

CLIMATE INVESTMENT FUNDS

CTF/TFC.8/CRP.4
November 4, 2011

Meeting of the CTF Trust Fund Committee
Washington, D.C.
November 4, 2011

PRESENTATION BY GOVERNMENT OF PHILIPPINES ON THE
PHILIPPINES CTF INVESTMENT PLAN

Clean Technology Fund Investment Plan for the Philippines

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Undersecretary, Department of Energy**

**CTF Trust Fund Committee Meeting
4 November 2011**

Outline

Philippines CTF Country Investment Plan

- Current Plan endorsed in December 2009
- Current priority and rationale for update

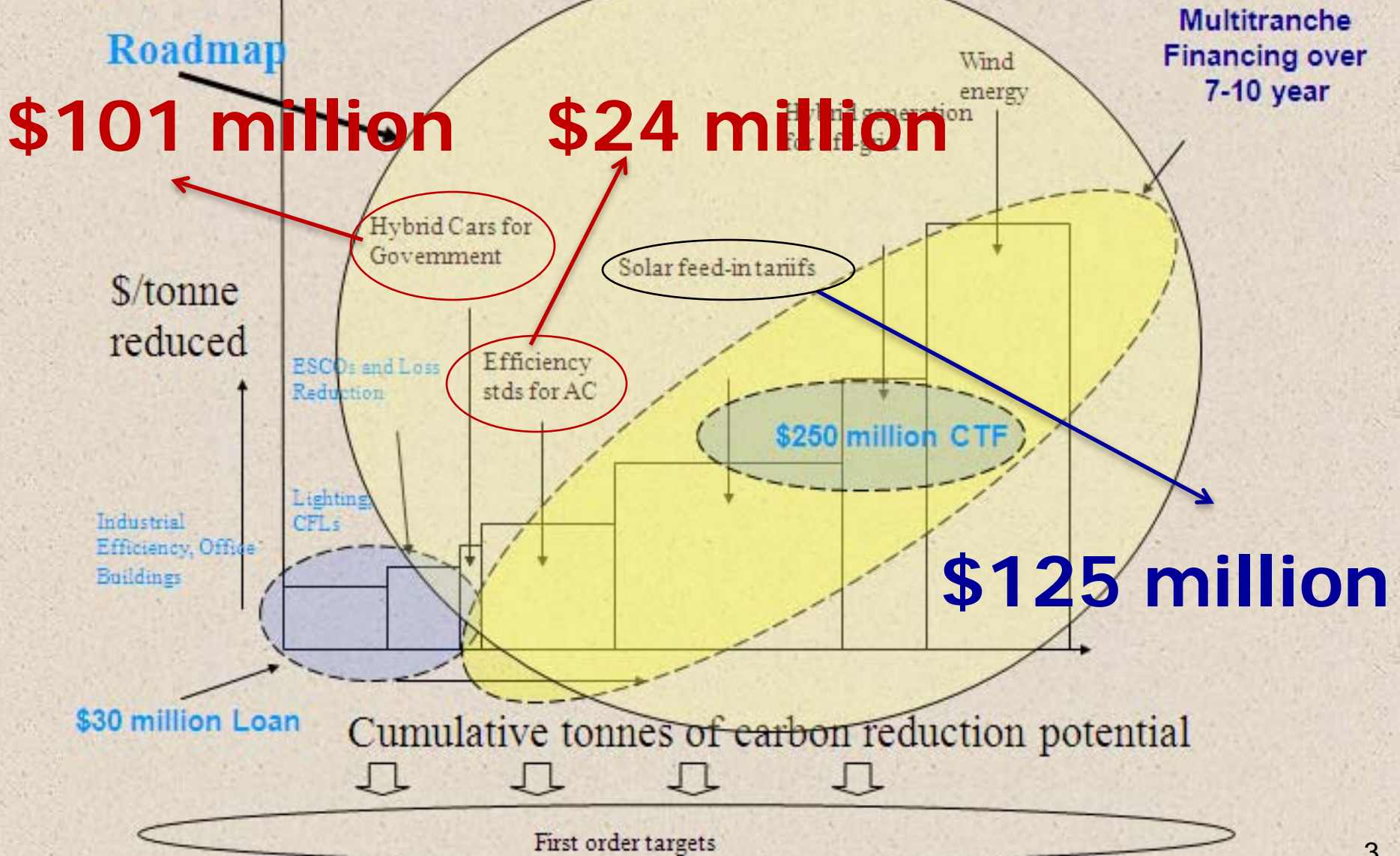
Proposed Revised Investment Plan

- Transformation through Energy Efficient Electric Vehicles
- Accelerated Introduction of Energy Efficient Appliances

CTF and Transformation

- Assessment of Proposed Changes

Investment Strategy: Philippine Investment Plan



Rationale for Proposed Change

Rationale **for investment** in Net Metering with RE (2009)

- 100 MW rooftop solar **to redefine the supply chain** for retail solar power
- **Low** private sector investment interest
- Feed-in Tariff and net metering options **were to be ready within 6 months**

Current Circumstances (2011)

- Feed-in Tariff and net metering options were **delayed**: may be implemented by 2012
- *Proposed* feed-in tariff has attracted **private investment commitment of about 800 MW of solar power capacity**

New Proposals

- (i) Successful pilot test of electric vehicles conducted with ADB support is ready for scale up – ADB Board approval anticipated in early 2012.
 - Attain energy security through fuel diversification
 - Reduce dependence on fossil fuels
 - Reduce greenhouse gas emissions
- (ii) EE appliances project in ADB country program for 2012
 - Reduce energy consumption
 - Minimum energy performance standards
 - Reduce greenhouse gas emissions



Metro Manila

200,000 tricycles

Philippines

3,500,000

Tricycles and motorcycles



10,000,000



tons of CO₂ annually



Pilot

(Electric Tricycles or e-Trikes)

20 e-Trikes

(Lithium-ion batteries)

10 Tricycles

- Price of e-Trike **\$1,000** more
- Full charge range **80-100 km**
- **6 kWh** battery (**A units**)



- **Overnight 8-hour charge** at home

10 Tricycles

- Full charge range **40-50 km**
- **3 kWh** battery (**B units**)
- Will use **public street charging**



- **Fast charging** in about 30 min

Range results

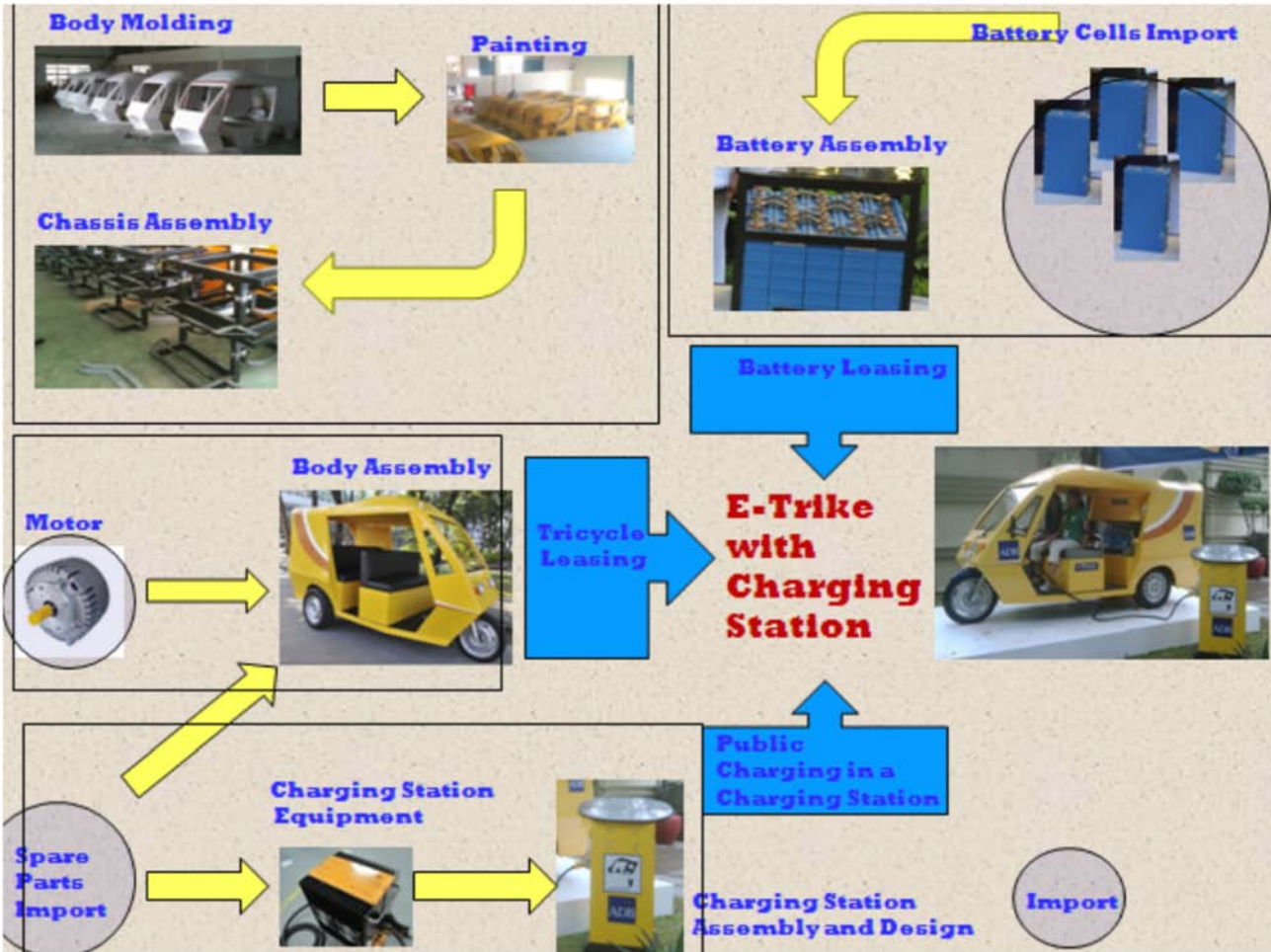
("Continuous" running)



Electric trikes to cut fuel costs and pollution



Transformation



project is **not**
about
procuring
100,000 e-Trikes

but

creating a
new local
industry and
local
employment

Transformation through Energy Efficient Electric Vehicle Systems – *delivering an end-to-end infrastructure solution*



100,000 electric tricycles

Cost **\$400.0 million**



Savings: **\$185 million** per year

(500,000 liters/ day → \$500,000 / day)

Avoided CO₂ emissions

• **400,000 tons** per year

**Electricity Demand
(peak-time charging)**

Demand: **6-60 MW** peak

Energy: **300,000 MWh**

Emissions: **160,000 tons**

Accelerated Introduction of **Energy Efficient Appliances**

- **200,000** /(4 million) **air-conditioners**,
- **150,000** /(6 million) **refrigerators**,
- **350,000** **fans**, and
- **100,000** /(4 million) **televisions**
- **26,700,000** facebook users (**computer monitors**)

a **36 months rent-to-own** scheme.

avoided energy consumption will be about **250 GWh**

and GHG reductions are estimated at **125,000 tCO₂e** per year.

Market Dynamics: Transition to LCD Television (without-project)

Annual Electricity Cost
\$100 to \$150

Old CRT Television

Power consumption: **200-250 Watt**,
Standby Consumption: > **5 Watt**



2 kg
Lead

Landfill

Annual Electricity Cost
\$50 to \$80

New LCD Television (65 cm)

Retail Price **\$400**



Technical Specification

•Power consumption: **70-150Watt**,
•Standby Consumption: **5 Watt**

An **uninformed**
consumer
buys
the **cheapest**
LCD TV

Proposed Transformation

Market Dynamics TV
(without-project)

Market Dynamics: Transition to LCD Television (after-project)

Annual Electricity Cost
\$100 to \$150

Old CRT Television

Power consumption: **200-250 Watt**,
Standby Consumption: > **5 Watt**



2 kg
Lead

Commercial
Recycling Center

Annual Electricity Cost
\$20 to \$40

New LCD Television (65 cm)

Retail Price **\$300**



Technical Specification

•Power consumption: **40-60 Watt**,
•Standby Consumption: **0.5-1.0 Watt**

An **informed**
consumer
buys
an **energy-
efficient**
LCD TV

Market Dynamics TV
(after-project)

Assessment of Proposed Changes

CTF Investment Criteria	Updated Investment Plan
Potential GHG reductions	<i>~ 5 times greater than the original investment plan, with greater replication and scale-up potential</i>
Cost-effectiveness	<i>CTF\$10 – \$19 / tCO₂e / year with replication & scale-up (vs. CTF \$125 / tCO₂e / year from net metering program)</i>
Demonstration Potential at Scale	<i>Transformation potential: > 20 for EE vehicles > 10 for EE appliances</i>
Development Impact	<i>New technology / systems and business models for EE vehicles and appliances Better benefits for energy security & environmental / public health</i>
Implementation Potential	<i>EE vehicle project – ADB Board approval & initial disbursements in 2012 EE appliances project – Board approval in late 2012</i>
Additional Cost and Risk Premium	<i>Additional capital costs and first-mover risks justify use of CTF (see draft CIP Update Appendices 1 and 2)</i>

Proposed Results Indicators

Indicator	Baseline	Expected Program Results
<p>Number of E-vehicles and support infrastructure in commercial operation</p>	<p>20 (with lithium ion batteries, post-pilot test) and about 200 using conventional lead acid batteries and less efficient motors.</p>	<p>15,000 e-trikes operating by 2013 and about 100,000 by 2016.</p> <p>Public charging infrastructure and battery leasing established.</p>
<p>Overall quality of appliances in the Philippines</p>	<p>Most commonly used 32 inch TV wattage is 70 Watt to 150 Watt</p>	<p>Benchmark Wattage established @ 40 Watt – 50 Watt.</p> <p>At least 50% of TV Wattage is below 60 Watt by 2015.</p> <p>[Similar benchmarks for Computer monitors, refrigerators, room air-conditioners and fans]</p>

Summary

- The Government and the People of the Philippines request endorsement of its proposed CIP Update
- *Pending endorsement:*
 - EE-vehicle project proposal to be submitted by mid-November
 - EE Appliances project preparation being done for completion in early 2012

Thank you!