

An aerial photograph of a city skyline, likely Singapore, featuring numerous skyscrapers and a dense urban landscape. The sky is blue with scattered white clouds. A semi-transparent blue rectangular box is overlaid on the middle of the image, containing white text. Below the box, a lush green park with a winding path and a body of water is visible.

**EE S&L for electric fans in China and its
leverage for accelerating EE standard
harmonization in Southeast Asia**

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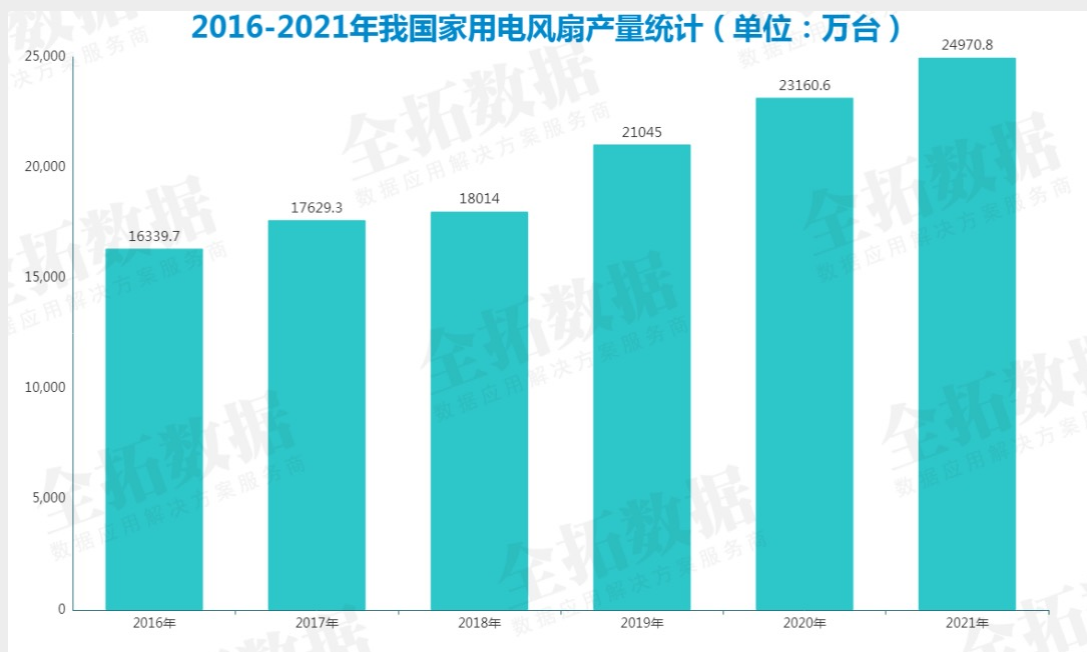
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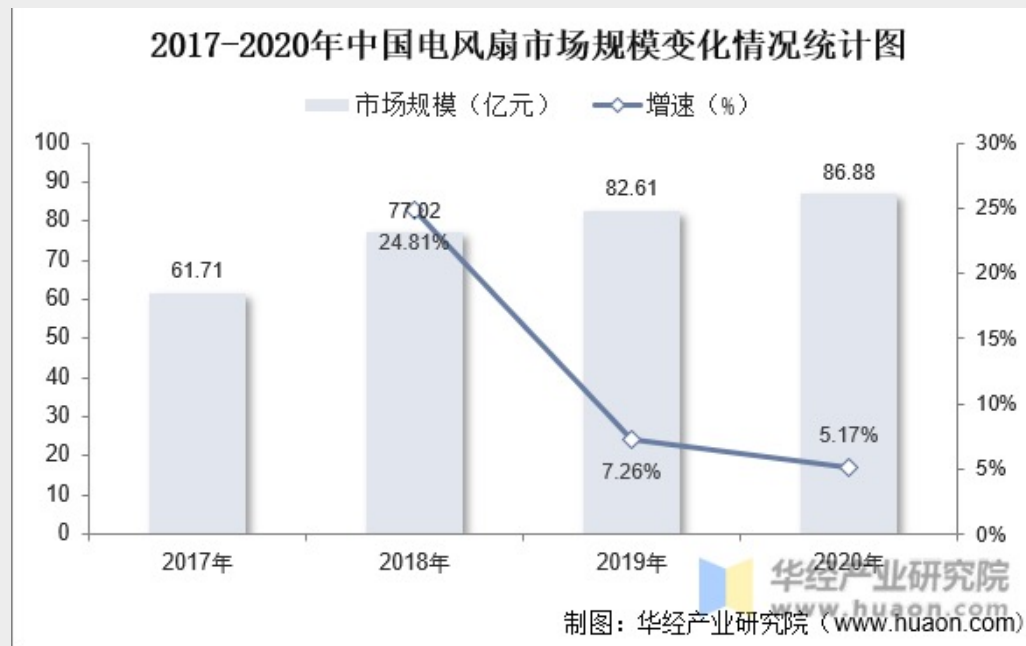


