Data Collection Activities

ECOWREX Regional Workshop

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15 November 2018

Accelerating our transition to a more sustainable world

CLASP improves the energy and environmental performance of the appliances & equipment we use every day

What We Do

- **Energy & Quality Standards** to keep inefficient, cheap products off the market

- **Policy Compliance, Testing & Quality Assurance** to ensure products perform & markets are fair to all

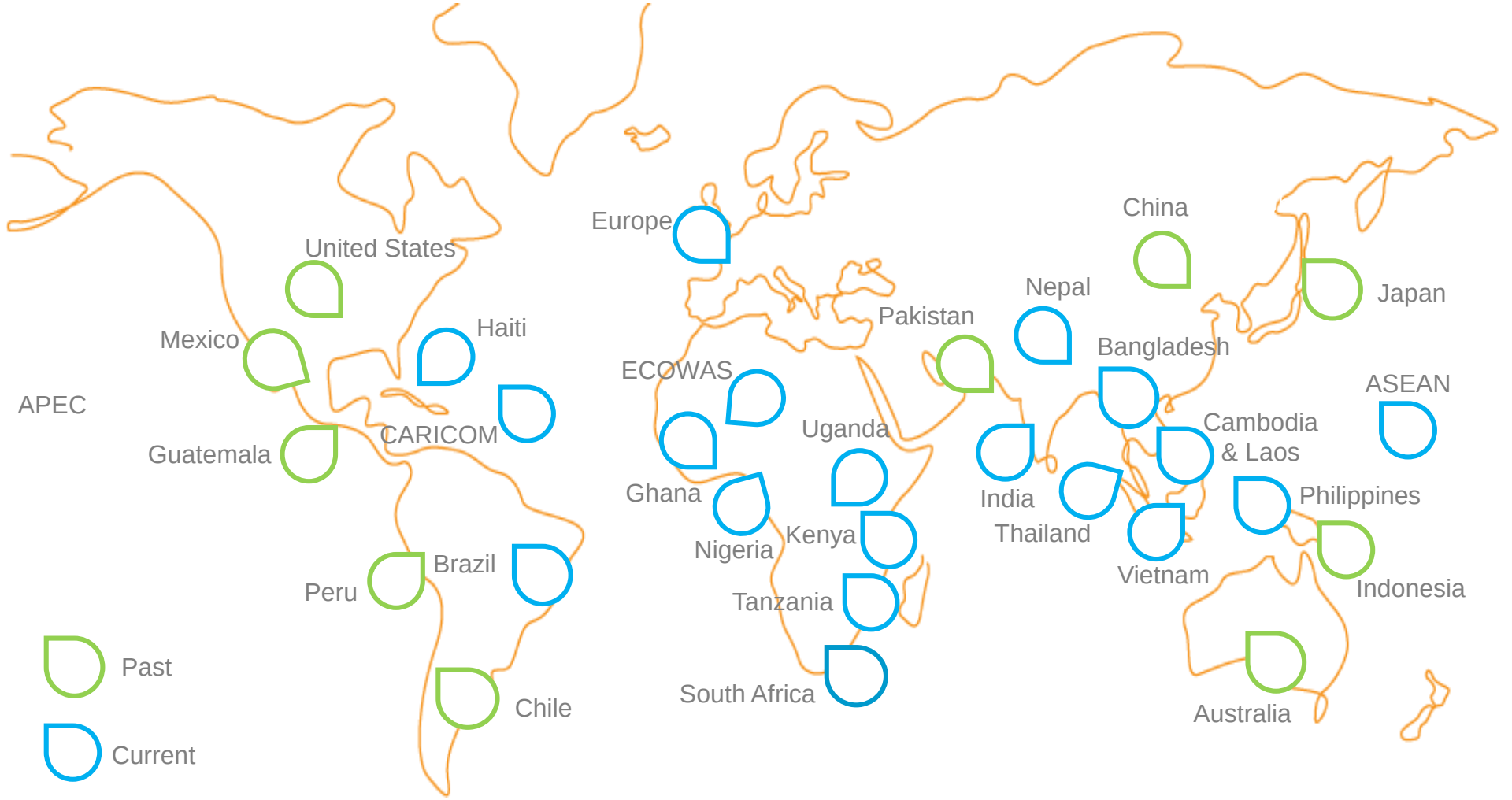
- **Product Labeling & Consumer Education** to attract consumers to good products & inspire demand

- **Awards & Product Recognition** to reward early-movers & accelerate markets

- **Procurement, Incentives & Bulk Buys** to incentivize innovative manufacturers, reduce risks for all & saturate markets

- **Global Collaboration & Knowledge Sharing** to leverage cutting edge & collective knowledge and forge productive partnerships

Where We Work



Collecting Data: Methodologies, Types, and Sources

www.clasp.ngo – CLASP Standards & Labelling Guidebook, Chapters on Setting Standards and Evaluation

Evaluation Data: Type and Sources

Labeling and standards-setting program evaluation uses a variety of data from a variety of sources.

Data Type	Main Data Sources
Customer and retailer knowledge, awareness, understanding, and decision making	• Surveys of customers and retailers and in-depth interviews
Availability of products	• Sales data from manufacturers, trade associations, or government • Surveys of manufacturers and retailers
Prices for efficient products	• Surveys of customers, retailers, and manufacturers
Market penetration	• Sales data from manufacturers, trade associations, or government • Surveys of participant and non-participant customers • Surveys of suppliers
Energy use	• Manufacturer data • Independent laboratory data • Engineering specifications • Metered end-use data
GHG emissions	• Reported emissions factors • Utility dispatch model data

Kigali Cooling Efficiency Programme:

Supporting ECOWAS Standards Implementation

ECOWAS Compliance Cooling Project

KIGALI COOLING EFFICIENCY PROGRAM

- Support implementation of ECOWAS regional EE standards
- Lay foundation for regional compliance collaboration on cooling products
- Prevent dumping of inefficient products across borders by increasing capacity for compliance through:

Compliance Training

Conduct training workshops for compliance officers and policy-makers

Distribute best practices suitable for ECOWAS market

Regional Product Database

Develop a regional cooling product database for online information-sharing

Enable customs officials to restrict entry of inefficient cooling products

Test Laboratory Assessment

Evaluate ECOWAS test laboratory capacity for cooling products

Assess gaps, challenges, and opportunities for increased cooling testing capacity

Proposed ECOWAS Regional Product Database

- Single regional tool, web-based, centrally hosted and managed
- Implemented/accessible at the national level
- Focused on cooling products initially (refrigerators and air conditioners), can be expanded later
- In French, English, and potentially also Portuguese
- Various uses:
  - Register products on the market
  - Customs checks
  - Market surveillance and enforcement
  - Inform standards and label policy implementation and reporting
  - Consumer and industry education
- Incorporating existing tools and processes used in ECOWAS countries
- Designed to be compatible for future mobile application

Database sample data fields for ACs

Data Fields	Description / details and examples	Public/ private Information
Product Brand Name	Manufacturer's brand name for the product	Public
Model names & numbers	Unique model name or number	Public
Sales/prices	Suggested retail price and/or estimated annual sales quantity in the region	Public/ Private
Energy performance/ star ratings	If the label system uses stars, this could indicate the appliance performance level using the number of stars that would appear on the product label; may alternatively indicate EER level	Public
Availability	Specific countries where this product is available for purchase; e.g. Nigeria, Ghana, Cote d'Ivoire, etc.	Public
Country of Manufacture	Where the product is manufactured; such as: China, Thailand, Japan, Malaysia, etc.	Public
Registration number and expiration date	Provides a unique ID for each product model and expiration for registration	Private or public
Additional information	Split/packaged systems; Ducted/Non-ducted; cooling capacity; compressor type; power input & frequency, etc.	Public
Refrigerant	R-22, R-32, R-134a, R410A, R-452B, R-290, etc.	Public
Compliance information	Indicator of compliance or non-compliance, verification test results, dates when registered, test reports, etc.	Private

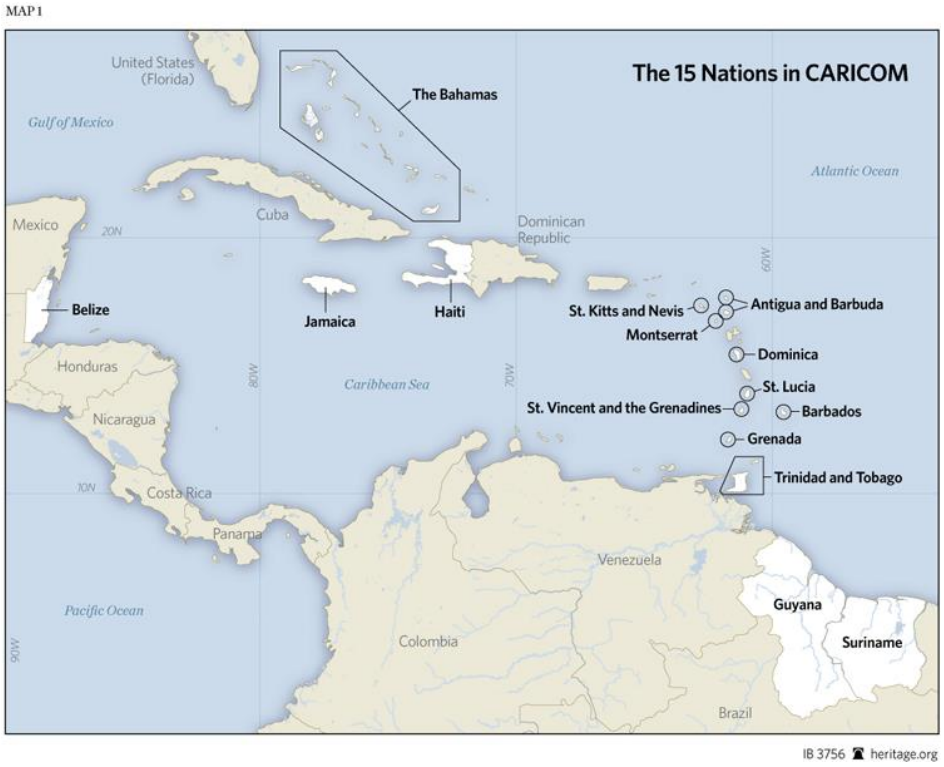
Market Assessment Case Study:

Understanding air conditioner market in CARICOM

Case Study – CARICOM room air conditioners

- CARICOM was looking to harmonize with existing regional or international test standards.

- Impact assessments were developed and included:
  - Market analysis
  - Cost-benefit analysis
  - Summary of national impacts: energy savings and GHG emissions mitigation



The value of data in the CARICOM roadmap

- There was no data available when CLASP first met with the various stakeholders
- CLASP needed to collect market data to answer key questions about the market
- Light touch market data collection in 13 CARICOM countries:
  - AC product characteristic and energy performance data, were collected by visiting local appliance retailers

Data needed

Data type	Data needed	Sources
Economic Data	**Recommended** • Electricity tariff schedule for residential or commercial customers (as applicable). At a minimum, average annual energy price. • Residential or commercial consumer discount rates (as applicable) • Societal discount rate	• Ministry of Energy • Ministry of Environment • Ministry of Finance • Other relevant agency
Market Data	**Recommended** • Market Structure: manufacturers, importers, and distribution channels → to inform supply chain • Households or commercial buildings ownership levels (or market shares for household vs commercial) • Annual sales of each class of product (past 5 years) • Relative market share of product classes • Share of imports vs. local manufacturing	• National market assessments • Local manufacturers / Importers • Industry associations • Customs • National statistics office
Product Data	**Recommended** • Annual energy consumption for existing models of each class of product (EER, SEER, etc.) • Average product lifetime • Retail prices • Usage (hours of use, days per year).	• National market assessments • Local manufacturers / Importers • Industry associations • Retailer surveys • Online data
Energy Sector Data	**Recommended** • Conversion factor from site electricity to source energy (transmission and distribution losses) • CO2 emissions factor from electricity generation	• Ministry of Energy • Ministry of Environment • Ministry of Finance • Other relevant agency

Where to find information? - Energy label

Refrigerator volume (liters)

Refrigerator type

Annual Energy Consumption

Location: To be affixed on the top right hand corner of the refrigerator door.

Where to find information? - Rating Plate

Manufacture Name

Model Number

Dimensions ARE NOT equivalent to storage volume

Country of origin/manufacture

Refrigerant Type

Where to find the information? - Product Manual

Haier

Submittals

Arctic Series

Rev. Jan. 2017

1U09EH2VHA / AW09EH2VHA

1U12EH2VHA / AW12EH2VHA

1U18EH2VHA / AW18EH2VHA

HaierAmerica
1800 Valley Road
Wayne, NJ 07470
Tel +973.617.1800
www.Haier.com

Haier **Arctic Series Submittal**

9000 BTU/HR WALL MOUNTED INVERTER DRIVEN HEAT PUMP SYSTEM

1U09EH2VHA / AW09EH2VHA

Job Name: _____ Approval: _____

Purchaser: _____ Date: _____

Submitted To: _____ Submitted By: _____

Construction: _____ Unit: _____

Reference: _____ Drawing #: _____

Accessories

Remote Controller
Ships with YR-HG

Wired Thermostat
Compatible with YR-E17 with interface kit WK-B
Compatible with YR-E16 with interface kit WK-B

WIFI
Compatible with WiFi USB adapter KZW-W002

Electrical Requirement	
Power Supply	208/230V, 1 Phase, 60 HZ
Operating Voltage Range	187~253 VAC
Recommended Fuse/Breaker Size	15A
MCA	12A

Operating Range	
Cooling	14~115°F (-10~46°C)
Heating	-22~75°F (-30~25°C)

Cooling Performance	
Rated Cooling Capacity	9,000 BTU
Cooling Capacity Range	3,100~12,000 BTU
Rated Power input	595 W
SEER	28.0
EER	15.5

Heating Performance	
Rated Heating Capacity	12,000 BTU
Heating Capacity Range	3,100~22,000 BTU
HSPF	13.0

Pipe Length	
Maximum Pipe Length	66 ft
Maximum Pipe Height Difference	50 ft
Connection	1/4"(Discharge) 3/8"(Suction) Flare

HaierAmerica
1800 Valley Road
Wayne, NJ 07470
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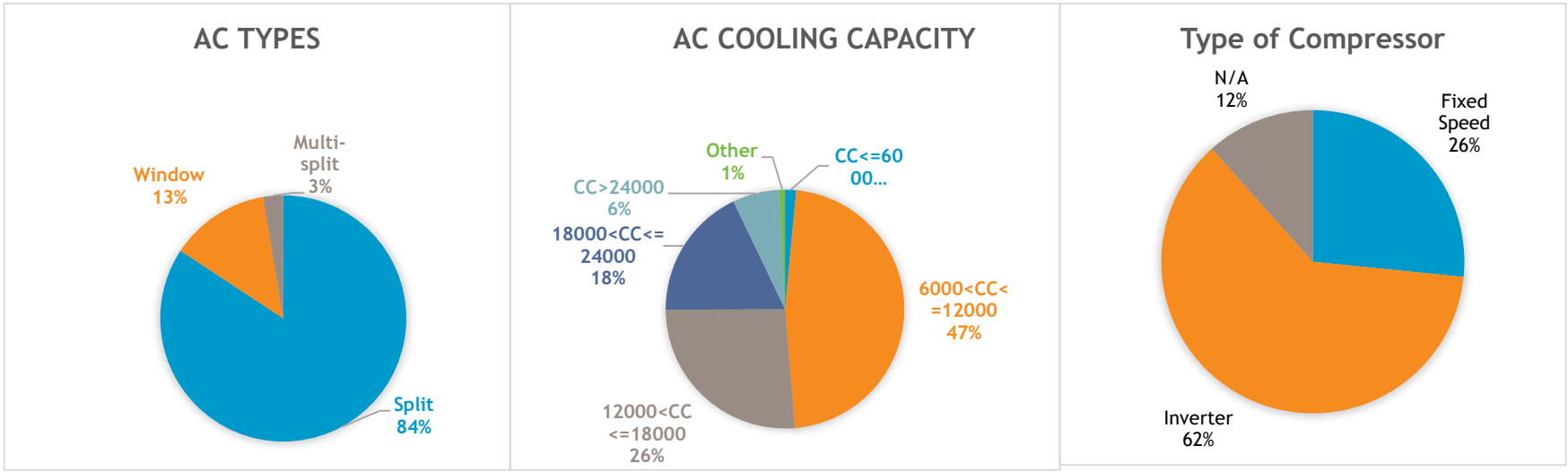
www.Haier.com

Rev. Jan. 2017

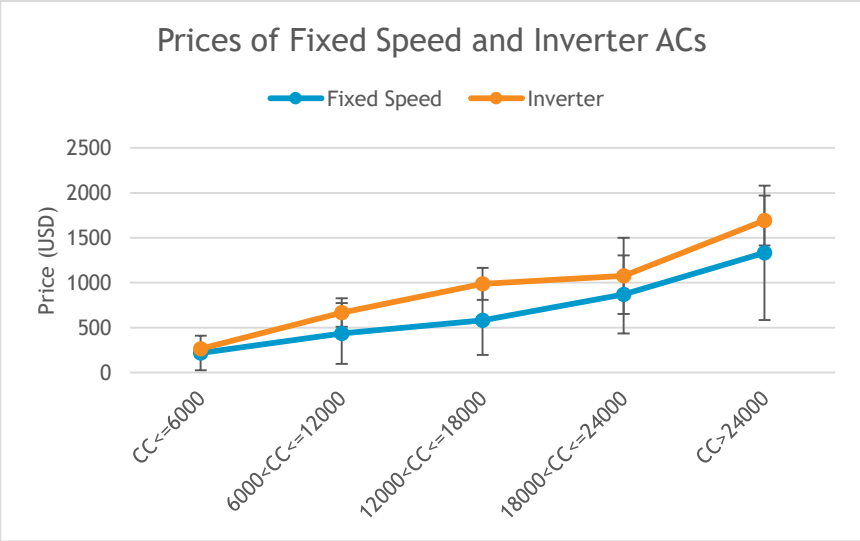
Market Analysis – Air Conditioners

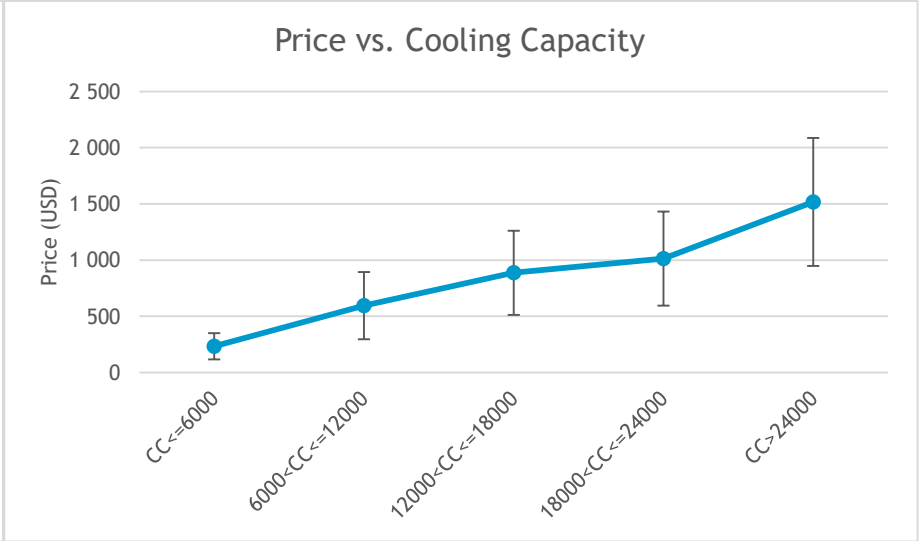
- The collected data provided an understanding on what products are sold on the market.



Market Analysis – Air Conditioners

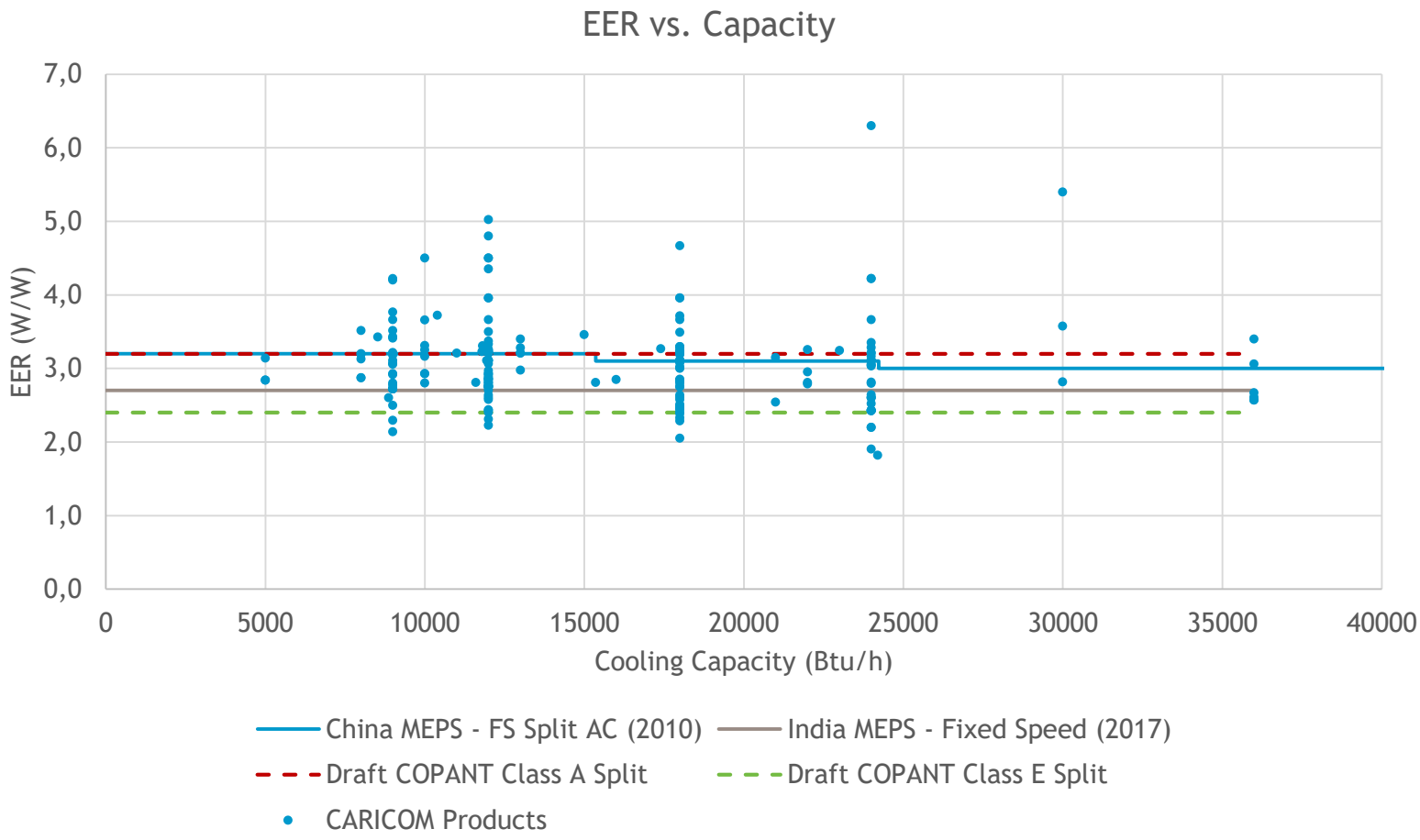
- The collected data provided an understanding on the prices for different types of ACs





Market Analysis – Air Conditioners

Different MEPS scenarios – what is the ambition of the program?



Cost-Benefit analysis results - Jamaica

- Costs and benefits from the consumer perspective use a Life-Cycle Cost (LCC) calculation

	MEPS Option 1 EER 3.0	MEPS Option 2 EER 3.2	MEPS Option 3 EER 3.4
Unit Level Benefits			
Payback Period (years)	0.9	0.96	1.02
LCC savings (US$)	398	554	688
National Level Benefits			
Total Electricity Cost Savings through 2030 (mUS$)	96.4	135.2	169.4
Cost/Benefit Ratio	7.42	6.97	6.57
Site Energy Savings in 2030 (GWh)	76	106	132
Site Energy Savings through 2030 (GWh)	492	691	866
CO_2 Emissions Mitigation through 2030 (Mt CO_{2e})	0.38	0.53	0.66

The potential annual savings for CARICOM

Reduce electricity use

→ by over 2.25 TWh in 2030

→ More than 9% of current electricity use

...equivalent to 4 100MW power plants

Save approximately 400 million US$ on electricity bills

Reduce CO2 emissions by more than 1.5 million tonnes

...equivalent to 814,000 passenger cars

Data Collection:

Real-time appliance energy consumption in India

Residential energy end-use data collection in India

- Many baseline estimates based on limited data and assumptions
- Goal to assess real-time baseline to assess realistic energy efficiency policy impacts and inform standards setting
- Analysing appliance energy use in households

  - Nationwide survey of 5000 households to gather information on appliance usage, purchase behaviours, usage patterns, penetration of EE appliances
  - Monitoring home appliance energy use through installed load monitoring devices (Wattman) in 200 households across the country to capture real time appliance energy consumption
  - Monitoring appliance specific energy consumption data in 20 households to validate findings of “Wattman” device

Development and Implementation of ISO Standards for Clean Cookstoves:

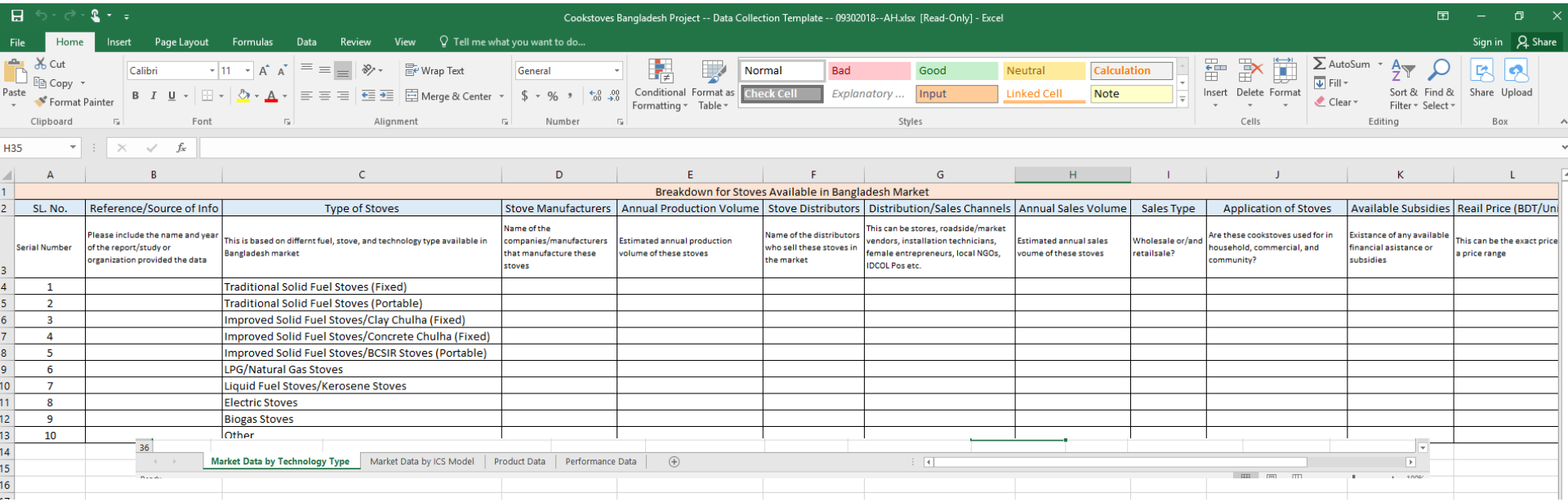
Data collection activities in Bangladesh

Bangladesh improved cookstoves market

- Last market assessment conducted in 2012 by the Clean Cooking Alliance
- Target market for improved cookstoves is over 30 million households:
  - Only 510,000 stoves in use in 2012
  - Penetration rate was less than 2%
- Market is shared by 2 main dissemination programs and small manufacturers
- Different programs/manufacturers collect data on their activities and product performance, but no comprehensive market assessment for Bangladesh
- Limited market and product performance information available
- Data needed to inform standards development and implementation

Data Collection Approach

- Collect all available data to understand data gaps, and to review current status of improved cookstoves market compared to international standards
- Mainly secondary data collection:
  - Product performance testing reports from all stakeholders
  - Sales and pricing information and reports
  - Programme monitoring & evaluation reports with product performance data and sales
  - And more…!



