# Cooling a warming planet

Clean Cooling COLLABORATIVE

# The vicious cooling cycle

More climate change

Higher temperatures

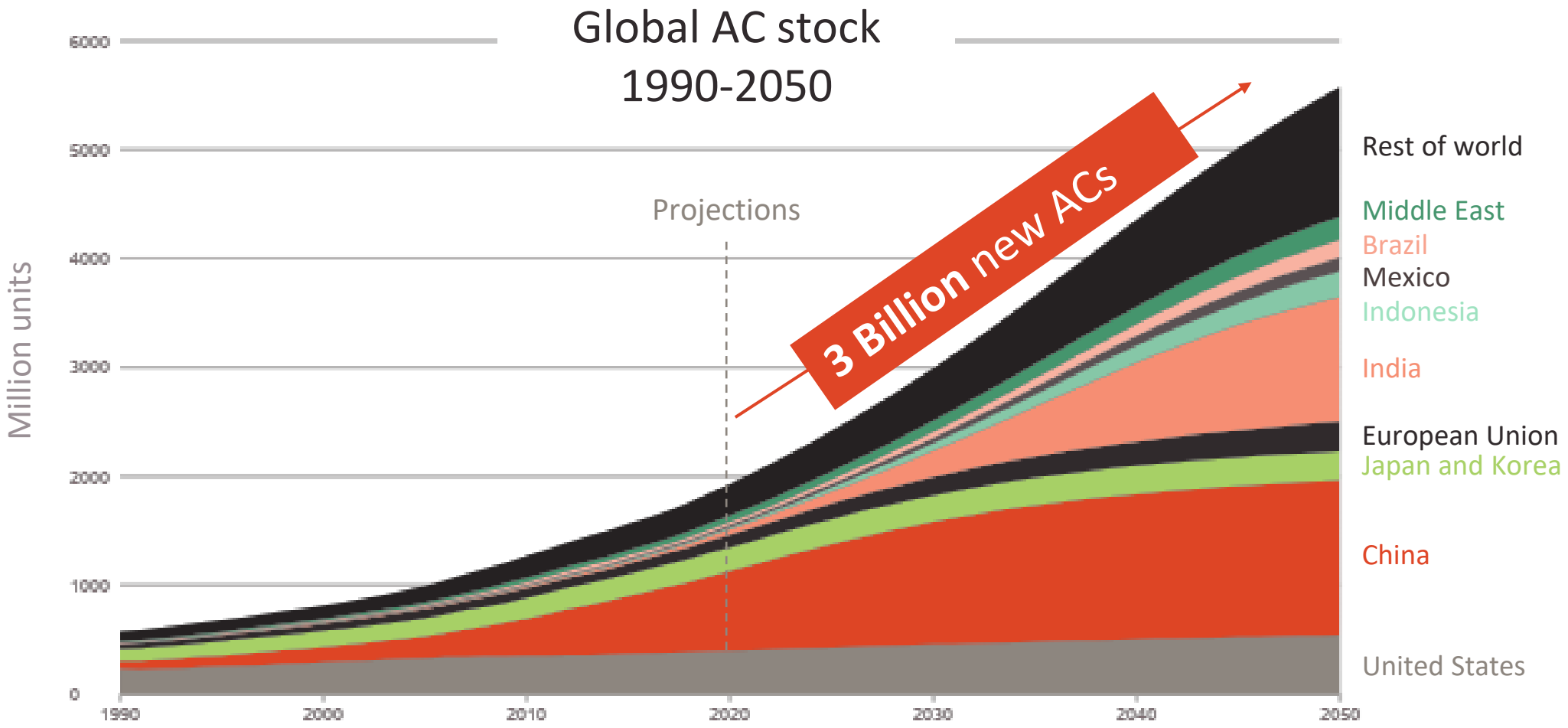
More ACs & refrigerators needed

More GHG emissions

Power plants

HFCs from leaking refrigerants

# Global demand for cooling is expected to more than triple by 2050



STRATEGY

# The Clean Cooling Collaborative

Advancing a winning strategy to cool a warming planet

**Focal grantmaking geographies:** India, Southeast Asia, China, United States

## Raise

the profile of and resources for efficient, climate-friendly cooling

## Avoid/ Reduce

the need for mechanical cooling that contributes to rising GHGs

## Optimize/ Improve

mechanical cooling to being more efficient, climate- friendly, and grid- connected

