CLASP Tools for Global MEPS Analysis

Steven Zeng, Director of China Program, CLASP

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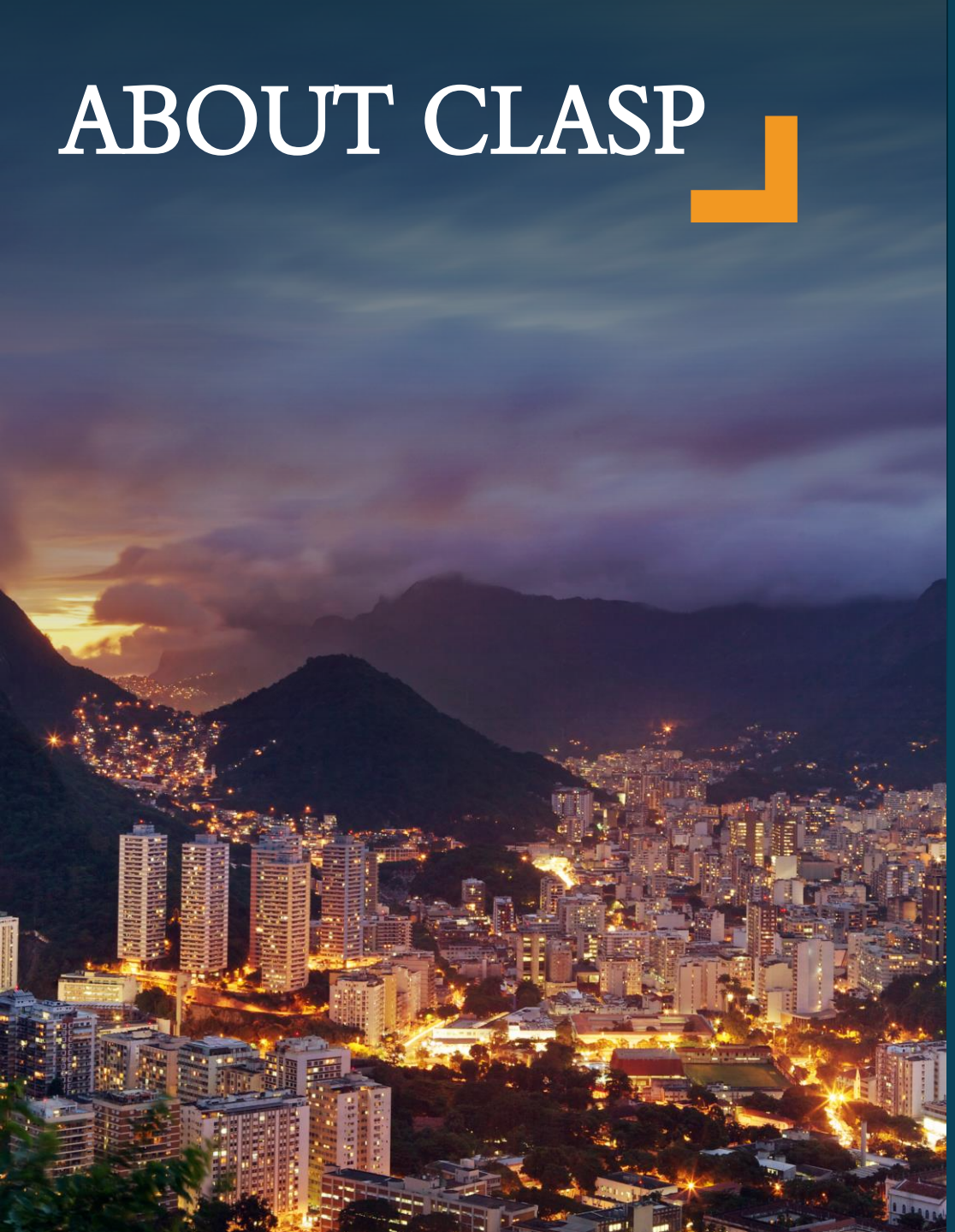
Efficient Appliances for People & the Planet



ABOUT CLASP

CLASP is the leading global authority on appliances' role in fighting climate change and promoting sustainable development.

CLASP provides sound recommendations, innovative tools, and groundbreaking research to advance appliance policy, technology, financing, and markets. It focuses on the appliances most critical to reducing emissions and improving lives and livelihoods.

