

Borneo Convention Centre Kuching, Sarawak, Malaysia

# Regional Policy Dialogue on Fuel Economy in Asia

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# Bangladesh



# **Transport Sector in Bangladesh**





- Car ownership (1000)
- : Bangladesh 1.8
  - Dhaka -15
- Motorcycle owner ship(1000) : Bangladesh 11.87

Source : BRTA 2017

# **Transport Sector in Bangladesh**







#### Source: BRTA 2017

CO2 emission in Transport sector

# **Transport Sector in Bangladesh**



Sector wise Consumption of petroleum from 2012 to 2017

**Transport Sector petroleum Consumsion (2016-17)** 13% 6% 8% 73% Diesel ■ Petrol ■ Octen ■ JetFuel

Source: BPC 2017

Developing Clean and Efficient Vehicle policy to reduce emissions and energy use from the road transport sector in Bangladesh.

# **Project Activities**

### 1. Conducted an inventory of newly registered vehicle (locally

### manufactured and/or imported new and second-hand)

Data from 2005 to 2017, following the GFEI (Global Fuel Economy Initiative) baseline methodology.

#### 2. Estimated the average auto fuel economy baseline and trends for

#### Bangladesh

For Light Duty Vehicle (LDV) (Car, Microbus, Jeep and Pickup)

### 3. Suggested Clean and efficient vehicle policy and development

Reviewed national legislation and policies, including taxation related to vehicle fuel economy issues and EVs; identified stakeholders and potential barriers

> Arranged workshop to present results and gather policy suggestions

# **Data Collection**

- Vehicle make and model
- Year of first registration
- Model production year
- Engine displacement
- Engine power
- Fuel type
- No of Cylinder
- Test cycle (NEDC, US EPA, JC08)

- Rated fuel economy (L/100km, and CO<sub>2</sub> emission, gCO<sub>2</sub>/km)
- Fuel economy and CO2 emission data were collected as per GFEI guideline. Mostly from relevant manufactures and other online published data

Car — Car













**Displacement range** ≥3001 2501-3000 2001-2500 1501-2000 1001-1500 ≤1000 No. of Jeep







#### **Displacement Range**

# **Findings Summary**

Dhaka has 193276 number of registered LDVs from the year 2005-2017

#### In car category

- comprises 74.77% of total LDVs
- 63 different models from 30 different companies
- 90% of those cars are from Toyota.
- 1001-1500 cc is the common displacement range

#### In Microbus category

- 2<sup>nd</sup> largest share in LDV
- 46 different makes where 14 of them are dominating
- 79.17% share comes from Toyota
- 1501-200 cc is the common displacement range

# Finding Summary

#### In Jeep category

- 3<sup>rd</sup> largest share in LDV
- 33 makes and 33 common models since 2005
- 37% Jeep is from Toyota
- 1501-2000 cc is the most common displacement range
- 20% are new Jeep

#### In Pickup category

- least share in LDV
- 34 makes since 2005 but only 12 models are common
- 2001-2500 is the dominating displacement range
- 30% new Pickup import which is the highest in LDV category

# Fuel Economy and CO<sub>2</sub> Emission in Bangladesh

| Year | <b>Fuel Economy</b> | <b>CO2 Emission</b> |
|------|---------------------|---------------------|
| 2005 | 8.98                | 217.33              |
| 2008 | 8.01                | 189.08              |
| 2010 | 7.04                | 165.9               |
| 2012 | 7.43                | 176.85              |
| 2014 | 7.5                 | 179.46              |
| 2015 | 7.07                | 171.19              |
| 2016 | 6.99                | 169.06              |
| 2017 | 6.9                 | 166.35              |

# Fuel Economy and CO<sub>2</sub> Emission in Bangladesh





# Fuel Economy and CO<sub>2</sub> Emission in Bangladesh

| Year     | Car  | Jeep | Microbus | Pickup |  |
|----------|------|------|----------|--------|--|
| <br>2014 | 5.85 | 9.59 | 8.56     | 9.76   |  |
| 2015     | 5.75 | 8.15 | 8.4      | 9.29   |  |
| 2016     | 5.81 | 7.37 | 8.39     | 9.5    |  |
| 2017     | 5.8  | 7.26 | 8.62     | 9.35   |  |



# Where Bangladesh Stands?

| Year | Non-OECD | Global  | Bangladesh |
|------|----------|---------|------------|
|      | Average  | Average | Average    |
| 2005 | 8.5      | 8.8     | 8.98       |
| 2008 | 8.5      | 8.3     | 8.01       |
| 2010 | 8.4      | 8.1     | 7.04       |
| 2012 | 8.2      | 7.8     | 7.43       |
| 2014 | 8        | 7.6     | 7.5        |
| 2015 | 7.9      | 7.6     | 7.07       |