1. Domestic market of electric fans

- Production of household electric fans is on the rise between 2016 and 2021, and reported around 250 million units in 2021 in China (source: Quantuo data).
- In 2021, around 47 million household fans were sold in China, floor-standing fan is a key product in the electric fan market, achieving nearly 40%, ceiling fan accounts for roughly 5.5%, and the ceiling fan production is mostly based on order from engineering projects.



Production of household electric fans in China (2016 to 2021) (in 10,000 units)



Market size of electric fans in China (2017 to 2020) (in 100 million RMB)



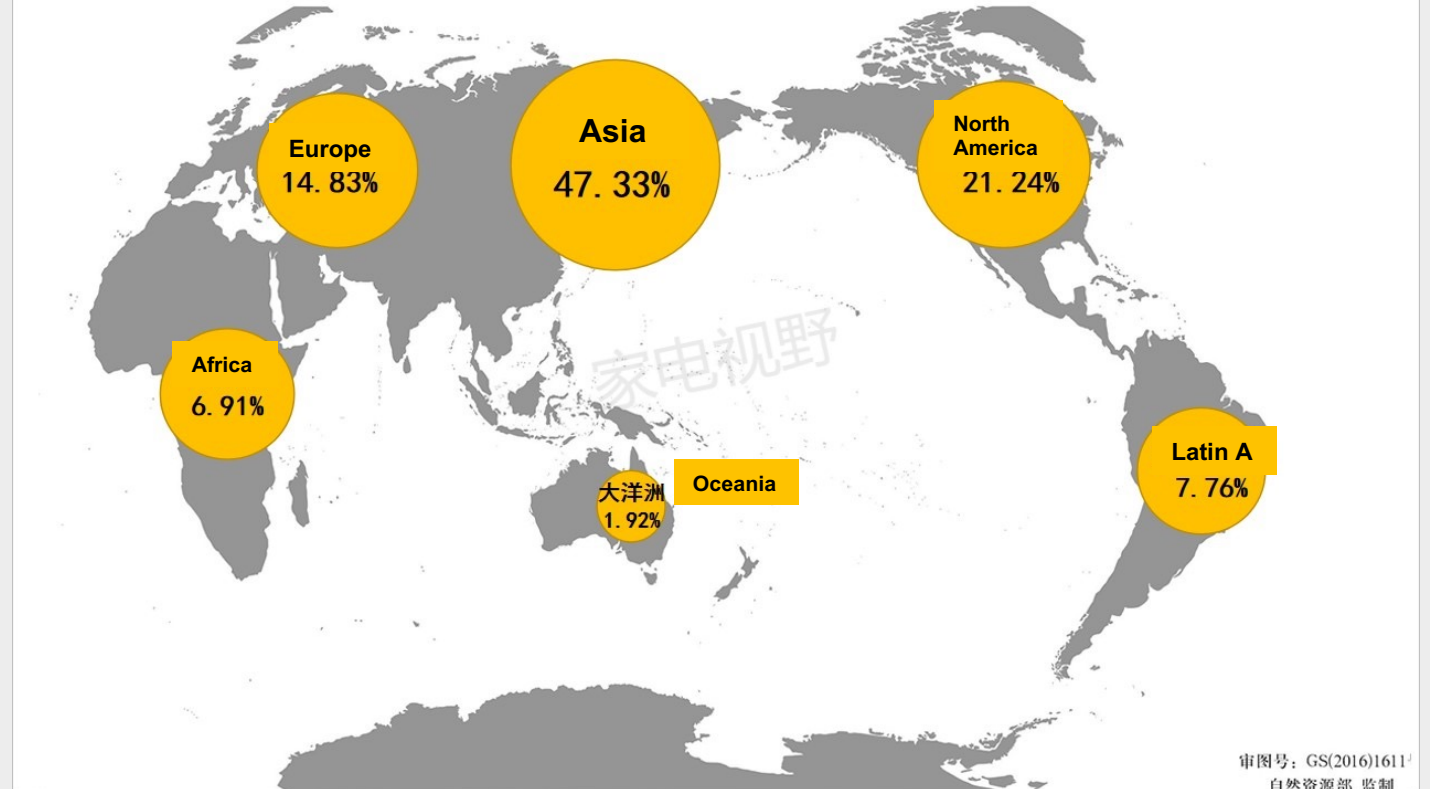
2. Export market of electric fans

- Total export of China in 2023:
 - 430 million electric fans,
 - among which 207 million are household electric fans incl. 82 million standing fans, 68 million desk fans, and 46 million ceiling fans.

- Export market:

Asia is China's largest export market, making up nearly half of its total exported units, followed by North America and Europe. Major export destination countries and regions include: *the Philippines, Vietnam, Malaysia, Indonesia, India, Japan, South Korea, US, UK, etc.*

2023年1-10月我国电风扇出口六大洲数量占比图



Proportion of China's export of electric fans to the six continents in 2023 (Jan. to Oct.)