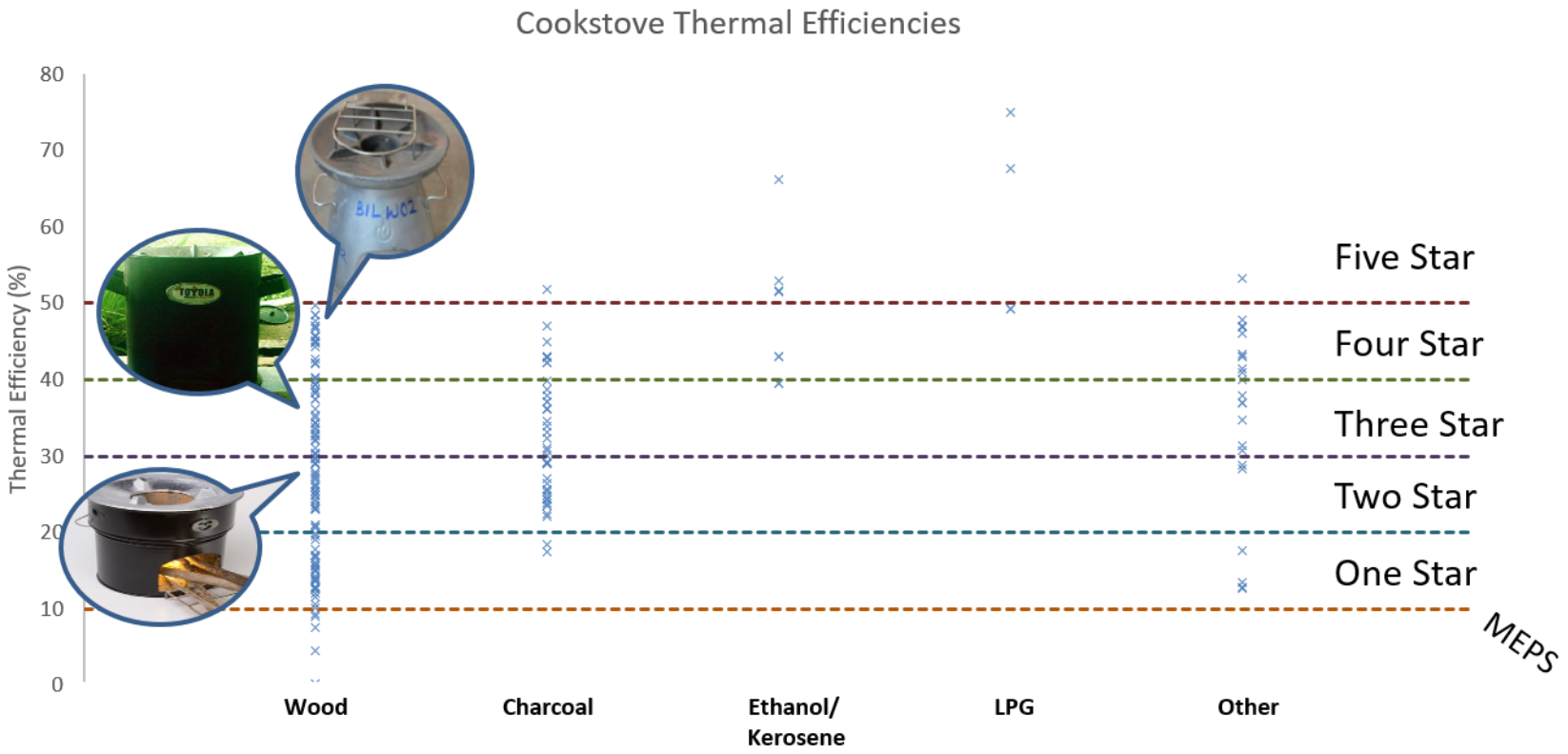
SL. No.	Reference/Source of Info	Type of Stoves	Stove Manufacturers	Annual Production Volume	Stove Distributors	Distribution/Sales Channels	Annual Sales Volume	Sales Type	Application of Stoves	Available Subsidies	Reail Price (BDT/Un
Serial Number	Please include the name and year of the report/study or organization provided the data	This is based on differnt fuel, stove, and technology type available in Bangladesh market	Name of the companies/manufacturers that manufacture these stoves	Estimated annual production volume of these stoves	Name of the distributors who sell these stoves in the market	This can be stores, roadside/market vendors, installation technicians, female entrepreneurs, local NGOs, IDCOL Pos etc.	Estimated annual sales voume of these stoves	Wholesale or/and retailsale?	Are these cookstoves used for in household, commercial, and community?	Existance of any available financial asistance or subsidies	This can be the exact price a price range
1		Traditional Solid Fuel Stoves (Fixed)									
2		Traditional Solid Fuel Stoves (Portable)									
3		Improved Solid Fuel Stoves/Clay Chulha (Fixed)									
4		Improved Solid Fuel Stoves/Concrete Chulha (Fixed)									
5		Improved Solid Fuel Stoves/BCSIR Stoves (Portable)									
6		LPG/Natural Gas Stoves									
7		Liquid Fuel Stoves/Kerosene Stoves									
8		Electric Stoves									
9		Biogas Stoves									
10		Other									

Data types and sources to be collected

Data Type	Data Needed	Sources
Market Data	**Market Composition** Traditional Solid fuel stoves built on site, Traditional Solid fuel stoves sold as product, Improved solid fuel stoves built on site, Improved solid fuel stoves sold as product, Liquid fuel stoves sold, LPG Cookstoves sold as product, and other. **Sales Channels** Store, Roadside/Market Vendor, Installation Technician, Local NGOs/IDCOL partner organizations, and other.	• Global Alliance • SREDA • Local test laboratories • IDCOL • IDCOL partner organizations • World Bank • BBF • Local NGOs • Local commercial entities • Other relevant agencies
Product Data	Data Source, Country/Region, Local/Imported, Stove Maker, Stove Name, Stove Type, Model Number, Weight (grams), Built Materials, Installation, Fuel Type, Picture, Product Lifetime, Thermal Efficiency (%), Specific Consumption Rate (MJ/min/L), PM2.5 (mg/MJd), PM2.5 Emission Rate (mg/min), CO (g/MJd), BC (mg/MJd), Stove Distributor/Retailer, Type of Distributor/Retailer, Retail Price (USD $/Unit), Warranty Period (months), and other.	

Anticipated data collection outputs

- Market assessment to establish a reference baseline
  - How can the market apply proposed thermal efficiency tiers?
  - How should the tiers be adapted or implemented to suit the national market?



Questions?


Automatic Distributor of TECNO
7660 0918
Approved Point of Sale
SHARP
21"

Contact

See more about CLASP at www.clasp.ngo

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clasp