**Electric Tuk-Tuk Enhancement**

**Project Proposal**

**Client**: NLAS automotive

**Project**: Enhancement of Electric Tuk-Tuk

# Stage 1: Preparation and Planning

**Time**: 6 weeks

**Cost**: 750$

## 1. Project Overview

Project Objectives: Enhance the existing electric tuk-tuk for improved performance, sustainability, and compliance with regulations.

## 2. Enhancement Goals

Battery System Enhancement:

* Replace existing battery with 12v 60ah gel batteries (instead of 45ah).
* Increase range from 50km to 70/80km.
* Test & enhance solar system charging efficiency.

Chassis Design:

* Develop a new chassis with STEEL GRADE: IS 3074 with 3.5mm thickness for improved durability and safety.
* Incorporate ergonomic design for passenger and driver comfort.
* A new extended chassis for new front two wheels suspension.

Solar Panel Placement Enhancement:

* Optimize solar panel placement for with noise reducing, waterproof, and safety enhancing design.
* Increase solar panel surface area of 3.267 m2 (5 panels with 0.65 m2 area each).

## 3. Stage Tasks

|  |  |
| --- | --- |
| Task | Deliverables |
| Design new chassis | CAD design |
| Design & enhance the vehicle roof with the solar panel | CAD design |
| Find a manufactory for the chassis and solar roof | Quotations and contacts |
| Specify all vehicle components list | Excel sheet |
| Find provider for each component | Quotations and contacts |
| Fully check the battery requirement and solar charging | Electrical study |
| Start preparing for the license agreement | Official Lebanese answers |
| Documentation (Always UpToDate ) | Word file and Website |
| Weekly meeting  | Online/onsite weekly meeting  |

## 4. Stage Extra Cost

* Legal advisor fees: 150$

Fixed costs and payments:

Overall Fixed Price: 900$

Dead Line: 30/11/2023

Payments: first payment: 300$ - 1/11/2023 (Checking Project Results).

 Second payment: 600$ - 30/11/2023 (Project Dead Line with all results).

# Proposal sides and signature

Proposer: Eng Jihad Bachir Client: Dr. Samir Mourad (NLAS)

Contact: +961 76 522 852 Contact: +961 76 341 526

Signature: Signature: