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Project Number: 43207

# Philippines: Mitigation of Climate Change Through Increased Energy Efficiency and the Use of Clean Energy

## Detailed Response to NGO Request/Queries

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### 1. Project documents concerning the USD 101 million CTF loan and USD 300 million ADB loan for e-Trikes.

- The draft Board documents are being prepared for the revised ADB Board Date of 16 February 2012. A copy of e-Trikes feasibility study will be made publicly available after NEDA ICC Technical and Board Committee approves the Project.
- The updated Investment Plan for the Philippines submitted for consideration of the Trust Fund Committee for the Clean Technology Fund is attached as Attachment 2.
- Project also maintains two websites for disclosing information: <http://www.adb.org/etrike> and Facebook page ETrike Vehicle.

### 2. Conduct of the public consultation: where and with whom; list of participants; minutes of the consultations.

- As part of achieving project objectives, a local e-Trikes manufacturing and supply industry will be created targeting multiple levels of the value chain: e-Trikes assembly, lithium ion battery assembly, lithium ion battery leasing, charging station assembly, and overall leasing or banking operation. Communication strategies will include:
  - (i) Development of an e-Trikes website with information regarding the project and notification of opportunities to bid;
  - (ii) Use of a social media platform (such as Facebook and Twitter) to keep stakeholders informed of developments on a regular basis;
  - (iii) Informal industry meetings to answer questions throughout the process; and
  - (iv) More formal meetings to engage stakeholders, introduce potential partners, and maintain an open dialogue with the industry.
- Stakeholders including national and local government units have been widely consulted by the Project team. In addition, drivers were consulted in Mandaluyong and Boracay, two of the areas where the first units will be deployed. A summary of findings from discussions in Boracay is in Attachment 3.
- Beginning in July 2011, the ADB e-Trikes Project team began hosting informal industry meetings to foster communication and cooperation amongst industry players and to ensure local buy-in throughout the project preparatory process. To date, seven informal meetings have been held to encourage representatives of the local tricycle manufacturing community to ask questions about e-Trikes specifications, design and bidding processes, and to maintain open communication with the ADB team. Attachment 4 is a summary of the stakeholder consultation related activities undertaken to date. ADB will consult drivers and other stakeholders in each area before the Project will be implemented in that area.

**3. Design of the e-Trikes Project for example whether it is a replacement or addition to the existing one; waste management plan and its environmental mitigation; energy source for operation of each unit of the e-Trikes project.**

- The e-Trikes under the project will only replace existing units, and the currently operating 2-stroke tricycles will be the highest priority.
- In the case of the Philippines with a large share of renewable energy in the generation mix, the greenhouse gas reductions and overall end-use energy efficiency gains will be quite significant. The clean energy accounts for about 66% of power generation and about 39% of total primary energy. In addition the Government plans to establish solar charging stations wherever area and site access constraints do not exist, which will make the carbon footprint of these vehicles close to zero.

**4. Environmental safeguard requirements compliance by looking at the impacts of increasing demands of electricity; discharge plan of the old tricycles if it is about replacement and disposal management system for used batteries.**

- The Project is categorized as C for environment, involuntary resettlement and indigenous people. The e-Trikes will not generate any tail-pipe emissions and no engine noise, and overall it will have no adverse environmental impacts. ADB's publication on electric bikes<sup>1</sup> identified lead pollution as an inherent problem with electric vehicles and, as long as the electric bikes use lead acid batteries, the overall pollution rates will be several times higher than ICE tricycles. According to the United States government, Lithium-ion batteries are not an environmental hazard<sup>2</sup> and are safe<sup>3</sup> for disposal in the normal municipal waste stream. While other types of batteries include toxic metals such as cadmium, the metals in Lithium-ion batteries—cobalt, copper, nickel and iron—are considered safe for landfills or incinerators. The e-Trikes will use Lithium-ion batteries. Attachment 5 provides detail technical discussion on the risk of re-introducing Lead in the transport sector by using Lead Acid batteries.
- The disposal of tricycles to be replaced will be at the local government level. It will be spearheaded by the city or municipality concerned with the support of concerned national government agencies and other relevant stakeholders. The disposal program will be designed with some degree of permanence to make sure that it will function even beyond e-Trike project implementation. Monitoring mechanism will be put in place to check compliance with the program. Attachment 6 has further details.