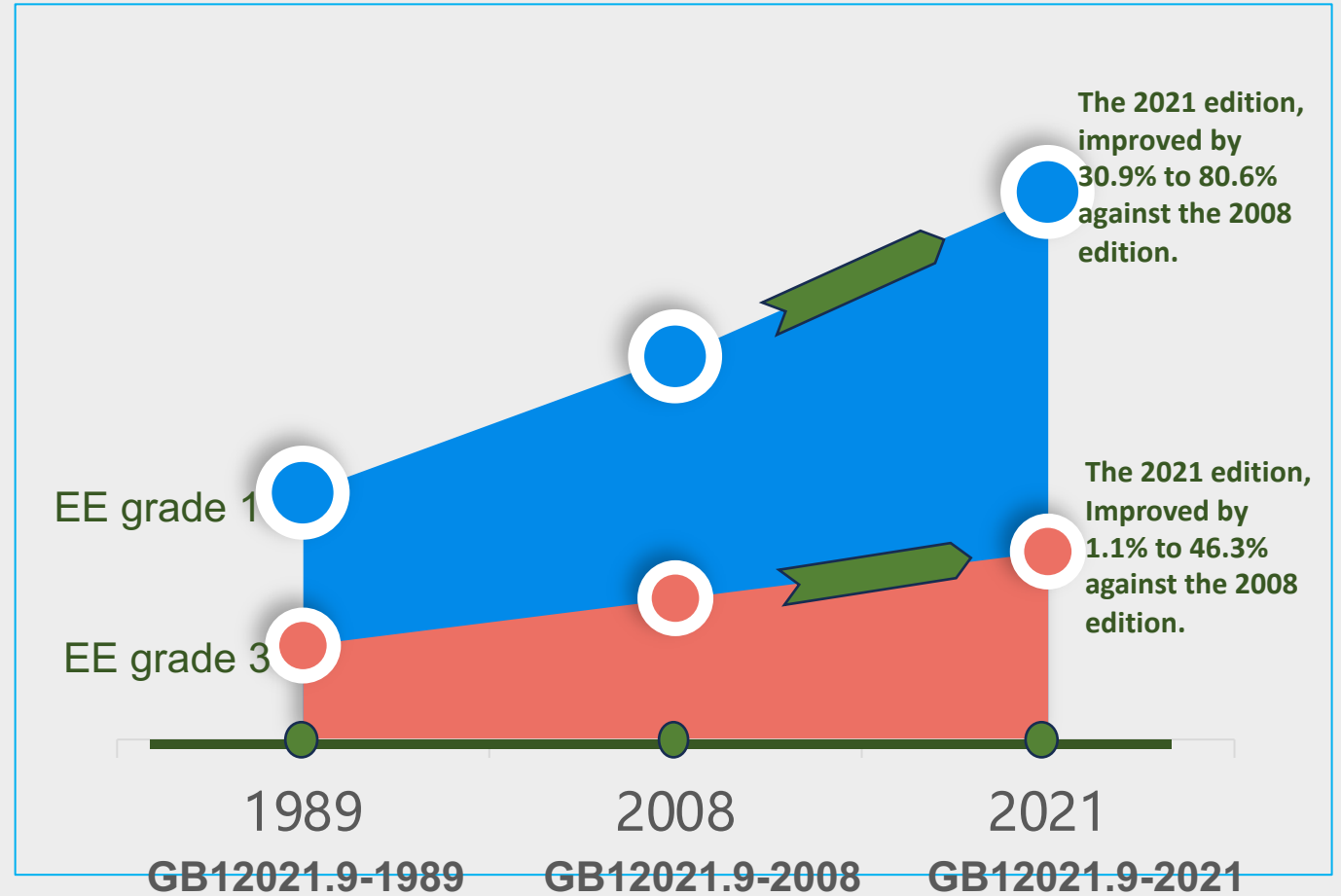


3. MEPS development in China

- ◆ **GB12021.9-1989:** *The limited value of energy consumption of electric fans and its measuring method, was initially published in 1989*
- ◆ **GB 12021.9-2008:** *Minimum allowable values of energy efficiency and energy efficiency grades for AC electric fans, was the first revision which was released in 2008*
- ◆ **GB 12021.9-2021:** *Minimum allowable values of energy efficiency and energy efficiency grades for electric fans, was the second revision which as released in 2021*

Compared with the 2008 edition, the 2021 edition has set enhanced energy efficiency values for all types of products, under that upgraded edition:

- *Energy efficiency grade 1, which has been improved by 30.9% to 80.6%, boasting a robust increase in energy efficiency;*
- *Energy efficiency grade 3, which is the entry level, has also been improved by 1.1% to 46.3%.*





3. MEPS development in China

Comparison of electric fan MEPS of China with that of U4E Modul Regulation --- ceiling fan component

The entry level of energy efficiency of ceiling fans (service value) under U4E Model Regulation is slightly higher than that under China's MEPS.

type of electric fan	diameter of fan blade (mm)	EE grade 1 (China)	EE grade 3 / entry level (China)	EE entry level (U4E)
Ceiling fan	900	3.95	2.78	3.1
	900 < X ≤ 1050	4.4	2.83	3.1
	1050 < X ≤ 1200	4.52	3.00	3.1
	1200 < X ≤ 1400	4.75	3.25	4.1
	1400 < X ≤ 1500	4.98	3.46	4.1
	1500 < X ≤ 1800	5.11	3.58	4.3

Testing method of the ceiling fan under the Model Regulation and that under China's MEPS is different.

Testing method:

- China's MEPS: refer to GB/T 13380-2018, consistent with the airflow testing method in IEC 60879:1986, however it has difference with IEC 60879:2019 in that the testing equipment, testing procedure and testing method are consistent but the airflow calculation has discrepancy.
- U4E Model Regulation: based on IEC 60879:2019



4. Energy label implementation in China

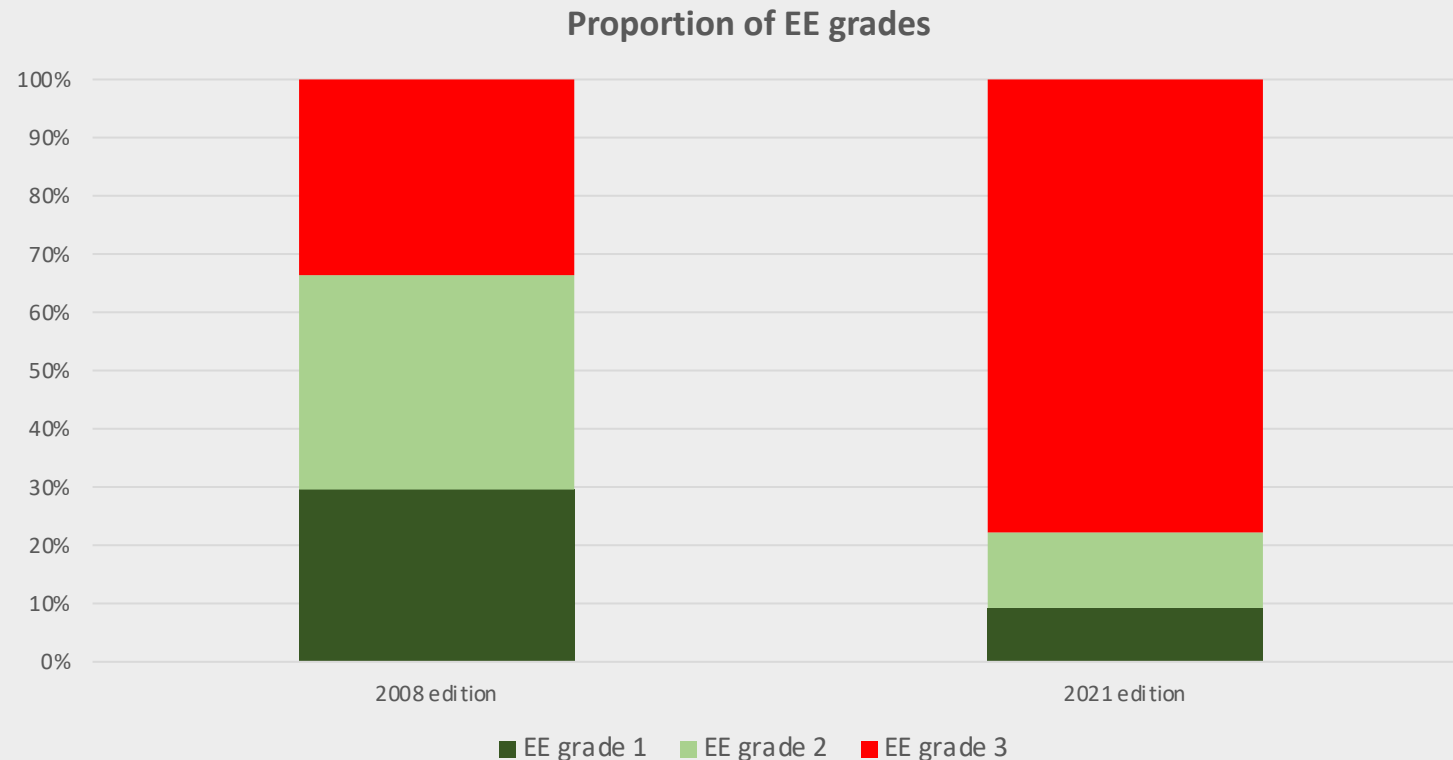
- ◆ As of 1st November 2022, the mandatory GB 12021.9-2021 *Minimum allowable values of energy efficiency and energy efficiency grades for electric fans*, and the new edition of *Implementation Rule of Energy Label of Electric Fans*, become effective.





