



ENERGY COMMISSION

Securing Ghana's Energy Future Today

UNLOCKING ENERGY SAVING OPPORTUNITIES IN GHANA'S NEW ENERGY EFFICIENCY REGULATIONS

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Environmental Dumping of Climate Changing Cooling Appliances in Developing Countries.

What is environmental dumping?

Exporting products to another country or territory that:

1) contain hazardous substances,

2) have environmental performance lower than is in the best interest of consumers or that is contrary to the interests of the public and global commons

3) can undermine the ability of the importing country to fulfil its local regulations and environmental treaty commitments.

What is environmental dumping of cooling equipment (refrigeration and air conditioning appliances)?

It entails:

- 1) Export of technology that cannot legally be sold in the country of export due to failure to meet environmental, energy efficiency, safety or other product standards.
- 2) Export of technology that is unusable in the country of export because the refrigerants phaseout and phasedown control schedules under the Montreal Protocol.

Includes:

- New cooling equipment with low energy efficiency and obsolete ozone-depleting and high-GWP GHG refrigerants;
- Used cooling equipment typically with even lower energy efficiency as a result of low MEPS at time of manufacture, faulty and deteriorated components.
- Hazardous product waste including ozone-depleting and GHG refrigerants from developed countries for irresponsible and often illegal disposal in developing countries;
- Illegal appliance and e-waste from developed countries.

WHY THE FOCUS ON COOLING APPLIANCES?

- **Cooling appliances contain refrigerants like Hydrofluorocarbons (HFCs) which are short-lived climate pollutants (SLCP).**
- **SLCPs (Black carbon, methane, Tropospheric ozone and Hydrofluorocarbons) contribute 40-45% to the current warming rate.**
- **HFCs have a warming effect hundreds to thousands of times more powerful than CO₂. GWP of 1600 weighted by usage**
- **Cutting SLCPs is a key climate strategy for reducing near term global warming**
- **In developing countries HFC emissions are projected to be as much as 800% greater than in developed countries by 2050**



Causes – Factors that contribute to Environmental dumping of cooling appliances.

1. Increased demand for air conditioning and refrigeration.
2. Exporting countries/developed countries are regulating products more stringently for environmental protection and energy efficiency and so the used, obsolete or substandard appliances are dumped in the developing world.
3. Different phasedown and phaseout schedules set by the Montreal protocol
{The Montreal Protocol on Substances that Deplete the Ozone Layer regulates the production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances}
4. Lack of sufficient laws and regulations to fight the dumping.
5. Where laws are present, lack of enforcement capacity at ports of entries.
6. Some governments lack the political will or good will to fight for their own national interests.
7. Deliberate disregard of any existing anti-dumping policies by dishonest corporations exporting to the developing world.



INTRODUCTION OF STANDARDS & LABELS

L.I 1815

ENERGY EFFICIENCY STANDARDS AND LABELLING (NON-DUCTED AIR CONDITIONERS AND SELF-BALLASTED FLUORESCENT LAMPS) REGULATION 2005

L.I 1932

ENERGY EFFICIENCY (PROHIBITION OF MANUFACTURE, SALE OR IMPORTATION OF INCANDESCENT FILAMENT LAMP, USED REFRIGERATORS AND USED AIR - CONDITIONERS , 2008

L.I 1958 and L.I 1970

ENERGY COMMISSION (ENERGY EFFICIENCY STANDARDS AND LABELLING) (Refrigerating Appliance) REGULATIONS, 2009

L.I 2353

ENERGY COMMISSION (EFFICIENCY STANDARDS AND LABELLING) (LIGHT EMITTING DIODES AND SELF-BALLASTED FLUORESCENT LAMPS) REGULATION 2017



WHAT THE L.Is SEEK TO ACHIEVE

To enhance consumer benefits

- ❖ **By putting more money in their pockets**
- ❖ **By benefiting from stimulating technological improvement among manufacturers.**
- ❖ **Inefficient Air conditioners, Refrigerators and CFLs will be phased out of the market**
- ❖ **Stimulate economic growth with little or limited investments in more electricity production infrastructure**

STANDARDS, LABELLING AND ENFORCEMENT NEXUS

- ❖ Minimum Energy Performance Standards (MEPS) and Labelling are voluntary without legal basis for enforcement
- ❖ Voluntary MEPS may not achieve the desired objectives of energy efficiency.
- ❖ Enforcement is the key and must be backed by law - regulations

WHAT IS ENFORCEMENT AND ITS EFFECT?

The actions taken by an authority in response to incidents of non-compliance with the rules of a programme. (CLASP,2010).

- **“Regulations are just documents to be kept on shelves without a clear strategy of enforcement”. (Zan,2019)**

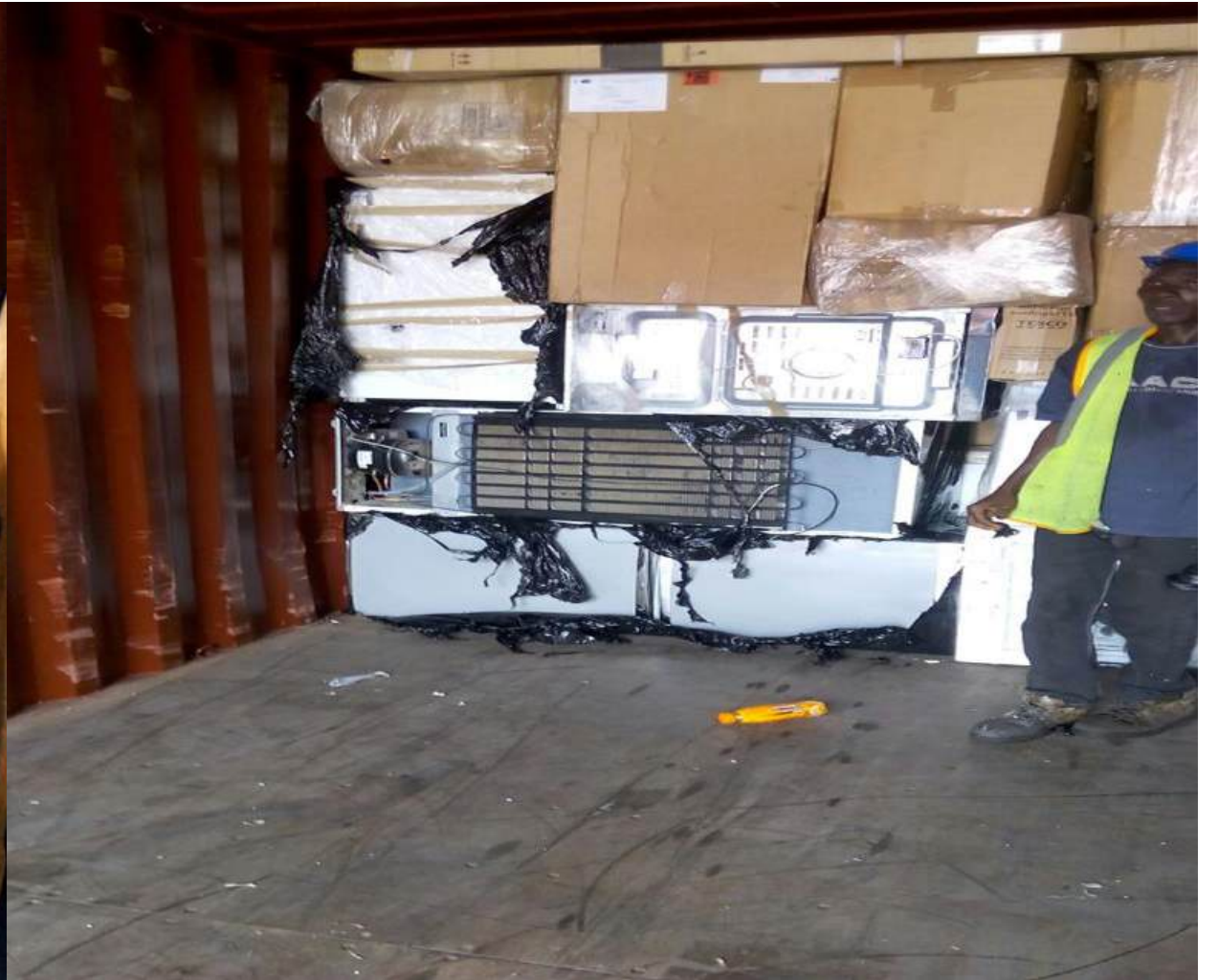
To halt dumping: *Standards & Labelling – Anti dumping tool.*