**5. Social safeguard requirements compliance with regard to competition and loss of income among drivers who are not involved in the scheme; potential household indebtedness.**

- The Project will create additional local jobs for support activities and drivers will receive a higher daily take-home pay. The Project will not displace or negatively impact on the livelihood of tricycle drivers or families. Since fabrication and assembly could be largely

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<sup>1</sup> ADB. 2009. *Electric bikes in the PRC: Impact on the Environment and Prospects for Growth*. Manila.

<sup>2</sup> <http://www.ehso.com/ehshome/batteries.php>

<sup>3</sup> <http://www.epa.gov/osw/hazard/wastetypes/universal/batteries.htm>

domestic, the Project could create a net employment gain<sup>4</sup> of around 10,000 jobs by 2015.

- There will not be any loss of income of other drivers as the project will not introduce any new tricycles but will only replace existing units with a more energy efficient ones. With ADB's project, there will be public charging stations and Lithium-ion batteries for electric vehicles will be introduced in the country, so private sector businesses will be able to meet the demands of the e-Trikes outside the Project's boundary.
- ADB's earlier study found that in Davao, about 92% drivers were renters, and about 80% were married with about three dependents and 70% had secondary degree. In Boracay, about 40% drivers are owners. The fuel cost savings of P200 for every 100 km will greatly benefit the driver community and is the basis for the rent-to-own scheme. The health benefits of the e-Trikes will be significant for the population of the Philippines, especially children. A University of California study<sup>5</sup> indicated the value of the lower emissions of airborne pollutants.

**6. Social safeguard requirements compliance with regard to fair market competition that will challenged by the cheap funding provided by the project; ensuring that local e-Trikes manufacturers, local lending institutions would still be encouraged to participate (would not be crowded out from).**

- CTF will provide a catalytic role in reducing or eliminating first mover risk for fleet-scale projects, and foster accelerated replication and scale-up in the near term, which could be done by the private sector as the replication potential for e-Trikes alone is more than 20 to 1. A substantial learning curve has already been overcome during the pilot project and the proposed 100,000 e-Trikes will establish a technology credibility and transform the market enabling investment from private sector. The project will bring in new battery technology and charging infrastructure. Since ADB proposes to finance only about 100,000 tricycles out of a population of more than 3.5 million tricycles, it will create a large potential market for the local lenders. Local lending institutions and investors will be encouraged to take part at all levels.

**7. Gender Action Plan that shows that this e-Trikes project will bring benefit to women but not in the contrary will cause loss of income and livelihoods.**

- The current e-Trikes design has incorporated women's needs with better seating arrangements. Female passengers will be consulted on the design aspects of proposed e-Trikes models. For metro-Manila, during implementation, ADB women staff will be used as a focus group for the proposed design. As this is a replacement program, the scope for female drivers will be limited. ADB will target that at least 30% of charging station jobs be filled by women (only during day-time shifts). Female workers will also be trained to inspect the e-Trikes for basic safety issues (road-worthiness, for example) and collection of e-Trikes data on every charge.

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<sup>4</sup> Assuming a e-Trikes assembly requiring 30 person-day of labor.

<sup>5</sup> Electric Vehicles in the United States, A New Model with Forecasts to 2030: Center for Entrepreneurship & Technology(CET), Technical Brief, [http://cet.berkeley.edu/dl/CET\\_Technical%20Brief\\_EconomicModel2030\\_f.pdf](http://cet.berkeley.edu/dl/CET_Technical%20Brief_EconomicModel2030_f.pdf)