

## Sparkle ID

SP21C000462

## Project Title

Semi Autonomous Electric Tillers Which Will Reduce Operation Cost By 10 Times With Home Charging.

## Category

Machine learning/ Artificial Intelligence for Automotive

## Sub Category

ML Based Diagnostics for EVs

## Abstract

Sand Bird is a Smart Agri-tech enterprise working on Eco friendly, Better ROI product for low income farmers. It currently works on smart electric power tillers as an alternate to conventional tillers which can improve the life of 5 lakhs farmers in 5 years. About Us: For rental agencies who own 3-4 tillers and farmers .....Who spend 50% and 16% of their total revenue respectively on operations , Sand Bird is a smart electric semi automated power tiller ....That offers 10x lower operational cost with minimum manual intervention Unlike conventional power tillers (Eg. VST, KAMCO etc.) ....which has, high rental cost, requires high maintenance and causes health hazards leading to low availability of drivers and low farm mechanization.

## Problem Statement

Rental agencies spend 50% of their revenue on operation of a conventional tillers due high fuel and driver expense with unpredictable maintenance. This makes the poor low-income farmers to pay 1/6th of their revenue just by renting an agricultural equipment (tractors & tillers). Imagine how could it be if you have to spend 1/6th of your revenue just for renting a car but that's the case with farmers. This makes them to fall in a debt trap (One out of every two farmers in India are in debt trap) and do you know agricultural equipment (tractors & tillers) are one of the main reasons for it.

## Solution

Now imagine how it could be if we offer a power tiller with 10x lower operational cost compared to the standard power tiller. That's what Sand Bird offers, smart electric technologies with which the farmer can sit at one part of farming land and operate the vehicle without the need of a driver. Sand Bird's Magma comes as an alternate to conventional tillers which offers 3x lower life time expense for rental agency and 25% lower rental cost for low income farmers.

## Innovation

We will be getting revenue of 7.5% for selling of each power tillers to the rental agency. Moreover, after a couple of years while they exchange the battery with a new one we will get a profit of Rs. 5000/- for an exchange of each battery. Value for rental agency and farmers: Wireless control system with which farmers can sit at one part of the farm land and operate the vehicle without any need of driver. Electric technologies which potentially brings down the operational cost by 10x the current operational cost. Remote tracking system with which rental agencies can look at the operations by sitting from at any part of the world. Intelligent pull back system with which the tiller can come out of the mud unlike the standard power tillers which need a huge man power to take that out.

## Technical Description

> Electrically powered with zero greenhouse emissions. > Wireless control system with a 2km range allowing flexible operation. > Surveillance camera with night vision and human detection sensors which can transmit data through cloud storage. > High runtime of 3 hours/single charge with swappable battery technology for high durability. > Attachment for ploughing, de-weeding, sowing and other operations can be attached.

## Keywords

Electric, Zero Running Cost, Wireless Control, Battery swappable technology, Surveillance Camera with GPS tracking.

## Patent Status

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