## Increase Access

to efficient, climate-friendly cooling, especially in regions where demand is high

# Clean Cooling Collaborative's Work in SE Asia

- Helped fund U4E model regulations for room ACs and the ASEAN Roadmap; providing support for 4 countries initially (Singapore, Malaysia, Vietnam and Philippines) for MEPS updates
- Support UNEP Cool Coalition and the  Global Cooling Pledge
- Funding work to scale cool roofs in Indonesia
- HFC Phasedown and transition to new, cleaner refrigerants

**➔ Note, $100 million available via Montreal Protocol's multi-lateral fund for factory conversions – lower GWP refrigerants and increased energy efficiency**

# ASEAN Roadmap for Raising RAC Efficiency

- MEPS set “efficiency floor”. Prevents local countries from being the dumping ground for products that can’t be sold elsewhere
- Tier 2 level gets to inverter level efficiency. That’s the goal!
- China updated its MEPS a few years ago and has essentially transformed its domestic RAC market to inverters
- Singapore has recently updated its MEPS to the Tier 2 level.

# SO MANY BENEFITS

- ✓ Customer utility bill savings
- ✓ Take stress off the grid:
  - ❑ Fewer power outages
  - ❑ Cheaper, faster transition to reliable clean energy grid
- ✓ Fewer emissions of GHG gases and conventional pollutants from fossil based power plants
- ✓ Better air quality ➔ fewer illnesses and mortalities

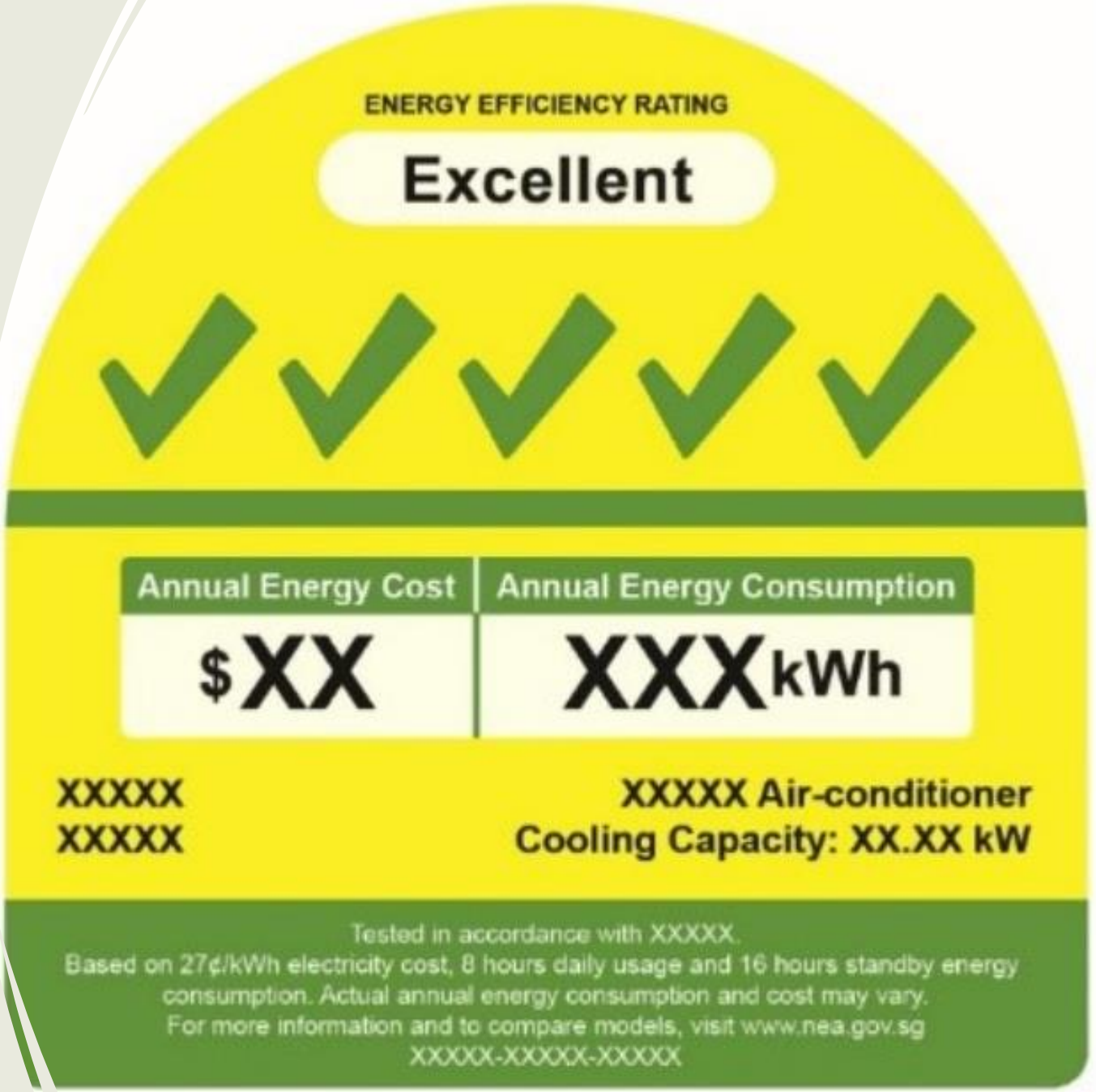
# Inverter room AC sales share by country

- Inverter share in SE Asia has doubled from 32% in 2017 ➔ 61% in 2022
- Sales share of inverter room ACs varies dramatically by country

| | 2017 | 2022 |
|---|---|---|
| **India** | 30% | 70% |
| **SE Asia** | 32% | 61% |
| Indonesia | 10% | 12% |
| Thailand | 27% | 70% |
| Vietnam | 53% | 75% |
| Phillippines | 43% | 58% |
| Malaysia | 0% | 30% |
| Singapore | 95% | 96% |
| **USA** | 83% | 100% |
| **Europe** | 74% | 91% |
| **Nigeria** | 10% | 20% |
| **Brazil** | 22% | 55% |
| **Japan** | 100% | 100% |
| **Saudi Arabia** | 7% | 37% |
| **UAE** | 12% | 20% |

# Updating Energy Use Labels Is Also Important

- *Help interested consumers identify the even more efficient/money saving models when shopping*
- ***Green procurement*** *- Can suggest/require governments and institutional buyers to only purchase models that have 4 or 5 ticks, (or in other countries 5 stars).*
- ***Rebates/incentives*** *– can tie to the most efficient models*



Optimize/improve

# The World Needs A Better Air Conditioner


## 5X AC: the game changer

- 5X = air conditioners with **five times lower climate impact**
- Global Cooling Prize proved it's possible

# The potential global impacts of moving the market to 5X is huge

Optimize/improve

**Prevent up to 68 gigatons of cumulative $CO_2e$ emissions through 2050 –** more than one years worth of total global emissions

**Save 5,400 TWh/year of electricity –** equal to all the electricity consumed today by U.S., Japan, and Germany combined

Optimize/ improve

# Ceiling fans

- New brushless direct current motor (BLDC) fans use 50% less energy
- India set 10 million super-efficient ceiling fan deployment target and looking to lower purchase price and transform the market

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