

## Future Plans

Ongoing research and development targets to come up with:

- Certification of the HET
- Commercial Hybrid Electric Train set units

This project aims to utilize and maximize the capabilities of local industries in the fields of metals and engineering enabling the country to generate its own technology to address its needs in the area of transportation.



# HYBRID ELECTRIC TRAIN

for more information, please write, fax, call, or email:



**DEPARTMENT OF SCIENCE AND TECHNOLOGY  
METALS INDUSTRY RESEARCH AND DEVELOPMENT CENTER**

MIRDC Compound, Gen. Santos Avenue, Bicutan, Taguig City, 1631 Metro Manila  
P.O. Box 2449 Makati, 1229 Metro Manila, Philippines  
Telephone Nos.: (632) 837-0431 to 38 (connecting all departments)  
Fax Nos.: (632) 837-0613 and 837-0479  
Website: <http://www.mirdc.dost.gov.ph>  
E-mail: [mirdc@mirdc.dost.gov.ph](mailto:mirdc@mirdc.dost.gov.ph)

P2016.06



**DEPARTMENT OF SCIENCE AND TECHNOLOGY  
METALS INDUSTRY RESEARCH AND DEVELOPMENT CENTER**



## Overview

At present, the Philippines faces a crisis in the transportation sector made evident by congested traffic resulting to wasted time and energy that directly impacts the development of the economy, and the welfare of the population.

The Metals Industry Research and Development Center (MIRDC), one of DOST's research and development institutes, embarked on a project that developed a five-coach prototype hybrid electric train (HET) set.

## Features

- Diesel-electric power system (Generator Set and Battery)
- Uses a regenerative braking system
- Wide automatic sliding doors
- Fully air-conditioned cabins
- Reliable and high-speed interconnection control system through CC-Link Open Network System
- Additional safety features: dead man's switch, speed control buttons on HMI, hardwired emergency switch

## Hybrid Electric Train Specifications Table:

TECHNICAL SPECIFICATIONS	HYBRID ELECTRIC TRAIN
Operational Speed (kph)	60
Capacity per coach (passenger)	220
Gross weight per coach (tons)	20
Coach Dimension	12m <sup>L</sup> x 2.85m <sup>W</sup> x 2.655m <sup>H</sup>
Battery (VDC)	650
Generator Set (kVa)	500
Number of Coaches	5
Maximum Track Grade	1.2%
Minimum Turning Radius (m)	50
Gear Ratio	1:4
Developmental Cost (million pesos)	120