Enforcement Protocols, Market Surveillance, Monitoring

Importers must engage in genuine trade practices



Evidence of enforcement activities



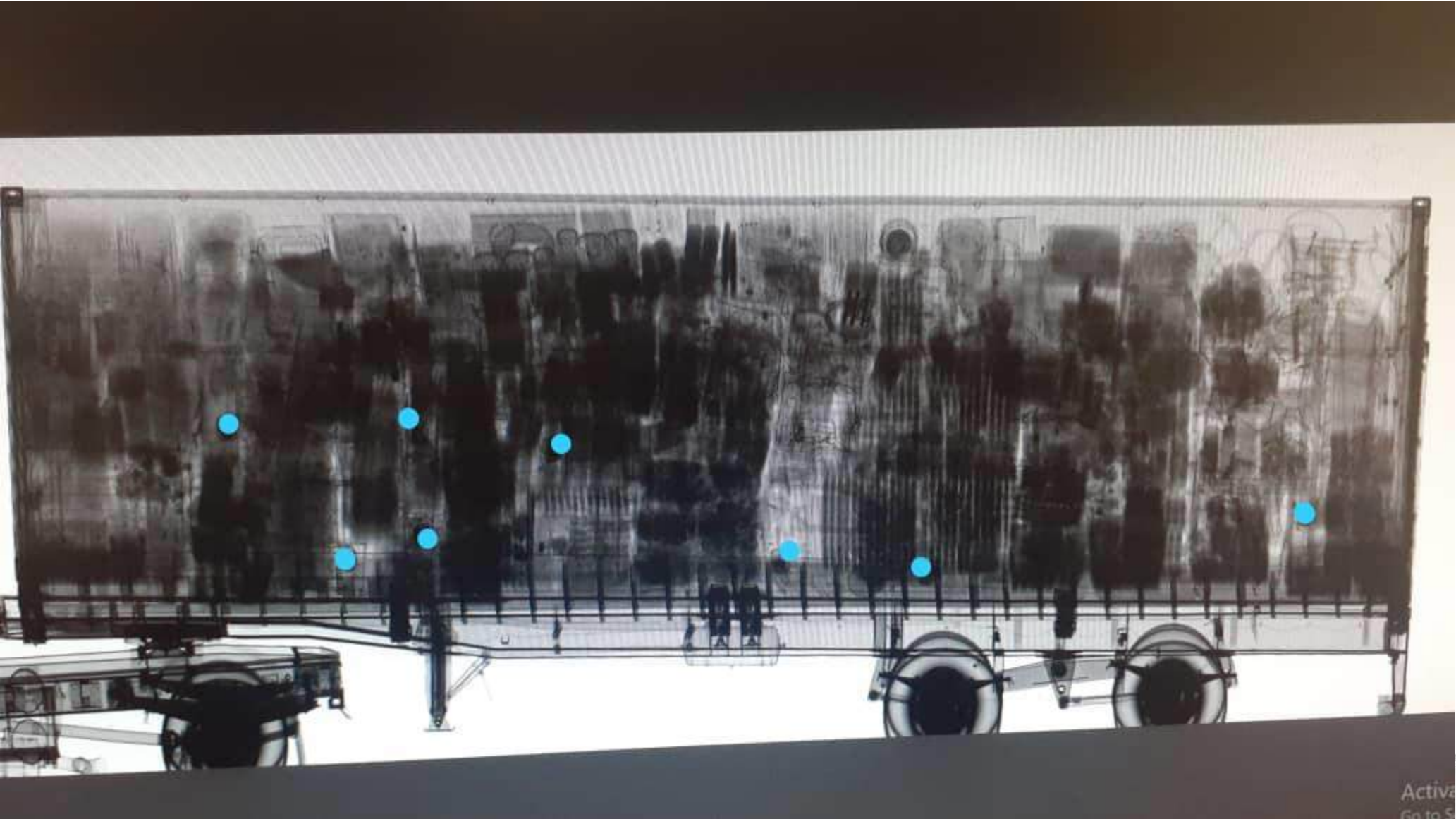
Evidence of enforcement activities



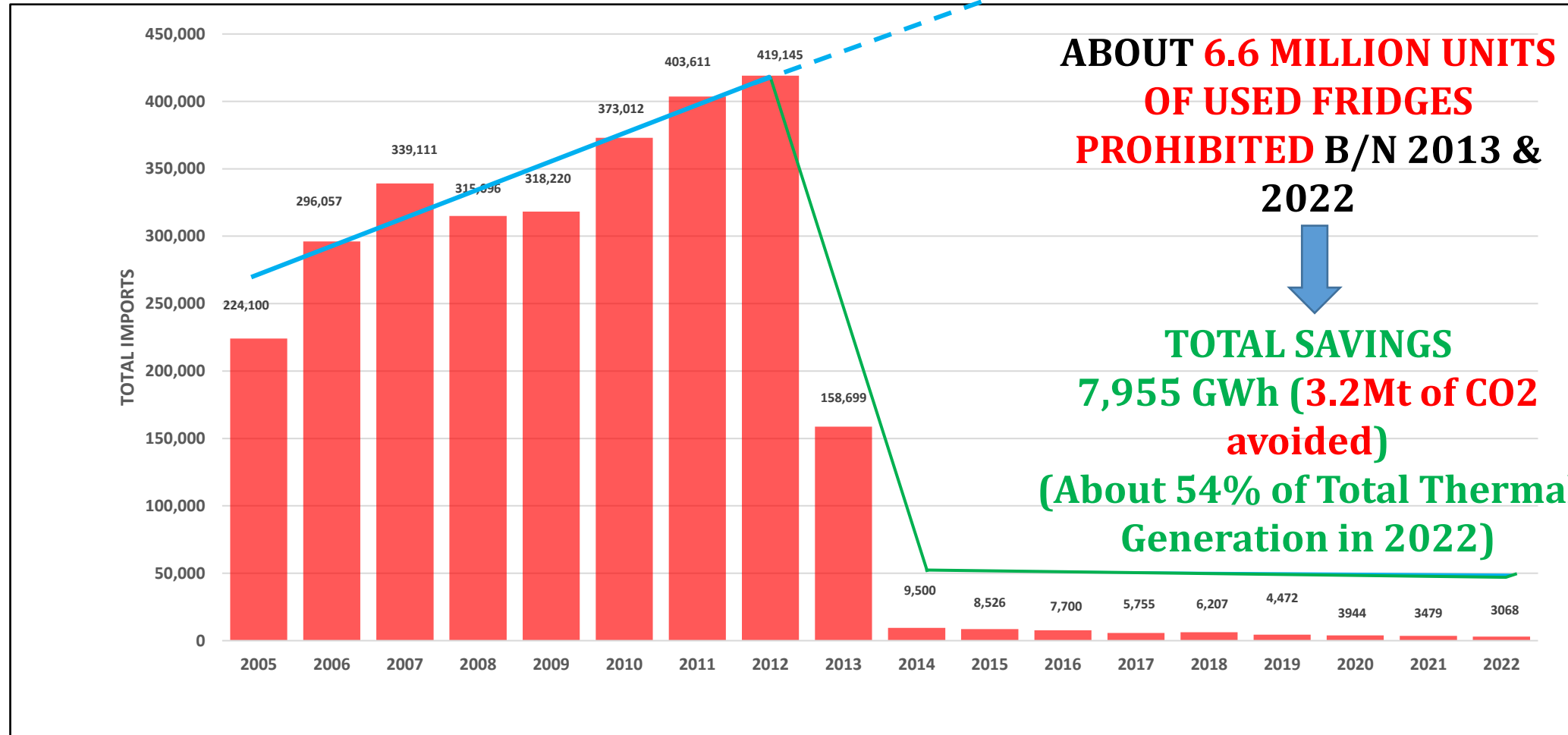