4. Energy label implementation in China

- Before the implementation of the latest MEPS, electric fan products registered as energy efficiency grade 1 and grade 2 accounted for nearly 70% of the total;
- After the implementation of the new MEPS in late 2022, most grade 2 and grade 3 products described in the old MEPS have been phased out. Currently, electric fan products registered as grade 1 and grade 2 under the new MEPS is around 22%.
- Ceiling fans at energy efficiency grade 1 make up over half of the total ceiling fan products.





5. MEPS implementation in ASEAN Region

Current status of MEPS for fans

Country	Blade Diameter (mm)	Service Value (m ³ /min/W)	Status	Year
Brunei Darussalam				
Cambodia				
Indonesia	150 – 600 (DF)	0.6 – 1.0	Mandatory	2021
Lao PDR				
Malaysia	254 – 406 (DF) No limits (CF)	1.01 – 1.07 2.58 – 2.65	Mandatory	2013
Myanmar				
Philippines				
Singapore				
Thailand	400 (DF)	1.3	Voluntary	
Viet Nam	230 – 599 (DF) BD < 1200 (CF) BD > 1400 (CF)	0.64 – 1.13 2.4 2.5	Mandatory	2015

Source: CLASP and IIEC 2020 (unpublished), Technical Note: Electric Comfort Fans in the Philippines – A report on Residential Electric Fans Technologies and Market Informing Policy Development for Electric Comfort Fans; Indonesia, Ministry of Energy and Mineral Resources (2021), Minimum Energy Performance Standards and Energy Efficiency Labels for Fans, Decision of the Minister of Energy and Mineral Resources No.114.K/EK.07/DJE/2021

Notes: DF = Desk fans, CF = Ceiling fans.

In the ASEAN region:

- Only 3 countries have MEPS, only Malaysia and Viet Name have MEPS for ceiling fans;
- In 2023, the Philippines released implementing guidelines for energy labeling program for electric fans, and adopted IEC 60879:2019, but still no MEPS;
- Thailand introduced the voluntary ministerial regulations prescribing Highly Efficiency Electric Fans - Ceiling and Orbital Types (B.E. 2558) in 2015, which covers ceiling electric fans with 1,200 mm and 1,400 mm, no MEPS;
- **Countries without MEPS and energy labeling programs are facing big challenges monitoring the EE compliance of their market.**



5. Energy label implementation in Southeast Asia



According to [an IIEC's study](#), up to 30% of appliance shops in Lao PDR reported that they directly imported appliances from China and Thailand. 80% of household respondents recall Thai No.5 energy labels on refrigerators, followed by ACs (68%), and **fans (38%)**. Very few household respondents recall household appliances in Lao PDR with Chinese energy labels.





6. Thoughts on EE S&L harmonization in Southeast Asia

How the U4E Model Guidelines could be leveraged to support setting and strengthening Southeast Asia's MEPS for ceiling fans?

- Improving the energy efficiency of ceiling fans in China, and providing more energy efficient fans to importing countries and regions;
- Enhancing international cooperation in the harmonization of MEPS and the testing methods, and in countries without MEPS, harmonizing energy labels is crucial in facilitating informed purchasing decisions for consumers;
- Strengthening bilateral and multilateral dialogues on setting MEPS for importing countries and assisting local testing capacity building under the China-ASEAN framework;
- Promoting mutual recognition of certification and labelling schemes;
- Intensifying awareness raising among stakeholders, including policy makers, ceiling fan producers, end-users, facility builders and owners, etc.

6. Thoughts on EE S&L harmonization in Southeast Asia

National Actions



International Collaborations





THANK YOU

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