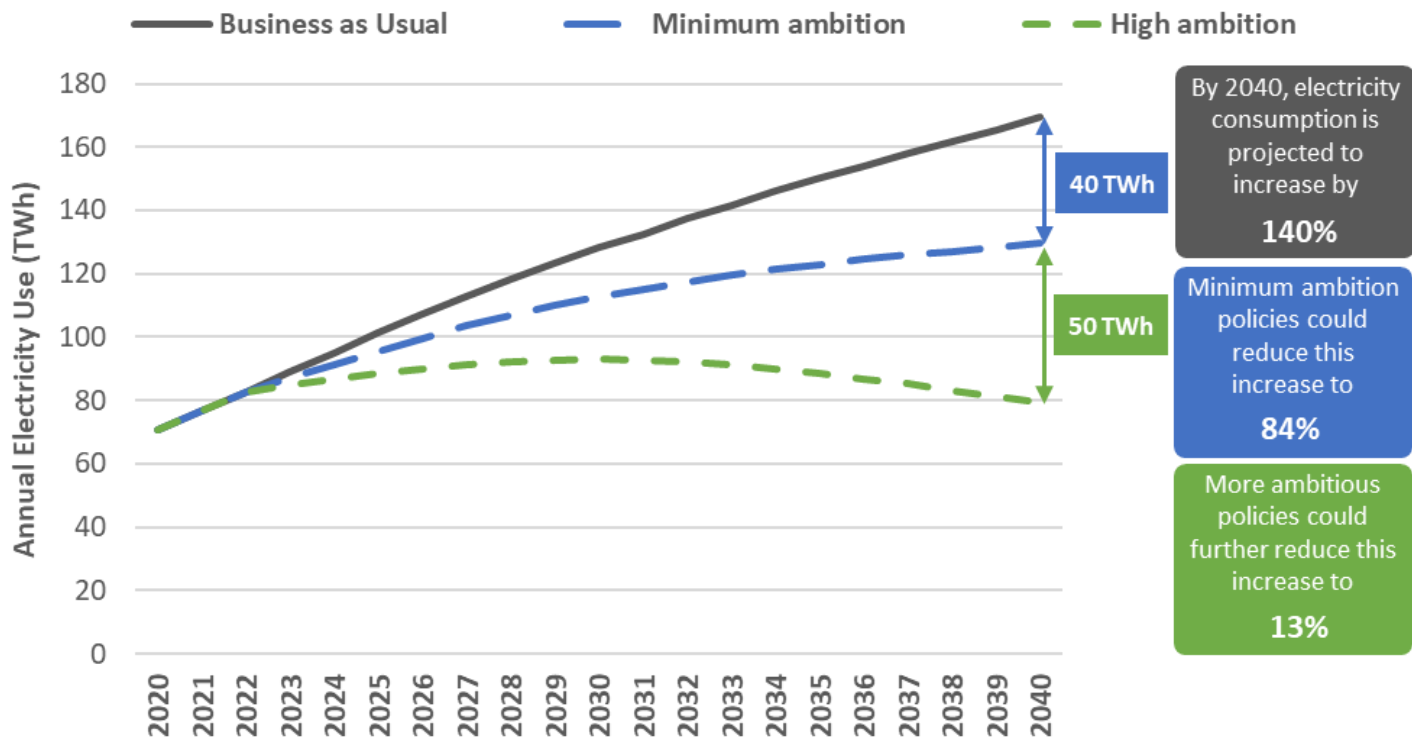
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**Marco Duran, UNEP United for Efficiency**