Evidence of enforcement activities



SCAN IMAGES



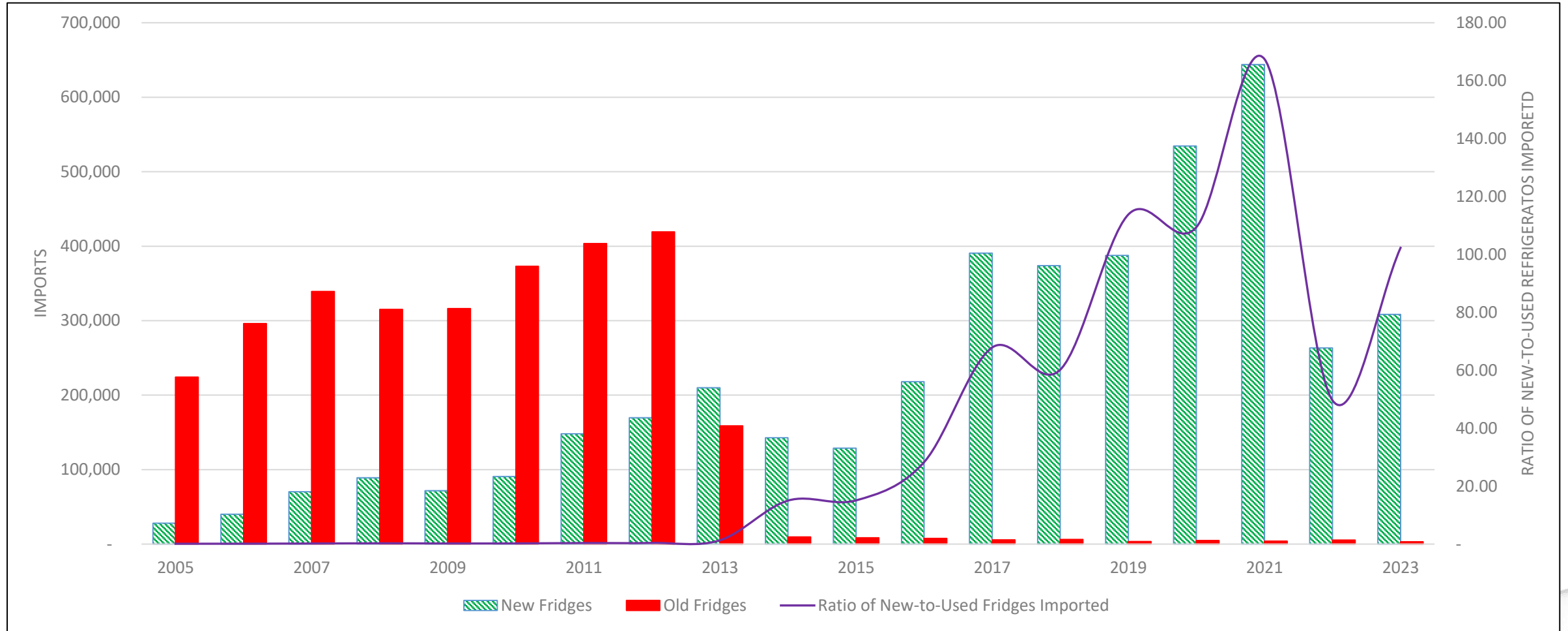
Impact of Enforcement of L.I. 1932



Trend of Used Fridges Imports (2005 – 2022)

Trends in New Versus Used Refrigerators Imports (2005 - 2023)

