Global Fuel Economy Initiative (GFEI) Jamaica
Project Overview

Dr. Ruth Potopsingh
University of Technology, Jamaica
December 4, 2018
Outline

- Objectives of GFEI Jamaica Project
- Achievements
- Findings
- Recommendations
- Next steps

Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop 2018
The Global Fuel Economy Initiative (GFEI) and 50 by 50

- Established in 2009
- UC Davis, FIA Foundation, IEA, International Transport Forum, ICCT, CEGESTI, Centro Mario Molina Chile et al
- Funded by GEF, European Union (DG clima), FIA Foundation
- UNEP acts as coordinator
- Promotes the introduction of cleaner and more efficient in emerging economies
- Efficiency standards in developing countries
- Best practices from more established market leaders
- Objective: Stabilize emissions from the transportation sector by improving the fuel economy of global LDVs by 50% by 2050 in relation to 2005 levels.

Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop 2018
DOUBLE AVERAGE FUEL ECONOMY OF NEW CARS BY 2030 AND ALL CARS BY 2050
GFEI - Jamaica

The 3 core activities are:

- data development and analysis of fuel economy potentials by country and region;
- support for national and regional policy-making efforts;
- outreach and awareness raising to stakeholders (e.g. vehicle manufacturers).

Consulting partners: CEGESTI (Costa Rica) & Centro Mario Molina Chile (Chile)

Supported by UN Environment, FIA Foundation
Petroleum Consumption by Activity - Jamaica


Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop 2018
### National Vehicle Fleet

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Cars</td>
<td>252,894</td>
<td>252,961</td>
<td>259,764</td>
<td>265,122</td>
<td>269,524</td>
<td>366,002</td>
<td>424,701</td>
<td>507,797</td>
</tr>
<tr>
<td>Motor Cycles</td>
<td>7,223</td>
<td>7,353</td>
<td>7,789</td>
<td>8,779</td>
<td>10,024</td>
<td>48,073</td>
<td>53,149</td>
<td>58,705</td>
</tr>
<tr>
<td>Motor Tractors</td>
<td>445</td>
<td>418</td>
<td>425</td>
<td>431</td>
<td>405</td>
<td>1,299</td>
<td>1,340</td>
<td>1,402</td>
</tr>
<tr>
<td>Motor Trucks</td>
<td>77,179</td>
<td>76,900</td>
<td>76,965</td>
<td>76,370</td>
<td>76,100</td>
<td>122,262</td>
<td>134,408</td>
<td>150,470</td>
</tr>
<tr>
<td>Trailers</td>
<td>1,689</td>
<td>1,721</td>
<td>1,707</td>
<td>1,745</td>
<td>1,602</td>
<td>5,128</td>
<td>5,395</td>
<td>5,661</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>339,430</strong></td>
<td><strong>339,353</strong></td>
<td><strong>346,650</strong></td>
<td><strong>352,447</strong></td>
<td><strong>357,655</strong></td>
<td><strong>542,764</strong></td>
<td><strong>618,993</strong></td>
<td><strong>724,035</strong></td>
</tr>
</tbody>
</table>

*Estimated unregistered fleet is approx. 15%.*

---

**Tax Administration Jamaica**

Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop 2018
Jamaica Vehicle Type Profile (2017)

Motor Vehicles 2017

- Motor Cars: 70%
- Motor Trucks: 21%
- Motor Cycles: 8%
- Motor Tractors: 0%
- Trailers: 1%

Source: Tax Administration Jamaica, 2017

Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop 2018
PROJECT ORGANISATION

United Nations Environment

MEGJC (Sponsor)

UTech, Jamaica / CSEII (Project Manager)

National Stakeholder Working Group

Consulting Partners, CEGESTI, CCMCH
PROJECT OUTPUTS

Phase 1- 2015-2017

• Project Launch
• Two National Capacity Building Workshops
• Specialized Training – Developing the Vehicle Emissions Baseline
• National Working Group Meetings
• Public exhibitions

Phase 2- 2017- 2019

• National Stakeholder Consultations
• Specialized Training – Fuel Economy Policy Implementation Tool
• Updated Vehicle Emissions Baseline (2015, 2016 and 2017)
• Air Quality Diagnostic Study
• Film- Progress of GFEI in Jamaica
• Website development
• National Workshop to develop Action Plan
• Sub-Regional Workshop to discuss Caribbean Sustainable Transportation Road Map and Strategies

Ruth Potopsingh, UTech, Jamaica. GFEI Jamaica National Workshop 2018
Improving fuel economy will result in:

- Reduction in greenhouse gas emissions (CO2, \(\text{NO}_x\), \(\text{SO}_x\))
- Reduction in particulate matter and other harmful gaseous emissions e.g. \(\text{NO}_x\), \(\text{SO}_x\)
- Support Nationally Determined Contributions (NDC) targets (Paris Agreement)
- A reduction in oil dependence (fuel diversification)
- Improved balance of payments
- Improved health
- Contribution to the domestic economy/job creation
GFEI Database requirements

- Data of newly registered Light duty fleet (< 4000 kg)
- Emissions data calculated on minimum 85% of newly registered vehicles
- Methodology and data using GFEI tools
- CO2 emissions information from manufacturer data
- Verification by consulting partners (CEGESTI, CMMCh)
- Motorcycles are not included
Findings - Fuel Economy trend comparison

Baseline Light-Duty Vehicle Fuel Economy Trends

Source: UNEP, 2015

Liters per 100 kilometers (L/100km) normalized to NEDC Test Cycle

Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop 2018
Findings

FUEL ECONOMY AND EMISSIONS

<table>
<thead>
<tr>
<th>Year</th>
<th>Fuel economy (l/100km)</th>
<th>Emissions (g CO2/km NEDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>8.43</td>
<td>200.63</td>
</tr>
<tr>
<td>2017</td>
<td>7.11</td>
<td>167.30</td>
</tr>
</tbody>
</table>

Average % change:
- Fuel economy: 15.6%
- Emissions: 16.6%

Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop 2018
Findings

- The global recession
- Increased demand from other markets for 3 year-old cars
- Unfavorable movements of the Japanese currency

(JIS, 2011)
Findings

Average age of newly registered vehicles

2017
3.82 years

Ruth Potopsingh, UTech, Jamaica. GFEI Jamaica National Workshop 2018
There is a preference for Asian brands so particular attention must be paid to what is happening in these vehicle markets.

Ruth Potopsingh, UTech, Jamaica. GFEI Jamaica National Workshop 2018
### Key Findings

#### Summary Table

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Records</th>
<th>g CO2/km</th>
<th>MPG</th>
<th>lge/100km</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>20837</td>
<td>200.57</td>
<td>30.30</td>
<td>8.46</td>
</tr>
<tr>
<td>2008</td>
<td>17337</td>
<td>220.75</td>
<td>26.57</td>
<td>9.27</td>
</tr>
<tr>
<td>2010</td>
<td>8830</td>
<td>191.2</td>
<td>31.54</td>
<td>7.99</td>
</tr>
<tr>
<td>2012</td>
<td>14763</td>
<td>174.48</td>
<td>33.39</td>
<td>7.37</td>
</tr>
<tr>
<td>2014</td>
<td>15748</td>
<td>168.05</td>
<td>35.01</td>
<td>7.13</td>
</tr>
<tr>
<td>2015</td>
<td>18923</td>
<td>172.45</td>
<td>33.87</td>
<td>7.35</td>
</tr>
<tr>
<td>2016</td>
<td>17493</td>
<td>164.24</td>
<td>35.29</td>
<td>7.03</td>
</tr>
<tr>
<td>2017</td>
<td>36639</td>
<td>167.25</td>
<td>35.02</td>
<td>7.11</td>
</tr>
</tbody>
</table>

### Results

Ruth Potopsingh, UTech, Jamaica.
GFEI Jamaica National Workshop
2018
Key Findings

Air Quality Diagnostic Study

Study conducted December 2017

Almost half of the monitoring stations in KMA recorded an annual average above 50 μg/m³, which is the national air quality standard for the one-year period.

- The annual PM$_{10}$ concentration that is recommended by WHO (20 μg/m³)
- All the monitoring stations in KMA would be below the standard that is recommended for public health.