# U4E Country Savings Assessments for Ceiling Fans

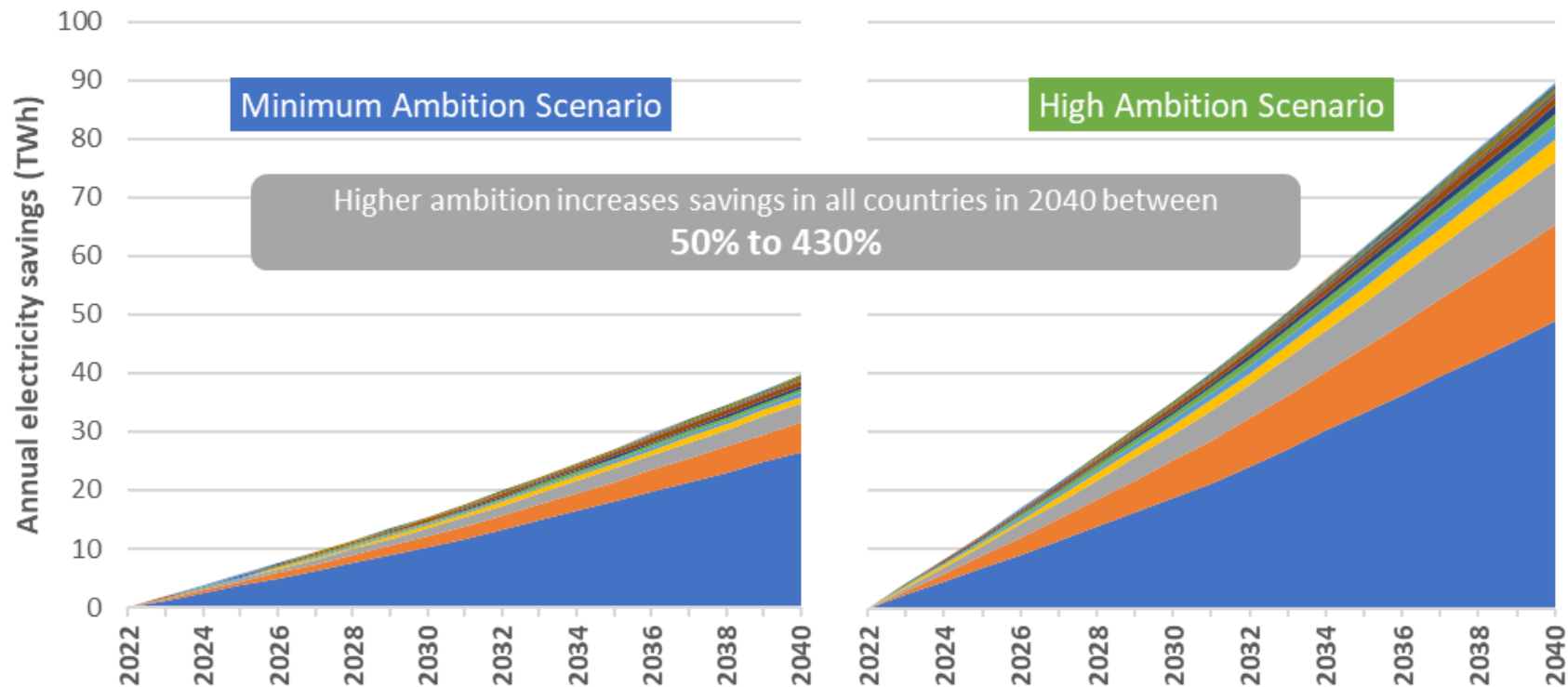
Upcoming Publication!

The Country Savings Assessments for the ceiling fans estimate the potential electricity savings for fourteen countries that could be achieved through the implementation of Minimum Energy Performance Standards (MEPS) in line with the U4E Model Regulation Guidelines



\*Bangladesh Brunei Darussalam Cambodia India Indonesia Lao People's Dem. Rep. Malaysia Pakistan Philippines Singapore Sri Lanka Sudan Thailand Viet Nam

# U4E Country Savings Assessments for Ceiling Fans



## Annual savings in 2040 (minimum ambition - high ambition)

- Brunei Darussalam (0.01-0.02 TWh)
- Lao People's Dem. Rep. (0.1-0.3 TWh)
- Thailand (0.1-0.3 TWh)
- Singapore (0.1-0.4 TWh)
- Sudan (0.5-0.8 TWh)
- Viet Nam (0.2-0.8 TWh)
- Cambodia (0.8-1.4 TWh)
- Malaysia (0.5-1.5 TWh)
- Sri Lanka (0.6-1.9 TWh)
- Indonesia (0.7-2.4 TWh)
- Philippines (1.2-3.9 TWh)
- Bangladesh (3.2-10.8 TWh)
- Pakistan (5.1-16.5 TWh)
- India (26.5-48.9 TWh)

The Country Savings Report for Ceiling Fans will be soon launched !!

<b>40</b>	<b>43</b>	<b>\$7.5</b>	<b>18</b>
TWh	MtCO <sub>2</sub> e	Billion in electricity bill savings	Power stations [500 MW each]

<b>90</b>	<b>92</b>	<b>\$16</b>	<b>41</b>
TWh	MtCO <sub>2</sub> e	Billion in electricity bill savings	Power stations [500 MW each]

Annual Savings in 2040

# U4E Model Regulation Guidelines

## Objective

Guidance to help **inform regulatory authorities and policy makers**

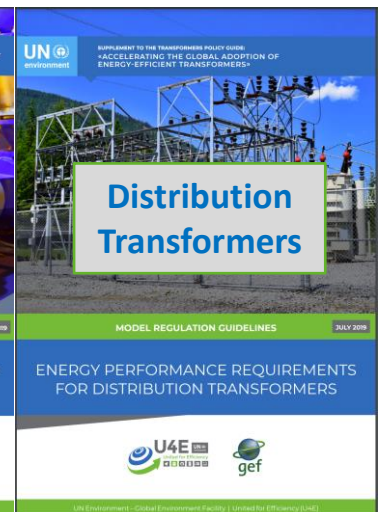
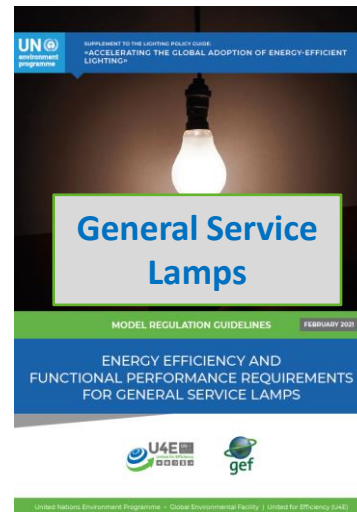
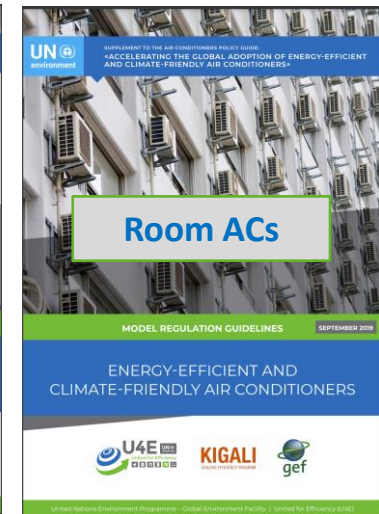
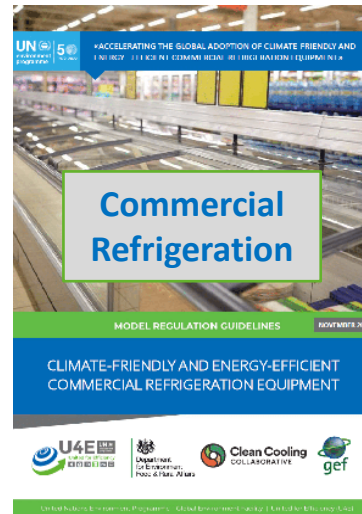
Sets a **minimum efficiency floor** to prohibit future sales of inefficient products from the market and sets higher **tiers** consistent with technology and market opportunities.

Over **60+ technical experts** (per product group) from around the world contributed data, analysis, expert reviews

Robust **refrigerant GWP ceiling** for viable, fast action on the Kigali Amendment

Dual focus on **efficiency** and **refrigerants** and widespread deployment

References **global technology and policy trends**



Various translations: English (all), Arabic, Spanish, Chinese, French, Portuguese

Available at: <https://united4efficiency.org/resources/model-regulation-guidelines/>

# Ceiling Fans Model Regulation Guidelines Content (2023)



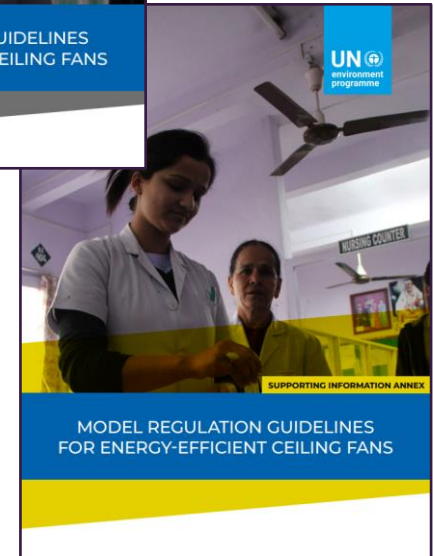
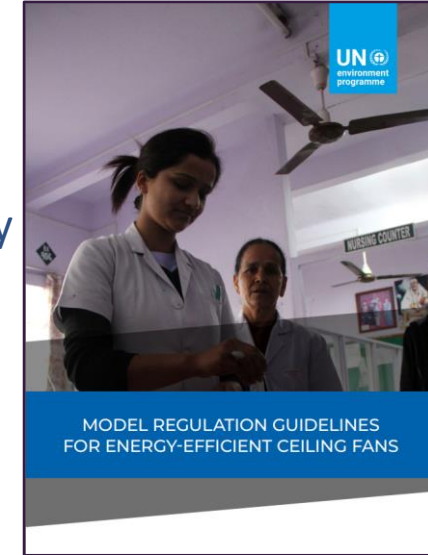
## Model Reg Guidelines

