



PhD Proposal 3

**6*Design of the Educational AEV Charging Station
using Inductive Charging Equipment [11],
CAD, CAE, SimWise 4D and PMP Methods**



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Section F - a Reform in Life Style of the Residents in a Suburb to accommodate AEV Technology and benefit from it

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Introduction

According to the International Energy Agency, with seven million electric vehicles on the road worldwide, we would save 400,000 barrels of Crude Oil per day from now through to 2020 [12].

“All Electrical Vehicle [AEV] or **Flycar** is the most advanced type of Clean Energy vehicle. 27% of total worldwide energy is used by transport sector to produce 15% and 31% of the total man-made carbon dioxide and ozone forcing respectively” [5]. “The maximum range of affordable mass produced Electrical Cars [EV] would reach to over 300 miles by Ford Company in 2020” [9]. The maximum period of discharge for Flywheel Energy Storage System [FESS] has reached to 4 hours. “By 2021 there would be 16 more Flycar brands available in the market” [13]. Also wars in 6 oil producing countries such as Iran, Iraq, Kuwait, Libya, Syria, Saudi Arabia during the last 37 years have not resolved the disputes consumers and producers have had for the fair oil prices as yet. The crisis has proved globally dangerous, unsafe and unwanted by all global communities. This PhD Research aims to respond to the questions in this Proposal using CAD/CAE/FEA/PMP methods in Mechanical CAD Engineering context.

Scenario

The Scenario of my PhD Proposal 3 and the Question I am looking for in **Flycar** [AEV] Proposal are as follow:

Suburban Park Charging Station

Leeming Suburb Park Charging Station [FESS-PCS] includes a Flywheel Energy Storage System, which is installed in a cylindrical hole in the park lawn. The hole is concreted on its surface. Flywheel [FESS] is charged by Vertical Wind Turbines [VWT] installed on the ridge of the gable carports of residents in this suburb. Cables are connected between the wind generators [VWT] and the **FESS** in the park.

Flywheel Energy Storage System for the Vertical Wind Turbines/PV

Most **FESS-PCS** subscribers in Leeming have Solar Power [**PV**] on their roof and some of them have **VWT**. However all unused electric power generated by **VWT** and **PV** are transmitted by cables sitting on utility grid towers/posts in streets of Leeming to the **FESS-PCS**.

Garbage Truck

Garbage trucks [**GT**] come on Friday morning each week to collect rubbish from houses in this suburb. **GT** is of All Electric Vehicle [**AEV**] type and should be charged by **FESS-PCS** only.

MetroFly

All Subscribers to **FESS-PCS** in this suburb have a Green FESS Pass [**GFP**] card, which they can use to charge their **AEV** cars using the **FESS-PCS**. This suburb also has a MetroFly [**MF**] which is a small tram of **AEV** type. Residents use their **GFP** card to catch **MF** to the closest amenity such as train or bus, because **MF** only runs in the suburb within 1 km distance stops.

Lift Truck

Residents also use the Suburb Lift truck [**LT**], which is of **AEV** type. When the wind turbines installed on the 6-7 meters high ridge of their gable carports need maintenance, a **LT** is required, so the **VWT** technician can sit on the platform of **LT** with his gears, press the button and reaches to the 5 meters height of **VWT** and safely can stand or sit to fix the **VWT** problem or install/uninstall it to be sent to the Worksop for further maintenance. **LT** belongs to the shire and shire charges the residents to use its **LT** services [Government income].

Ambulance

The suburb has its own hospital and the hospital has an emergency clinic with an ambulance. The ambulance [**SA**] is of **AEV** type. Residents of this suburb are very much dependent on this ambulance for all heart attacks, baby deliveries in pregnancies, car accident injuries, faints, food poisoning, spider bites, etc. **SA** uses the **FESS-PCS** to be charged.

Child Care Bus

The suburb also has a Child care bus [CB] of **AEV** type, which is used as a public transport for children under 5 years old between resident's home and the Child Care Centre/Family Day Care in this suburb. **CB** also uses the **FESS-PCS** to be charged.

School Bus

The suburb has School Bus [SB], which is of **AEV** type. All school children [Primary and High School] use **SB** to go and come back to a school zoned only for them in Leeming. **SB** uses **FESS-PCS** for its charging.

Personal Carrier

Residents of this suburb also use Personal Carrier [PCA], which is of **AEV** type. Each resident charges her/his **PCA** at the **FESS-PCS** and then goes to the shopping centre, which is in this suburb to do shopping and carries her shopping in the **PCA** to her home in the suburb.

Question

Design an **Educational FESS-PCS** for electric charging needs of the Leeming residents, which passes competently [*****] the 6 core units in PMP [Scope, Risk, Time, Cost, Quality, ICT Management Techniques]. Use Proposal 1 [please type PA1 in search box of <http://ewindfly.shubayr.net> to click on link Proposal 1] which is 51 pages to find the answer for this question.

References

For the executive summary [1][5] and references [1-15] to information used in this brief Proposal please type **FC2** in search box of <http://ewindfly.shubayr.net> website to see links to videos, Slide show and websites used for writing this PhD Proposal. Also see Proposal 1 [by typing **PA1** in search box of [ewindfly](http://ewindfly.shubayr.net) website to see web page of Proposal 1] for the methods, significance of the Project FESS, all questions I am looking for their answers, and innovations in the FESS project.