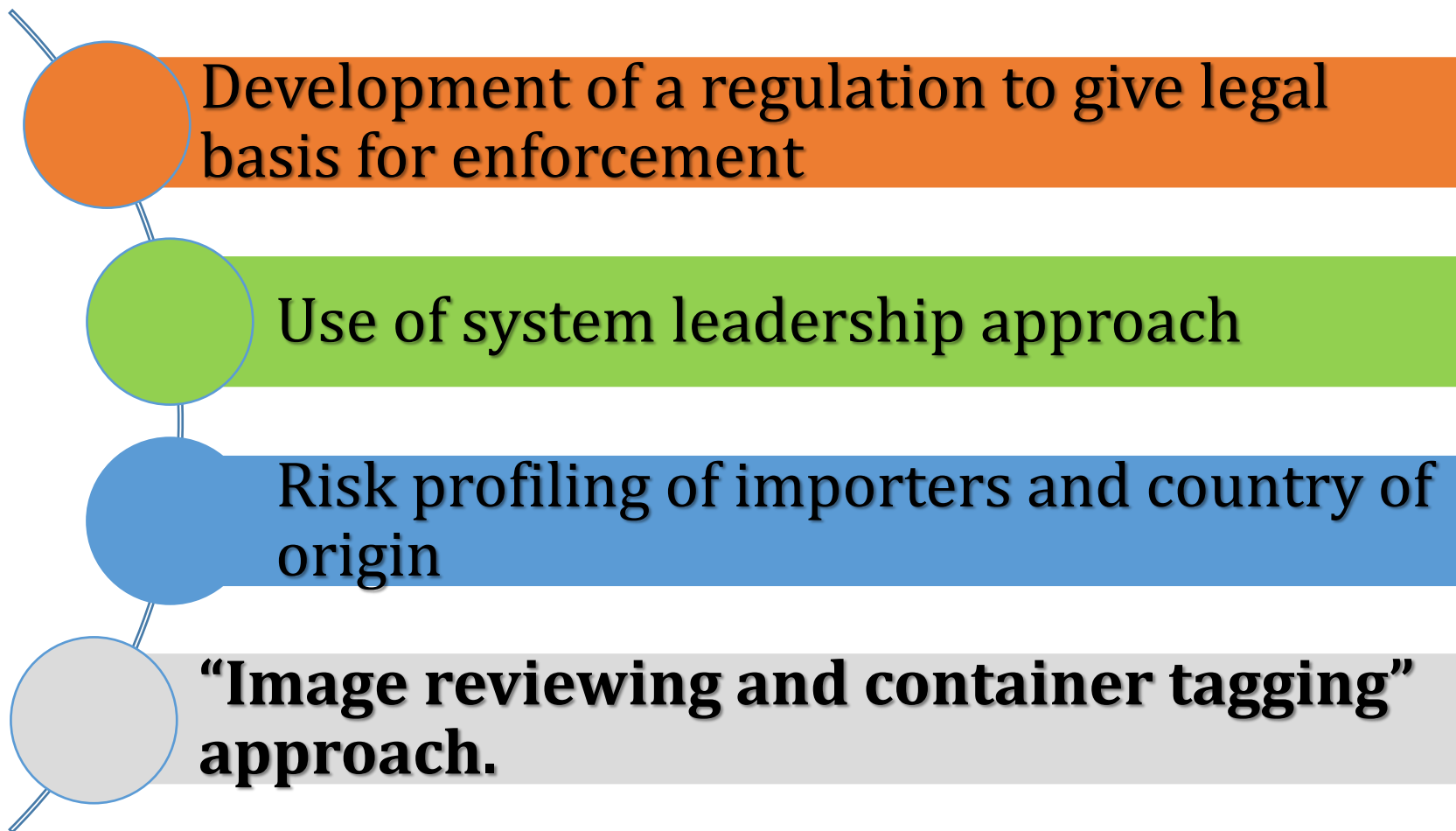
(How the market has been transformed between 2013 - 2023)





WHAT HAS BEEN THE STRATEGIES?

STRATEGIES



STRATEGGIES





System Leadership- Key to Policy success





Identify Champions



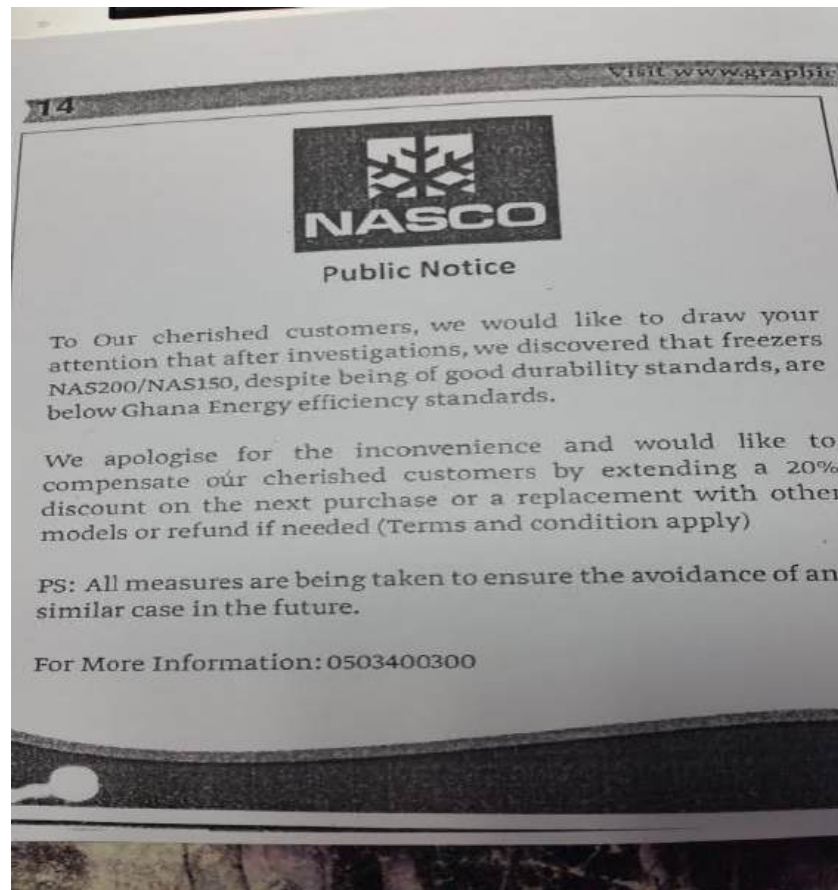


Enforcement Team at Ports of Entry

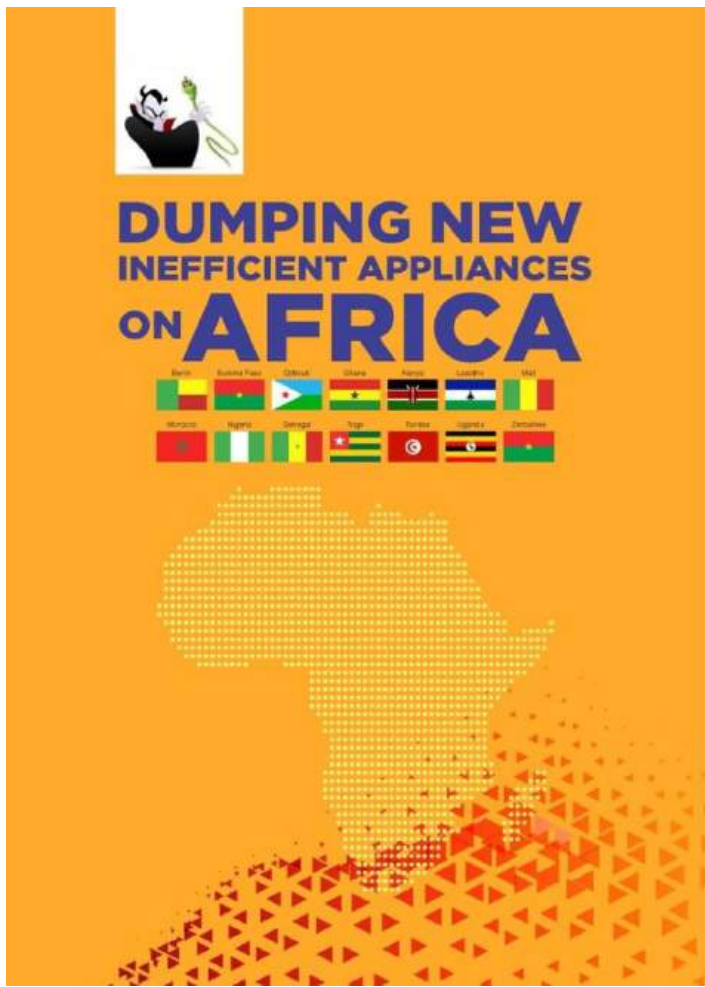


Naming and Shaming

- **Substandard appliances are:**
 - **removed from the market by causing a product recall.**
 - **Caused to be reshipped out of the country**



Identify Champions





Engaging manufacturers





VERIFICATION

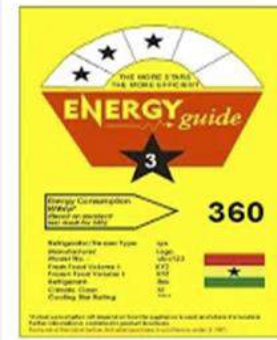
Verification Activities (1/2)



LIGHTING, REFRIGERATOR AND AIR CONDITIONER TESTING FACILITY INSTALLED @

Verification Activities 2/2

- ❖ The Certified Appliance App helps retailers and consumers;
 - to do quick verification by using the appliance model number
 - to search for specific items using the star ratings of the appliances.
 - To locate the nearest retail or distribution shop. Compliance performance of shops, contact details and google location are featured.
 - The APP is equipped with energy efficiency tips for using regulated appliances.
 - The APP calculates monthly electricity consumption of searched items.



Certified Appliances

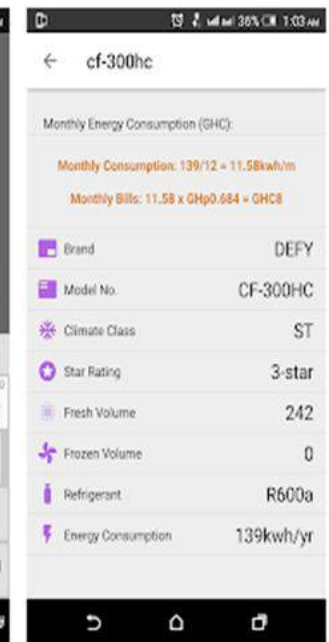
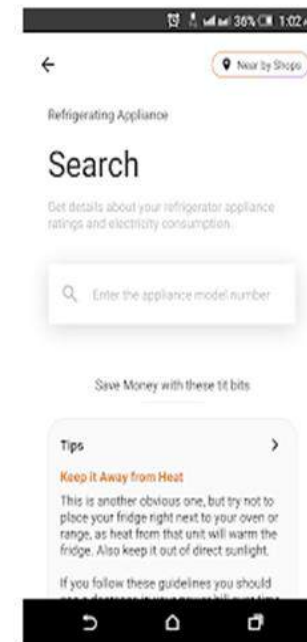
Energy Commission Productivity

★★★★★ 62

3+

Add to Wishlist

Install



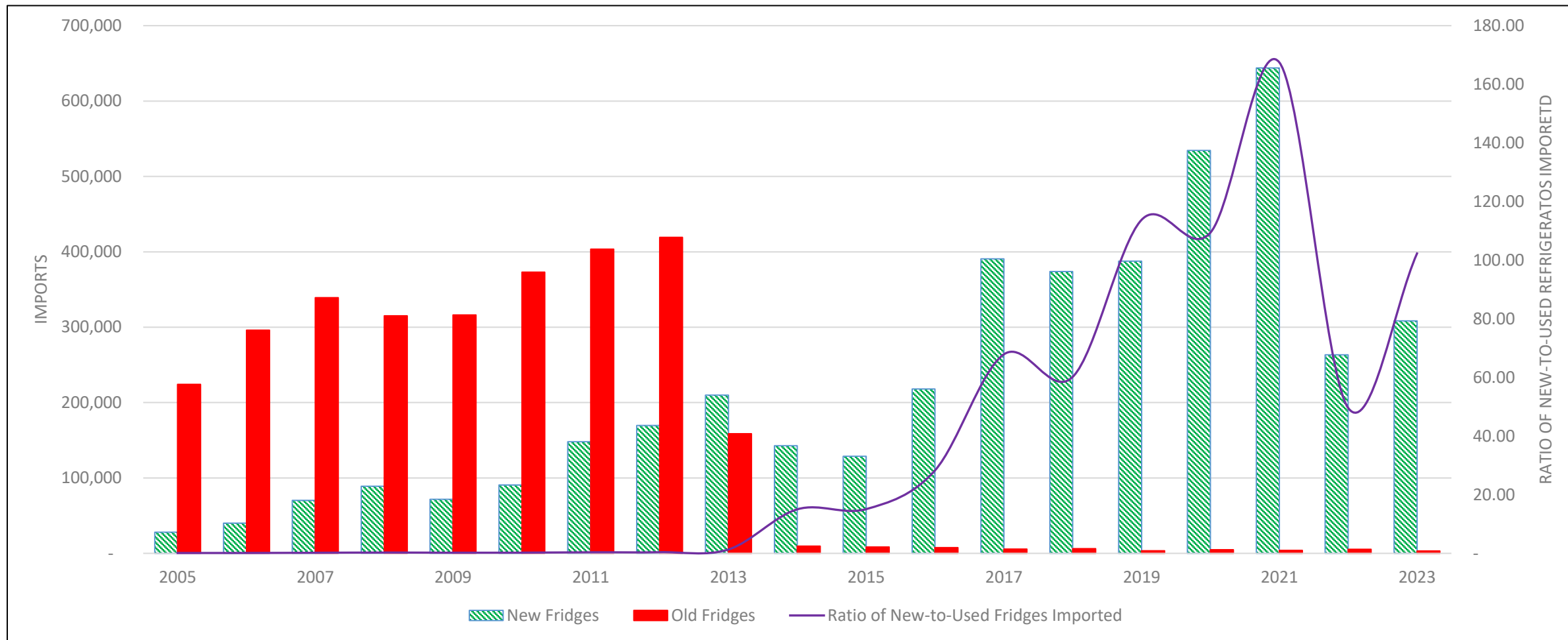
Effect of Monitoring and Enforcement





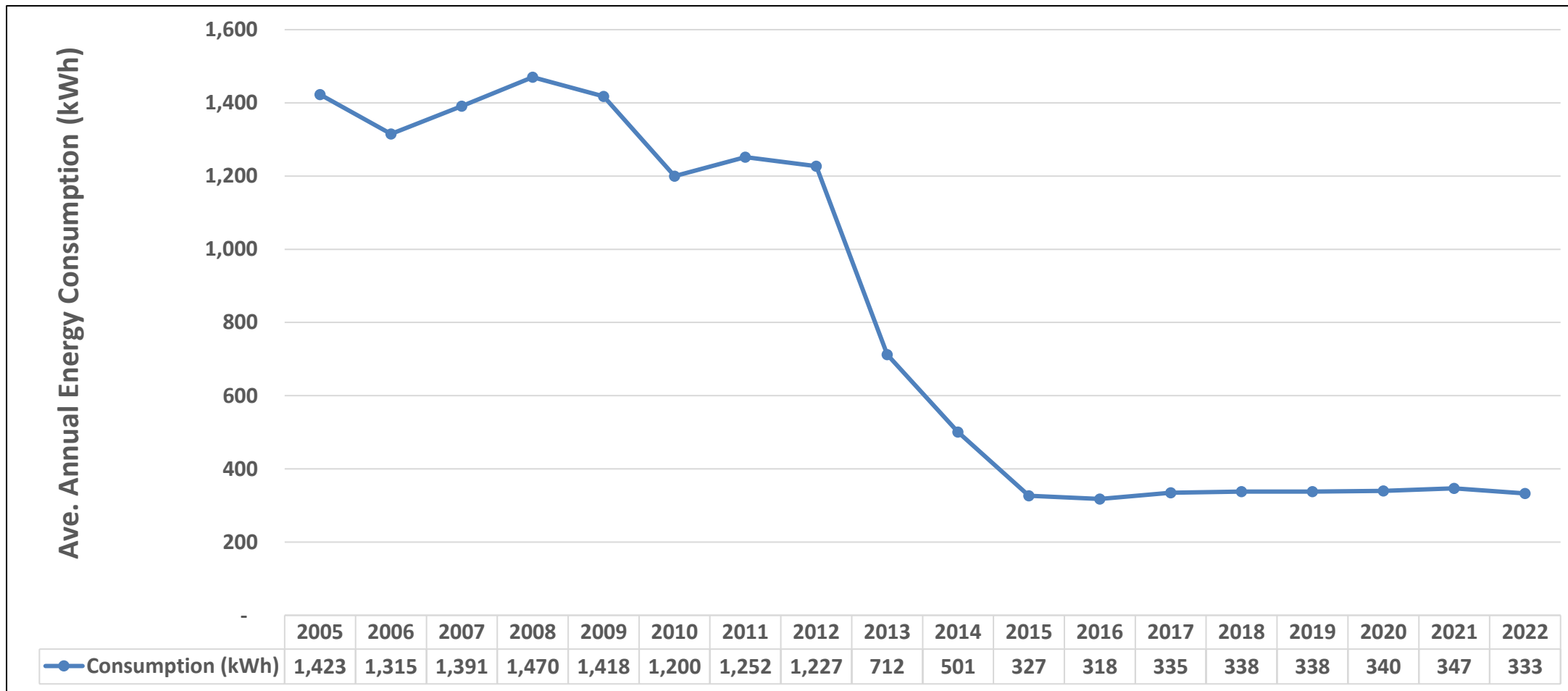
IMPACT & SAVINGS OPPORTUNITIES

Impact – Refrigerator Market



Evidence of Transformed Refrigerator Market through MEPS from 2005 – 2023

Impact – Energy Consumption Profile



Energy Consumption Profile of MEPS-compliant Refrigerators especially from 2013 – 2022

EE Achievements since 2006

- **2007 CFL Lighting retrofit: 6 million CFLs** were distributed to replace the estimated six million incandescent lamps at no cost to the beneficiaries – **124 MW peak savings**
- **2012 Refrigerator rebate scheme:** Over **10,470** energy-inefficient refrigerators replaced with new energy-efficient ones – **400 GWh and 1.1 million tons of CO₂, CFC savings – 1,500kgs**
- **Enforcement of LI 1932: 60,000** used refrigerators and **15,000** used ACs confiscated since July 2013– **40, ktons of CO₂ avoided.**

EE Achievements since 2006

- **Enforcement of LI 1958: Over 4.3 million new refrigerators were imported.**
- **Enforcement of LI 1815: Over 1.3 new ACs were imported.**

National Impact of EE Programmes

- MEPS programs in Ghana yielded an estimated **10,159 GWh (10.2 TWh)** of electricity savings: **Equivalent to total thermal gen. in 2018 & about 50.4% of total generation in 2020.**
- **6.32 million tons of CO2 emission avoided.**
- Over **1 billion USD** in savings on electricity bills.
- This **intervention delayed additional capacity expansion of 1,160 MW, (about a third of the total Installed Thermal Generation Capacity of 3,649 MW)**
- **This is achieved by REGULATORY ACTIONS.**

Household Impact

1. **Average Refrigerator consumption** has **reduced** from **1,200 kWh p.a.** to about **333 kWh p.a. in 2023.**
2. **Average AC consumption** has reduced from **4,000 kWh p.a.** to **2,962 kW p.a.**
3. Each **household saved 18,000 kWh** of **electricity** and **energy cost savings** of **1,920 USD.**
4. **Consumers** have **access to new and efficient technologies** that provide quality service.

