



On behalf of:



Federal Ministry for the  
Environment, Nature Conservation,  
Building and Nuclear Safety

of the Federal Republic of Germany



# Viet Nam Low Carbon Bus NAMA

*CCAP Climate Finance Forum  
May 2016, Bonn, Germany*



Empowered lives.  
Resilient nations.

**Tran Anh Duong**

DG, Dept. of Environment

Ministry of Transport, Viet Nam

[duong\\_vr\\_ho@yahoo.com](mailto:duong_vr_ho@yahoo.com)

With input from Stefan Bakker and Anna  
Schreyögg, GIZ

Data and graphs: Jürg Grütter

Implemented by

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

# Background

- Viet Nam INDC: 8% emissions reduction compared to BAU by 2030, 25% with international support;
- 2010 GHG emissions: 225 MtCO<sub>2</sub>e, 32 Mt in transport, rapidly rising;
- Car ownership is low but increasing rapidly;
- Mitigation measure: switch from motorcycles (2W) to public transport;
- Transport Development Strategy: increase public transport modal share from <10% at present to 25-30% by 2020;
- Promotion of environmentally friendly, low carbon buses



# Barriers to mitigation

- High quality bus service requires operational subsidies and capital to purchase buses (financial barrier)
  - Direct financial support only for Hanoi and Ho Chi Minh City
- Severe competition from motorcycles, which provide convenient and accessible transport
- Hybrid (conventional and plug-in) buses are currently more expensive on a life-cycle basis (financial barrier)
- Perceived risk of new technology
- Vehicle efficiency measures (tyres, etc): financial and information barriers
- Lack of data and capacity at local level for integrated urban transport and land-use planning
- More national policies and financial and technical support are required

# Low carbon bus NAMA

## Sector-wide Low-carbon Bus NAMA (2016-2030)

**NAMA Support Project  
2016 - 2020**

Hanoi
Hue
Can Tho



# Components of the NAMA

## **Component 1: Low-carbon bus technologies**

By 2020: introduction of 200 hybrid and 50 plug-in hybrid buses

Incremental cost and (perceived) risk compared to conventional diesel is covered by climate finance

- Eg. 70% of new hybrid buses to be financed via a regular credit facility, 30% grant from low-carbon bus fund
- Detailed monitoring to establish proof of impact

Post-2020: pure incremental cost financing, by 2025 hybrids and plug-in hybrids will be cost effective, fully-electric buses still require subsidies

# Components of the NAMA (cont'd)

## Component 2: Operational efficiency improvements

Introduction of fuel efficiency measures in bus fleets and bus route optimisation in 3 pilot cities

By 2025 and 2030, 25% and 50% of the potential of the national public transport fleet will be harnessed

Financial and technical assistance to bus operators and cities

Measure	Fuel Savings and GHG Mitigation Impact
LRR Tires	3.5%
Optimal Tire Pressure	1.5%
Idling Stop Devices	2.5%
Eco Drive	2%
<b>Combined Measures</b>	<b>9%</b>

# Components of the NAMA (cont'd)

## **Component 3: Public transport system improvement**

Contribute to modal share increase by technical assistance for:

- Public transport planning
- Data and MRV/monitoring system for cities
- Integration of different modes of transport
- National policies that support cities

