

# Development of Foldable Micro Electric Vehicle

*K.R. Hwang<sup>1</sup>, and I.S. Suh<sup>2</sup>*

CCS Green Transportation Graduate School, KAIST, Daejeon, Korea  
P3 Digicar Division of Future Vehicles, KAIST, Daejeon, Korea

## INTRODUCTION

The vehicle population density within major cities has suddenly increased, making road transportation and CO<sub>2</sub> emissions management a much more difficult task. With the development of 'Fold-able micro Electric Vehicles', it will provide agility as well as lesser parking space in urban traffic conditions. Currently a prototype development of foldable electric vehicle is undergoing. The vehicle will provide similar functions like other foldable vehicles, but will provide the user the ability to remotely fold, park, and view any telemetry data of the vehicle through their smart device. The smart device also functions as an instrument panel. The vehicle will be developed to be a reliable, easy-to-use and eco-friendly electric vehicle, which will provide a new plan towards "car sharing".

## Theory

Figure 1 shows the layout of the components of the Foldable Micro Electric Vehicle in a general block diagram format. Since the research is still under progress, the diagram is still in its preliminary stage.

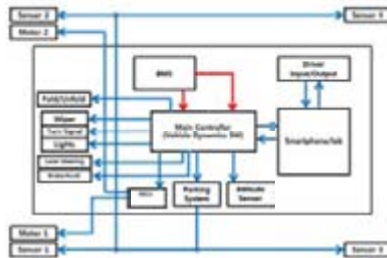


Figure 1 General Block Diagram of the Foldable Electric Vehicle

## Conclusion

As shown in Table 1, with the substitution of electric vehicles from conventional vehicles (including hybrids), it will dramatically reduce emissions. With its folding abilities, the vehicle size can be reduced to a smaller size than the micro vehicles that are in the market today.

Vehicle	MPG	CO <sub>2</sub> equiv. emitted (lb/mi)	CO <sub>2</sub> Reduction with FEV
Standard	22	1.14	93%
VW Golf TDI	37	0.72	89%
Toyota Prius	55	0.45	82%
<b>FEV</b>	62mi./charge	0.081	

Table 1 Greenhouse Gas Emission Reduction with FEV substitution (1)

## REFERENCES

1. J.D. Heinzemann, and B.M. Taylor, The Role of the Segway Personal Transporter (PT) in Emissions Reduction and Energy Efficiency, 2011