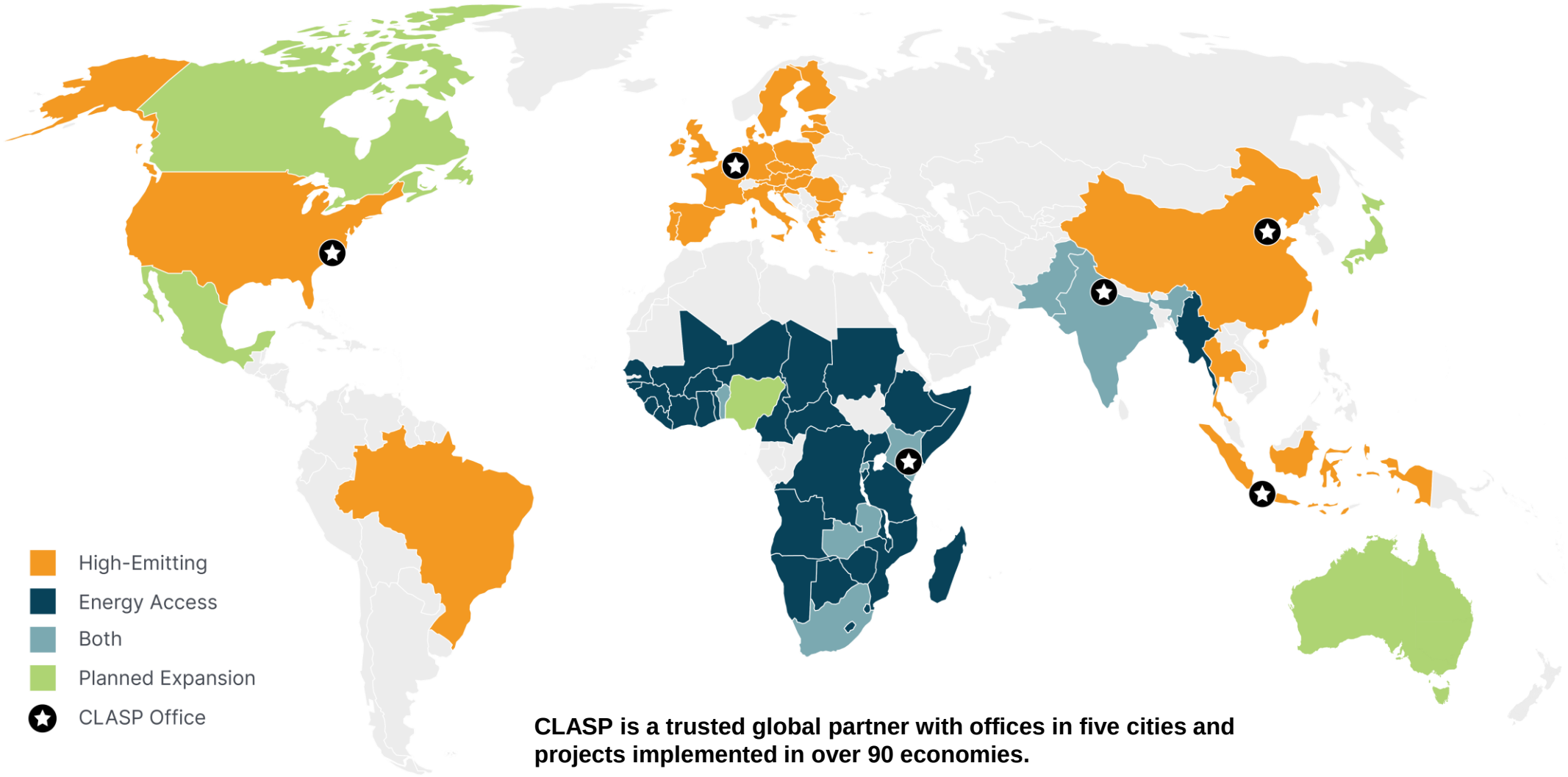
Areas of Expertise

- Energy and quality standards
- Labeling and buyer education
- Awards and product recognition
- Compliance, testing, and quality assurance

Where We Work

- Global offices: China, Europe, Indonesia, India, Kenya, Brazil and the United States
- Projects implemented in over 90 economies

Where we work

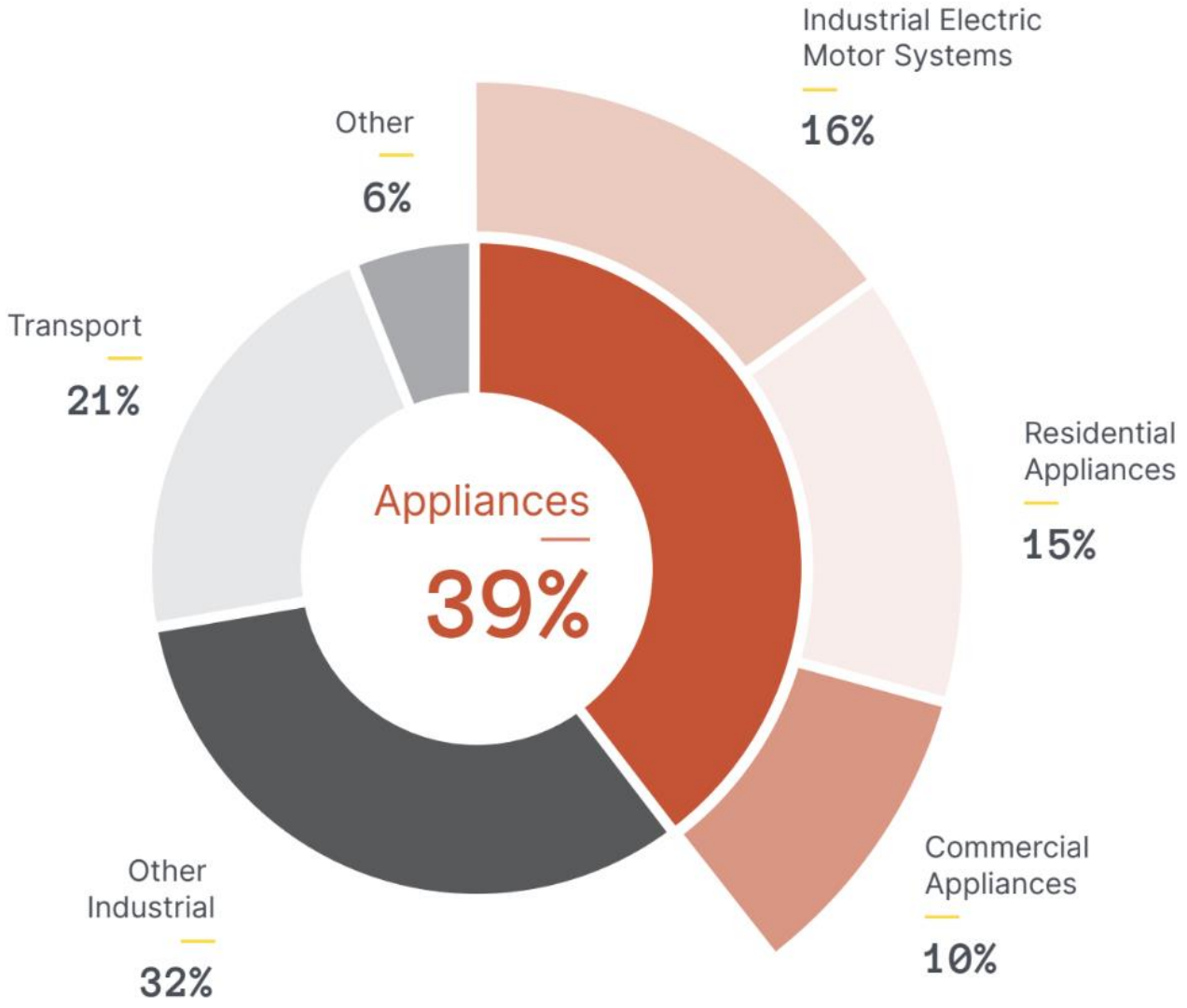


CLASP is a trusted global partner with offices in five cities and projects implemented in over 90 economies.

Agenda

- Appliance policies globally
- Challenges during MEPS design or implementation
- Measuring impact: CLASP tools
- Q&A

Appliances have a major impact on our climate



Appliances are responsible for 39.3% of energy-related CO_2 emissions.

These emissions are equal to roughly the total CO_2 emissions from China, Europe, and Brazil.

Appliance efficiency programs cut electricity consumption by ~15%

Appliance energy efficiency policies are one of the most cost-effective solutions to reduce emissions and should be a cornerstone in any climate mitigation strategy.

There are **86** economies with mandatory MEPS and labels for appliances, while over **120** economies employ appliance standards and labeling programs in some capacity.

China has 70+ appliance efficiency policies.

European Union efficiency policies cover 31 appliances.

India has efficiency policies for 34 appliances.

United States efficiency policies cover 60+ appliances.

CLASP. “Net Zero Heroes: Scaling Efficient Appliances for Climate Change Mitigation, Adaptation & Resilience.” CLASP, 2023.

10 top emitting economies in the appliance sector

Table 1. Appliance Energy Efficiency Potential – Based on Business-as-usual CO_2 Emissions		
Priority	**Economies**	**Megatons (Mt) CO_2 2025-2040**
1	China	39,564
2	EU-27	29,265
3	India	26,754
4	USA	20,260
5	Japan	10,306
6	The Russian Federation	5,245
7	Indonesia	4,486
8	Canada	4,110
9	United Kingdom	4,101
10	Republic of Korea	3,668

Potent products

- Several products dominate energy use, emissions, and other impacts
- Addressing them in one place can create spillovers elsewhere:
  - Global conventions and pledges
  - Targeting major manufacturers
  - Product recognition

Industrial motors: 69% of industrial electricity

Cooling: 5% of buildings energy but growing

Heating: 32% of buildings energy; electrification will reduce methane

Lighting: 6% of buildings energy; mercury reduction

Cooking: health benefits from indoor air quality

Challenges during MEPS design or implementation

Data gaps and technical capacity – Limited access to reliable market, performance, and cost data for appliances and equipment; insufficient local testing and analytical capacity to support standard setting.

Industry resistance and stakeholder alignment – Manufacturers may resist stricter standards due to perceived cost impacts or competitiveness concerns; balancing diverse interests takes time.

Institutional coordination – Fragmented responsibilities among ministries, standards bodies, and enforcement agencies can slow decision-making and weaken implementation.

Testing and compliance infrastructure – Inadequate accredited laboratories, inconsistent testing protocols, and limited market surveillance reduce policy credibility and impact.

Challenges during MEPS design or implementation

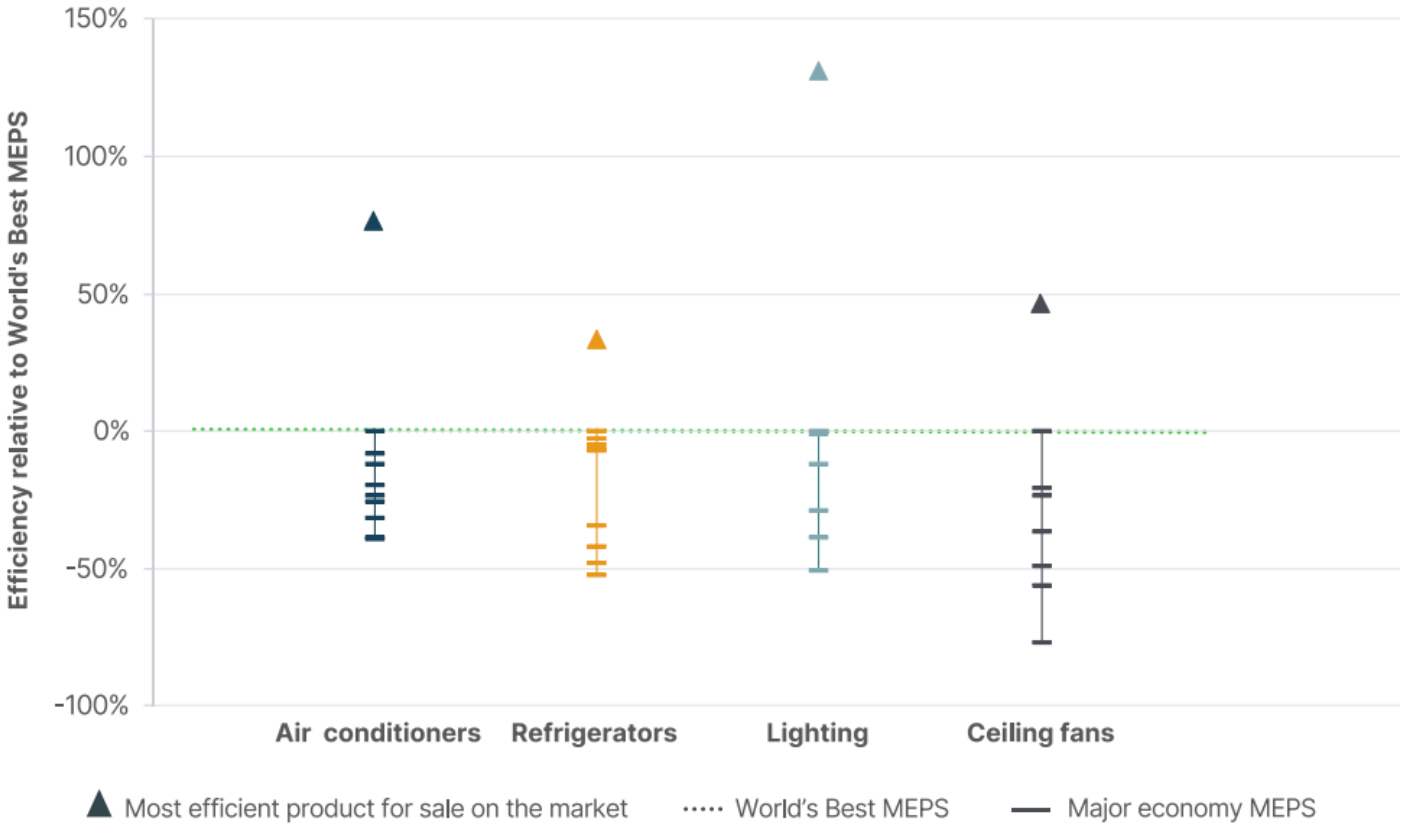
Timely updates and revision cycles – Standards often lag behind technology advances, missing opportunities for higher energy savings and locking in inefficiency.

Market enforcement and monitoring – Weak enforcement mechanisms and limited resources for inspections or product sampling undermine compliance.

Consumer awareness and labeling linkage – Low awareness of energy labels and limited use of MEPS in procurement or incentive programs reduce demand-side pull.

International harmonization and trade pressures – Differences in test methods and efficiency metrics create barriers for regional trade and complicate alignment with global best practices.

International comparison of efficiency levels for four appliances
Minimum Energy Performance Standards (MEPS) and Best Available Technology (BAT)



- Most economies MEPS fall short of the world's most stringent MEPS
- Even best-in-class MEPS remain well below the efficiency levels of the best available technologies
- This gap represents an opportunity to further reduce energy use and emissions

Source: CLASP *World's Best MEPS* study

clasp.ngo/tools

Net Zero Appliances NDC Toolkit

Incorporate climate-friendly targets for appliance efficiency into NDCs

World's Best MEPS

Comparison of world-leading appliance efficiency standards

Mepsy

Model the impacts of energy and carbon reduction policies

CPRC

Searchable database of 1500+ quality, water, and efficiency policies

VeraSol

Solar-powered and off-grid appliance database

Compliance Toolkit

Resources to help design effective compliance strategies

Computer Testing Tool

Measure the power and performance of a personal computer

What is Mepsy?