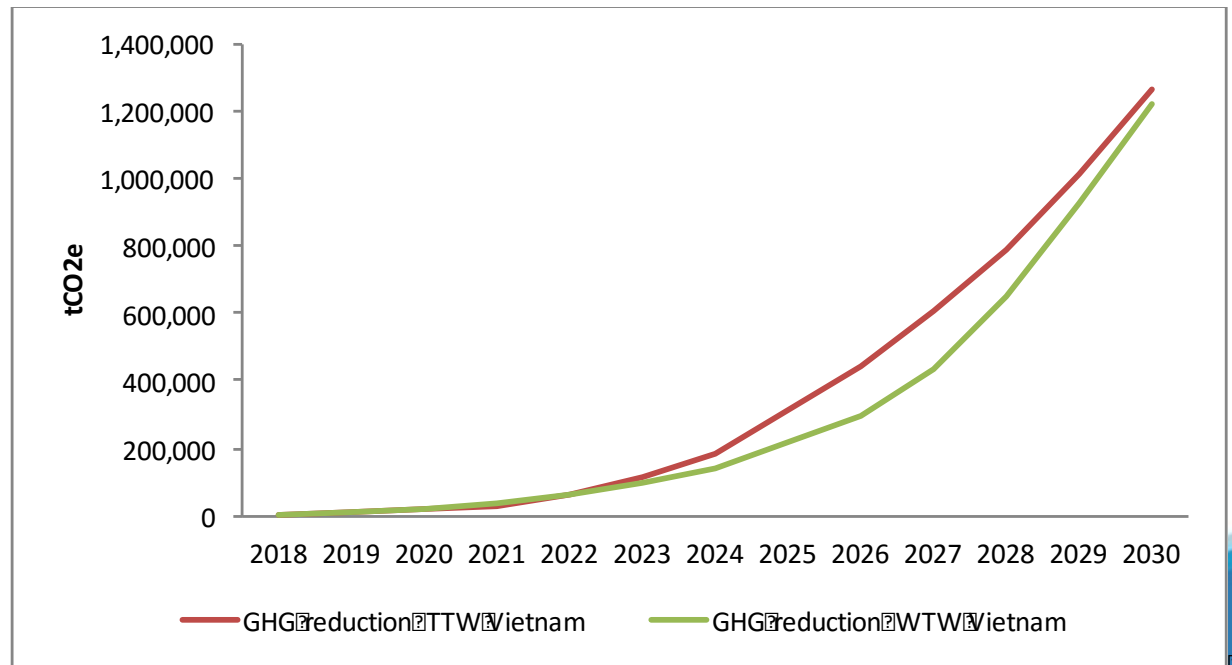
### **Key partners:**

Ministry of Transport, Ministry of Environment and Natural Resources,  
Departments of Transport in cities, bus operator companies

International partners: GIZ, UNDP, KfW

# Expected outcomes

- Total emission reductions: 4-5 MtCO<sub>2</sub>e in 2016-2030
- Diesel fuel savings: USD 600 million
- Air pollution reduction (PM, NOx): USD 40 million
- Quality of life improvement, noise reduction