(Centro Mario Molina Chile, 2018)
Policy Recommendations

- Revise and adopt National Vehicle Emissions Standards.
- Monitoring of vehicle emissions
- Improve fuel quality standards
- Incentivize more energy efficient vehicles
- Regulate age limit of used vehicle imports
- Fast track new technology use (EVs and Hybrids)
- Voluntary vehicle labeling schemes
- Improvements in road infrastructure and traffic management systems
- Build public awareness and capacity on new technologies, vehicle maintenance and climate change
Policy Recommendations

---

**Revise and adopt National Vehicle Emissions Standards.**

- **Status** - To be promulgated under the Road Traffic Act. This will repeal and replace the existing 1938 Act. The new Bill was passed in the House of Representatives Feb 6, 2018.
- Primary responsible agencies: NEPA & MTM

---

**Monitoring of vehicle emissions**

- **Status** - No systematic scheme in place to monitor tailpipe emissions. Limited monitoring by Island Traffic Authority (ITA) with Police.
- **Recommendation** - Introduce tailpipe emissions testing scheme on a phased basis.
- Primary responsible agencies: ITA & MTM

---

**Improve fuel quality standards**

- **Status** – Standards are in place through the Petroleum (Quality Control) Act (1990), regulations.
- **Ultra low sulphur diesel (15 ppm)**
- **Regular diesel fuel** - (5000 ppm)
- **Recommendation** - Reduce sulphur content in diesel fuels to meet international trends and future requirements.
- Primary responsible agencies: BSJ, MTM, OPM - Energy Portfolio, Industrial and Allied Products (ICAP) Committee

---

Ruth Potopsingh, UTech, Jamaica. GFEI Jamaica National Workshop 2018
### Policy Recommendations

<table>
<thead>
<tr>
<th>Incentivize more energy efficient vehicles</th>
<th>Regulate age limit of used vehicle imports</th>
<th>Fast track new technology use (EVs and Hybrids)</th>
</tr>
</thead>
</table>
| **Status** - No incentives for efficient vehicles. | **Status** - Age limit set for vehicle imports:  
- Motor cars – Five (5) years.  
- Light Commercial Vehicles unladen weight less than 3000 kg or 3 tones) - six (6) years.  
- Taxi fleets – Seven (7) years.  
**Recommendation** - Reduce age limit of imports to encourage newer vehicles, remove older inefficient and polluting vehicles from national stock  
**Primary responsible agencies:** MOFPS, Jamaica Customs & Trade Board | **Status** – some incentives for hybrid and electric vehicles  
**Existing aggregated duty**  
<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Individual</th>
<th>Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric vehicles</td>
<td>40%</td>
<td>46%</td>
</tr>
<tr>
<td>Hybrid</td>
<td>52%</td>
<td>58%</td>
</tr>
<tr>
<td>Motor vehicles (Gas)</td>
<td>54%-82%</td>
<td>46%-75%</td>
</tr>
<tr>
<td>Motor vehicles (Diesel)</td>
<td>40%-68%</td>
<td>46%-65%</td>
</tr>
</tbody>
</table>

**Source:** Jamaica Customs Agency  
https://www.jacustoms.gov.jm/contact-us-1

**Recommendations** - Provide improved fiscal incentives to propel the uptake of EVs and hybrid vehicles for example GCT exemptions on electric vehicles (16.5%).  
**Introduce electric vehicle/hybrid fleets for public transportation.**  
**Introduce EVs/Hybrids for up to 50% of Government owned vehicle fleets by 2022.**  
**Prepare workforce capable of maintaining and repairing EVs**  
**Primary responsible agencies:** MOFPS-Jamaica Customs Agency, Auto dealers

---

**Ruth Potopsingh, UTech, Jamaica. GFEI Jamaica National Workshop 2018**
## Policy Recommendations

### Voluntary vehicle labeling schemes

**Status** – no schemes in place.

**Recommendation** - Introduce vehicle efficiency labelling

Primary responsible agencies: BSJ, Auto dealers & Consumer Affairs Commission

### Build public awareness and capacity on new technologies, vehicle maintenance and climate change

**Status** – Vibrant climate change education initiatives in place, no direct link to transport sector.

**Recommendation**: create more targeted communication campaigns for road transport

Primary responsible agencies: MEGJC, JIS, MTM, Consumer Affairs Commission, OPM - Energy Portfolio & MOFPS

### Improvements in road infrastructure and traffic management systems

**Status** – Peak hours traffic congestion due to strained road infrastructure. Road improvements and upgrading of traffic management systems underway

**Recommendations** – incorporate smart traffic management systems

Primary responsible agencies: ITA, KSAC & MTM

---

Ruth Potopsingh, UTech, Jamaica. GFEI Jamaica National Workshop 2018
Next Steps

- Prepare draft policies and strategies towards more efficient vehicles and cleaner fuels
- Conduct cost benefit Analysis
- Prepare National Action Plan
- Launch GFEI- Jamaica website
Thank you