Mepsy

The Appliance & Equipment Climate Impact Calculator Tool

The ten appliances included in Mepsy encompass

75% of global residential and commercial energy use

50% of global electricity use by industry

Space Heating

Air Conditioning

Refrigerator-Freezers

Electric Motors

Ceiling & Portable Fans

Televisions

Lighting

Residential Hot Water Heaters

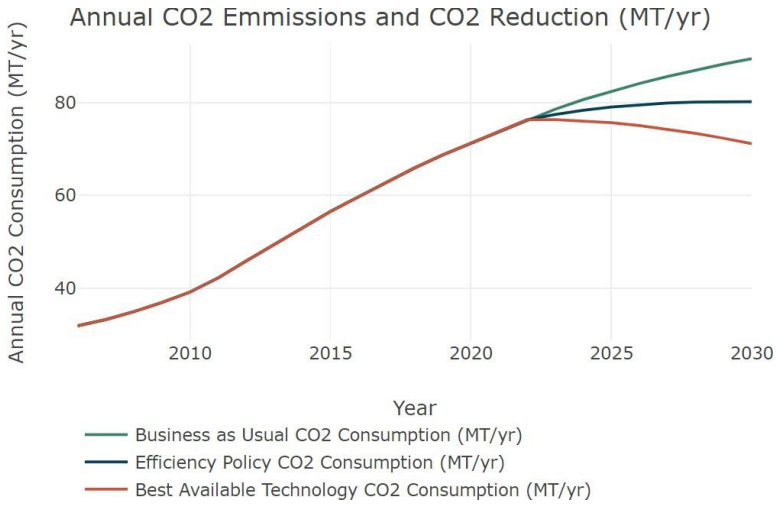
Distribution Transformers

Beverage Cooler

What makes Mepsy unique?

- Visuals intended to support policymaking
- Ability to create custom outputs by downloading data:

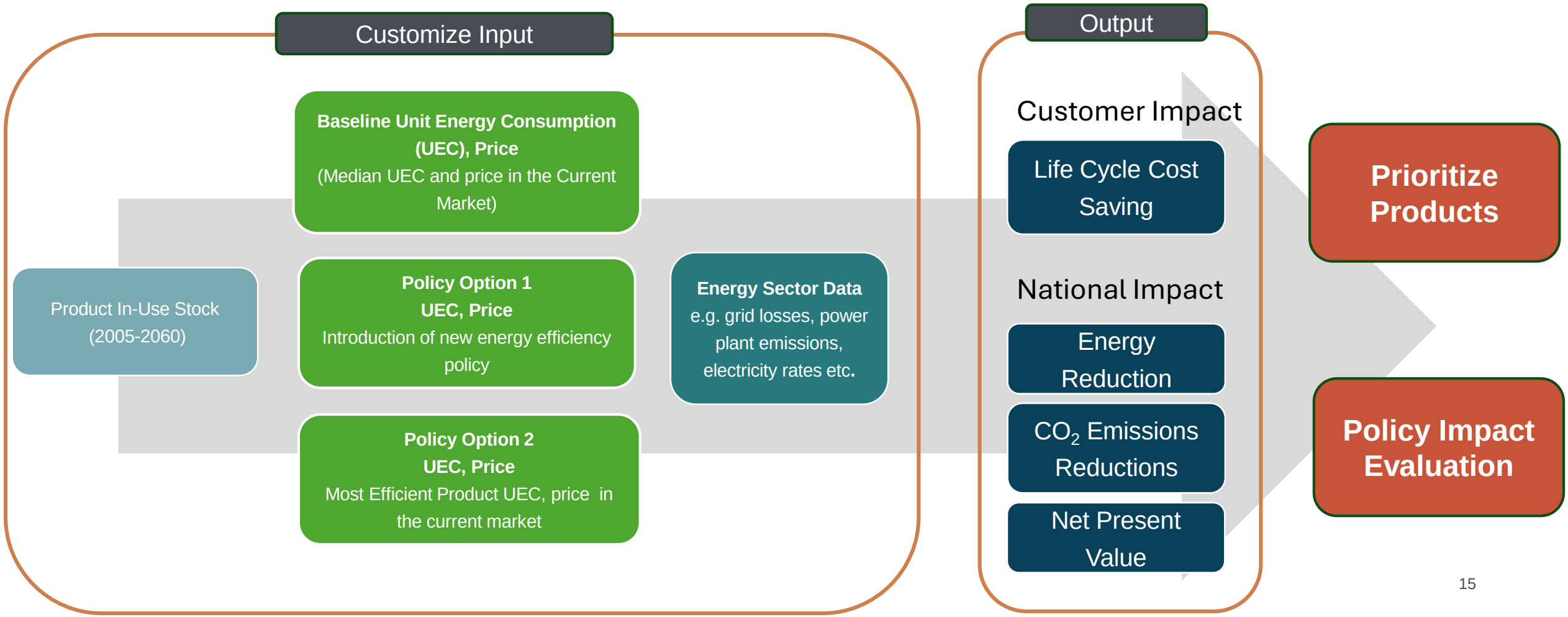
Download Model Results



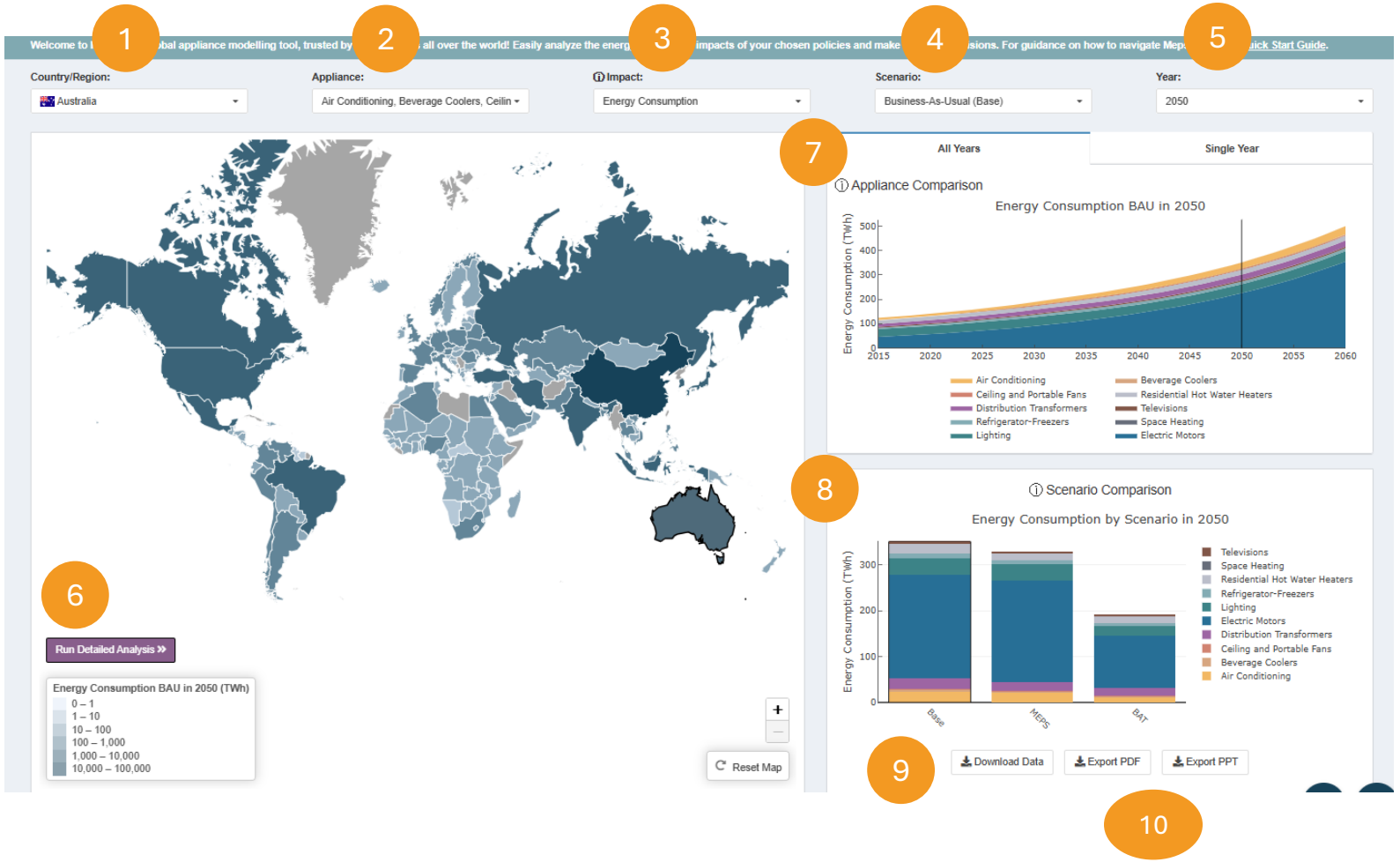
- Prioritization of economies and appliances
- Analysis of different policy scenarios
- Presentation of cost- benefits, paybacks, and tons

Methodology

- Bottom-up stock accounting model



Mepsy Graphical User Interface (GUI)



1. Economies dropdown
2. Appliance selector
3. Impact metric selector
4. Policy scenario
5. Year
6. Economies detailed analysis button
7. Appliance comparison
8. Economies comparison
9. Download scenario data
10. Export PDF/PPT

Thank you!
Any questions?

STEVEN ZENG

Director of China Program, CLASP

| szeng@clasp.ngo

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