# Summary of the Study

- I. From year 2005 to 2017, improvement in fuel economy was 23.16% and reduction in CO2 emission was 24.46%.
- II. In recent years car import has increased in the LDV category which is one of the main reasons for higher fuel economy value along with the advanced technology of the imported vehicles.
- III. Bangladesh has improved average fuel economy value compared with Non-OECD country average and global average. In the year 2015, non-OECD and global average fuel economy was 7.9 //100km and 7.61/100km where in it was 7.07 l/100km.
- IV. Not more 5 years old can be imported
- V. More Presence of lower CC vehicle





## Stakeholder Consultation meeting at BRTA

Stakeholder Consultation meeting with Auto mobile Club at BUET

# **Policies on Electric Vehicle**

- I. The government does not have any taxation policy for electric fourwheeled vehicles yet.
- II. BRTA also does not have any 'Type' classification for EV/ Hybrid.
- III. Therefore, current taxation policy is restricted to the two and threewheeled electric vehicles only.
- IV. Government recently promoting Hybrid Vehicle by giving tax incentive

## RECENT TAX INCENTIVE FOR EV/ HYBRID VEHICLE

| Electrical Vehicles                      | SD<br>%      | VAT<br>% | AIT<br>% | RD<br>% |
|--|--------------|----------|----------|---------|
| Electric Battery-operated 3-wheelers     | 20<br>(25)   | 15       | 5        | 4       |
| Electric Battery-operated 2-wheelers     | 20<br>(25)   | 15       | 5        | 4       |
| Hybrid Vehicles                          |              |          |          |         |
| Up to 1600 cc - Reconditioned and New    | 25<br>(45)   | 15       | 5        | 4       |
| 1601 to 2000 cc- Reconditioned and New   | 45<br>(100)  | 15       | 5        | 4       |
| 2001 to 3000 cc- Reconditioned and New   | 60<br>(200)  | 15       | 5        | 4       |
| 3001 to 4000 cc- Reconditioned and New   | 100<br>(350) | 15       | 5        | 4       |
| 4001 cc and above- Reconditioned and New | 300<br>(500) | 15       | 5        | 4       |

# E-Mobility in Bangladesh (Journey started in 2002)

- First import in 2002-2003
- Sales picked up from 2017 due to tax incentive and Recon Hybrid

#### Popular hybrid brand

Car: Toyota prius/AQUA, BMW (PHEV) SUV: Nessan X-Trialis ,Honda vesel Microbus: Toyota Esquiare

#### Issues with Hybrid Vehicle :

- Recon. Hybrid : Battery life
- Lack Maintenance facilities

## Sales of Hybrid Vehicle



Source : NBR 2017

# E-Mobility in Bangladesh (Journey started in 2007)









- 6 lac easy bike (1000-1200 watt)
- 5 lac auto rickshaw
- Price 1.5-1.75 lac
- Charging time : 6-8 hours (100-120 km)
- Battery (pb-acid), imported and locally made , Battery life only 1 year

### Issues with Easy bike:

- Comfortable for short distance travel
- Creation of new job/business
- No restriction on numbers
- Longer time for charging
- Battery disposal and recycle

## Action to promote E-Mobility in Bangladesh within 1 year

- Amend / modify existing regulation to facilitate EV / Hybrid vehicle registration
- Setting a target on EV/ Hybrid and formulate policy , regulations
- Government should install some charging station at some important location to show commitment for greener transport
- □ Initially E –vehicle for Dhaka and Chittagong with limited numbers
- Awareness campaign (price, range, battery ....)

## Action to promote E-Mobility in Bangladesh within 3 year

- Additional tax reduction of 25-30 % for vehicle less than 1600 cc
- Fiscal incentive and supportive policy measures for the import of Li-ion batteries or production locally.
- E taxi ( reduce tax for taxi)
- Charging stations on PPP basis at existing fuel/CNG stations
- Mandatory Procurement of large EV's fleet fully or at a certain ration by the government (BRTC and staff buses, specialized vehicles such as police cars, vehicles for utility services, and sedan cars/microbuses/SUVs for government officials)
- Government can give soft loan (dedicated fund) to operator buy E- bus

## Action to promote E-Mobility in Bangladesh within 5 year

- Renewable energy source for EV (solar/wind)
- Vehicle labelling sticker (fuel economy and co2 emission)
- CO<sub>2</sub>-based vehicle taxation system
- Incentive for local EV/Hybrid manufacturers







## THANK YOU.

## QUESTIONS/SUGGESTIONS?