ECOFRIDGES GO ON-WAGE FINANCING MECHANISM

Ghana's ECOFRIDGES Green On-Wage (GO) is **an innovative financial mechanism** to promote **affordable, climate-friendly, and energy-efficient domestic room air conditioners and refrigerators for salaried workers.**

The program **offers flexible repayments at 0% interest for 12 months (Cal Bank & Letshego)** and **encourages vendors (Hisense and Nestra GH Ltd)** to provide **refrigerators with 5 stars containing R600a refrigerants, and room air conditioners with 3 stars or more with R32.**

Impact

- **Sold 2,829 new energy-efficient refrigerators and 1,905 room air conditioners (April 2024)**
- **Yielded 38,253 MWh of energy consumption**, equivalent in direct and indirect GHG **emissions reduction of 31.784 tonnes of CO2** and;
- **Shifted consumer preference from used obsolete appliances to new efficient appliances, defeating the initial price barrier argument.**

Appliances covered Under the New Regulation

* Microwave	* Water Heaters	* Clothes Washing machine	* Television	* Computers
* Rice cooker	* Ventilating fans	* Industrial fans	* Comfort fans	* Refrigerators (Revised)
* Air conditioners (Revised)	* Distribution Transformers	* Electric motors	* Electric Kettle	* Public Lighting
* Set-Top Boxes	* Solar Panels	* Inverters	* Renewable Energy Batteries	* Prohibition on import of used Electrical Appliances
		* Prohibition on manufacture of incandescent Filament lamps		

Regulations for Appliances:

- **19 electrical appliances**
- **1 prohibition (incandescent lamps)**
- **1 cookstove**

Key Enforcement Challenges

1. Political Interference
2. Inadequate testing facilities
3. Lack of cooperation from some stakeholders
4. Cultural Interference from chiefs or community leaders

The way forward

- Encourage setting up more testing facilities.
- Institutional collaboration
- To introduce EE in the basic school curriculum.
- Introduce more incentive schemes
- End-of-life management
- Intensify EE awareness creation with Champions.



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