- Scope of covered products
- Terms and definitions
- Requirements:
  - Test methods
  - Energy performance
  - Safety and functional performance
  - Product information
- Entry into force, Conformity Assessment, Surveillance and Revision
- U4E Guidelines and test standards for ceiling fans are aligned with the IEC test procedure and refer to IEC 60879:2019 Comfort fans and regulators for household and similar purposes



## Supporting Documentation

- Overview of market and policies
- Energy performance and market availability
- Scope of the Guidelines
- Comparison of the proposed levels
- International MEPS and testing standards
- Emerging technologies, energy-efficient designs
- Costs and benefits



# Roles and Responsibilities

## UNEP

- Champion the development and promotion of the model regulation
- Convene U4E partners and other experts to gather data and insights
- Final arbiter on content and methodology, informed by the collective input

## LBNL

- Selected to review best practices, develop methodology, conduct analysis, draft text
- Refine the content based on input received at regular junctures

## U4E Partners and Affiliates

- Provide data and insights for consideration in the model regulation
- If desired, endorse the model regulation and help promote its use

## Additional Experts

(country officials, other environmental / energy efficiency organisations)

- Provide feedback on the model regulation once the initial draft is ready
- If desired, adopt the model regulation and encourage others to do so

# A Partnership Effort

Over 40+ technical experts (per product group) from around the world contributed data, analysis, expert reviews

MODEL QUALITY AND PERFORMANCE GUIDELINES FOR OFF-GRID REFRIGERATING APPLIANCES – SUPPORTING INFORMATION ANNEX

## ACKNOWLEDGEMENTS

These Model Quality and Performance Guidelines for Off-Grid Refrigerating Appliances were developed by the United Nations Environment Programme (UNEP) United for Efficiency (U4E) initiative, in collaboration with Lawrence Berkeley National Laboratory, with funding from the U.K. Department for Environment, Food and Rural Affairs and the Clean Cooling Collaborative.

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MODEL REGULATION GUIDELINES FOR ENERGY-EFFICIENT CEILING FANS

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# Development Timeline

Initial outreach to secure expert volunteers



Dec 2022



Jan 2023

Kick Off meeting to present basic background info, data request

Consultation Meeting Content Review to prepare drafts



May 2023

Drafts Updated & reviewed by more experts



June 2023

Model Guidelines and Supporting Info first drafts prepared and circulated



July 2023

Country Savings (Impact) Assessments *data gathering and model dev*



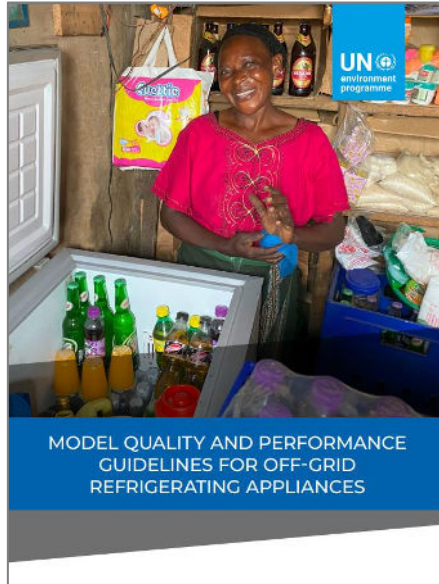
Oct 2023 and beyond

Launch at MOP35 - 1<sup>st</sup> EE workshop; promote at webinars & events capacity building workshops





# U4E Model Guidelines



U4E Model Regulation Guidelines for Room ACs and Heat Pumps (update of the original version)

U4E Model Regulation Guidelines for Commercial ACs / Water Heaters (TBC)

2023

2024

2025

## Way forward

Expanding the portfolios of MRG appliances to **heat pumps in 2024** and **potentially water heaters, commercial air conditioners in 2025** (and/or update or expand existing Model Regulation guidelines) and **beyond**.



**THANK YOU!**