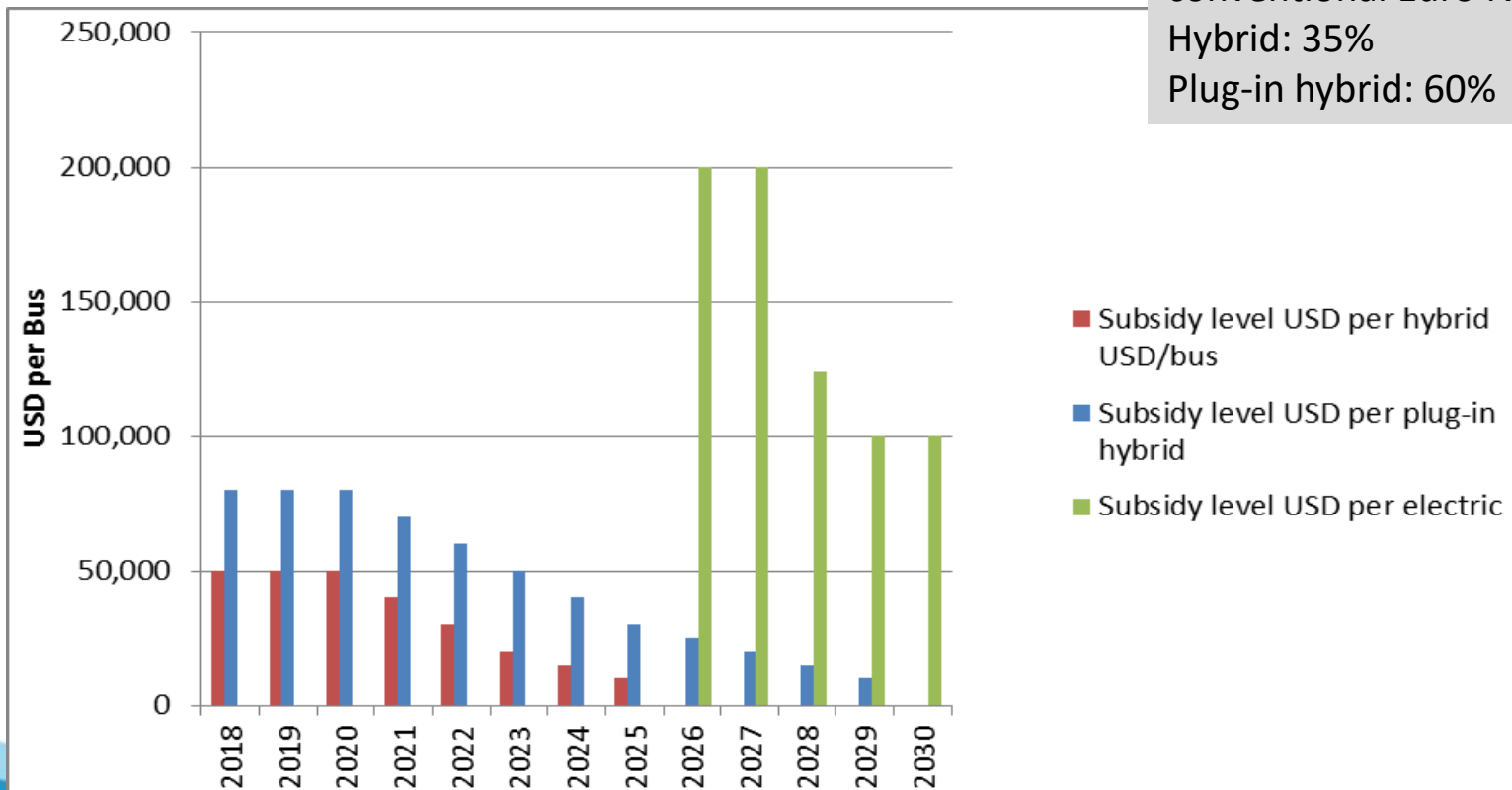
# Financing requirements for low carbon buses

Phase I: "Risk Finance" (2017-2020)

Phase IIa: "Incremental Cost Finance" (2021-2025)

Phase IIb: "Market-Based" (2026-2030)

Additional cost compared to conventional Euro IV diesel:  
Hybrid: 35%  
Plug-in hybrid: 60%



# Financing (cont'd)

2017 – 2020


- USD 15 million incentive fund provides full up-front differential costs for approx. 250 low carbon buses
  - USD 30 million credit finance and bus operators' own capital
- USD 5 million technical assistance

2021-2030 (21,700 buses)

- USD 326 million grant finance (eg. from Green Climate Fund and development banks)
- USD 3,700 million credit and own capital

Incremental cost (including full-electric buses): USD 70/tCO<sub>2</sub>e

# Conclusions

- Transport is a key sector for achieving sustainable development and climate change objectives
  - NAMA complies with national transport, energy and climate policies and has high SD benefits
  - Transformational due to rapid, large-scale technological change and public transport system improvement
  - Clean technologies require initial financial support, which declines over time when risk is reduced and fuel prices increase
  - Technical assistance is needed to improve policies, planning and monitoring
- 



On behalf of:



Federal Ministry for the  
Environment, Nature Conservation,  
Building and Nuclear Safety

of the Federal Republic of Germany

# THANK YOU

For comments or questions:

[duong\\_vr\\_ho@yahoo.com](mailto:duong_vr_ho@yahoo.com)

[anna.schreyoegg@giz.de](mailto:anna.schreyoegg@giz.de)

[sjabakker@gmail.com](mailto:sjabakker@gmail.com)



Bús in Ha Noi

(Photo: NAMA Project)

Implemented by

**giz**

Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH