Sustainable Transportation Modes and Infrastructure

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SUSTAINABILITY

Introduction

This project aims to deliver reliable future transport services and infrastructure with high standard of customer service efficiently. It is suitable to be implemented in new or developing urban or residential areas.

Motivation

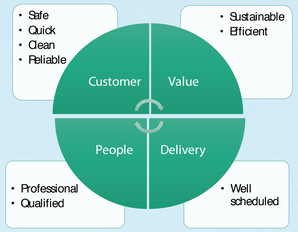
Energy saving
Bad weather condition
Overcome climate change problems
Improve society's health and wellbeing

Objectives

To provide easy access to public transport
To achieve less overall car usage
To have increased cycling and walking among residents
To promote eco-transport
To implement intelligent lighting system
To achieve increased use of renewable energy where car usage continues

Long-term Benefits

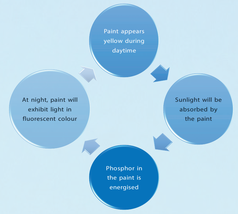
Strategy



Four components have been assessed to produce excellent strategy for a more sustainable transportation system and infrastructure.

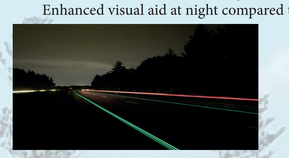
Implementation

GLOW-IN-THE-DARK ROADS



ADVANTAGES

Help drivers, cyclist and pedestrians to see way in bad weather
Back up light in case of road light malfunction
Excellent model of sustainability
Enhanced visual aid at night compared to white road markings



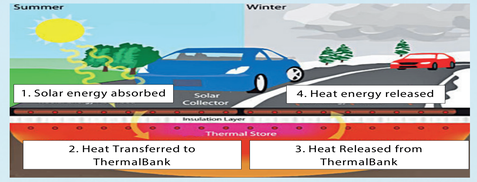
ROAD HEATING AND ICE-MELT ELEMENTS

AIMS

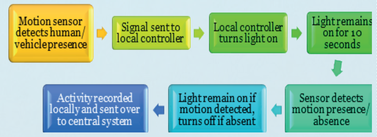
To prevent frost and thick snow on the road
Replicate heating wire systems like the ones in the rear window of a car
Recycle heat energy through water recycling

ADVANTAGES

Low carbon usage
Recycling of water
No grit salt needed
Saves lives and prevent accidents
Reuse of available heat and solar energy



INTELLIGENT ROAD LIGHTING SYSTEM

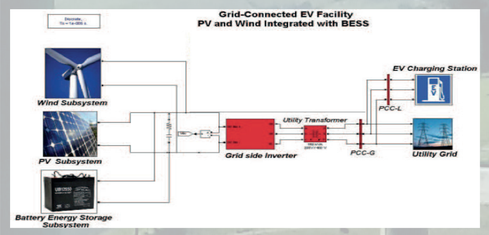


Implementation

PHOTOVOLTAIC-WIND CHARGING STATION

ADVANTAGES

Encourage the use of electric vehicles
Reduce CO_2 emissions
Reduce noise pollution



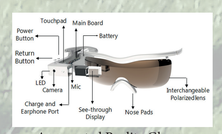
Integration of Solar PV and Wind Turbine in EV Charging Station

BICYCLE HIRE SYSTEM

ADVANTAGES

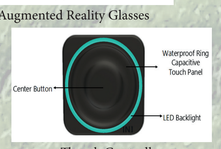
Solve last mile problem # Environmentally friendly # Alleviate traffic congestion

Solar Powered Stations



Augmented Reality Glasses

Changeable Accessories

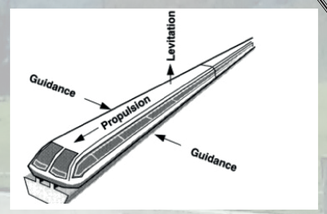


Thumb Controller

URBAN MAGLEV

ADVANTAGES

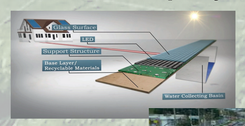
Promote efficient and commuter-friendly transport
Reduce journey time
Faster, cleaner, more sustainable
Durable, economical, quiet, low maintenance and lightweight



SOLAR POWERED BRT

ADVANTAGES

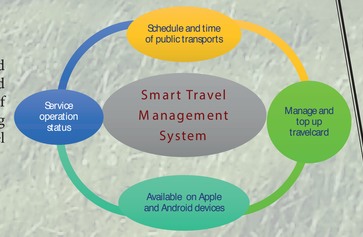
Optimise solar energy absorption
Enhance public bus usage
Save painting cost



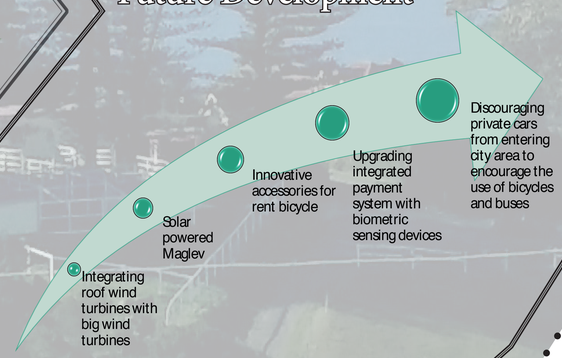
Payment System

Commuters should be allowed to pay using various methods that encourage paperless transactions.

Online system and app should be created to provide ease of topping up, checking service status and travel timetables.



Future Development



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Feedback & Brilliant Ideas