

Department of Science and Technology
 METALS INDUSTRY RESEARCH AND DEVELOPMENT CENTER
 LIST OF 2015 DISAGGREGATED GIA PROJECTS (ON-GOING)

Item No.	Title	Project Objectives	Beneficiaries	Duration	Implementing Division	Amount (PhP)	Status of Implementation (as of December 2015)
I. MACHINE BUILDING (INDUSTRIAL / SPECIAL PURPOSE EQUIPMENT)							
1	Development of 12-Hp Single Cylinder Diesel Engine	Design and develop a 12 hp single cylinder diesel engine for different applications	Metals and Engineering Industry	1 Jan 2014 to 31 Dec 2015	Prototyping Division	(2014-DGIA) 12,000,000.00 (2015-TL) 7,890,400.00 (TOTAL) 19,890,400.00	<ul style="list-style-type: none"> • Drawing and design of 12-Hp Single Cylinder diesel engine completed. • Casting of engine block, crankshaft, flywheel and camshaft are completed. • Machining of engine components and investment casting of aluminum components are on-going.
2	Development of Heavy Duty DC Inverter SMAW-GTAW Welding Machine	Localize heavy duty DC SMAW-GTAW Inverter welding machines for Small and Medium Enterprises (SMEs)	Metals and Engineering Industry (M&E), Small and Medium Enterprises (SMEs)	1 Jan 2014 to 31 Dec 2015	Prototyping Division	4,398,000.00	One (1) laboratory prototype and 7 field prototype units of SMAW-GTAW Welding Machine developed. Another proposal is to be prepared for a DC and AC SMAW-GTAW Inverter Welding Machine.
II. FACILITY UPGRADING (INNOVATION CENTER FOR MOTOR VEHICLE AND PARTS DEVELOPMENT)							
3	Establishment of a Finite Element Analysis (FEA) Design Center	Establish a FEA Design Center in support to the Customized Local Road Vehicles (CLRV) Industry.	Automotive and Parts Manufacturing Sector, M&E Industry	1 Jan 2013 to 31 Dec 2015	Prototyping Division	13,652,496.00	<ul style="list-style-type: none"> • FEA Design Center / Facility established in MIRDC. • New 3D scanner and printer, 64 core FEA supercomputer acquired. • Software packages with licenses to be used in finite element analysis acquired. (LS Dyna, LS Pre-post, ETA Presys-VPG, VXEelement, Geomagic DesignX). • Verification of FEA simulations by a Malaysian consultant is expected to be completed by Jan 2016.

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4	Establishment of a Die and Mold Solution Center in Support of the Components and Parts Manufacturing Industry	Enhance the competitiveness of the local tool and die sector in support of the automotive industry through the provision of facilities, technology and manpower development.	Automotive and Parts Manufacturing Sector, M&E Industry	1 Jan 2013 to 31 Dec 2015	Prototyping Division	(2013) 97,931,684.00 (2014) 100,000,000.00 (Total) 197,931,684.00	<ul style="list-style-type: none"> • Terminal report writing is on - going. • Memorandum of Agreement with DMG Mori Seiki Company Limited, , CNC Software Inc and Techline Machine Tools Inc. and Memorandum of Understanding with the University of Glasgow and Korea Association of Machine Industry (KOAMI) were established to complement the establishment of the Die and Mold Solution Center.
5	Revitalization of MIRDC's Testing Facility in Support of the Automotive Components and Parts Manufacturing Sector	Enhance the competitiveness of automotive parts and components manufacturers through the provision of an automotive parts testing facilities.	Automotive and Parts Manufacturing Sector, M&E Industry	1 Jan 2013 to 31 Dec 2015	Analysis and Testing Division	(2012) 81,535,820.00 (2013) 100,000,000.00 (TOTAL) 181,535,820.00	<ul style="list-style-type: none"> • Terminal report writing is on - going. • New/additional testing services for automotive parts and components (at par with the Thai Automotive Institute in terms of metal parts testing) now offered in MIRDC.

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III. FACILITY UPGRADING (SURFACE ENGINEERING)							
6	Testing with Training of Process Equipment for Food Processing Firms	Assess the compliance of prototype food processing equipment to quality and performance standards	Agricultural Sector, Food Manufacturers, M&E Industry (Fabricators)	1 Jan 2014 to 31 Dec 2015	Prototyping Division	2,000,000.00	<p>Sub-component I: A Complementary Baby Food Production Plant was developed that can produce around 720 kgs/day of instant baby food blend and can house a full complement of food processing equipment. Further tests are being conducted at the MIRDC to ensure the efficiency of the technology.</p> <p>Sub-component II: Improvement of the existing food processing equipment such as Continuous Type Vacuum Packaging Machine, Continuous Type Vacuum Fryer and Continuous Type Immersion Freezer was initiated which mainly focused on increasing their production rate.</p>
7	Capability Development and R&D on Electroplating of Various Non-Conductive Materials	Develop processes on surface finishing of various non-conductive materials	Metals and Engineering Industry, Surface Engineering / Electroplating Sector	1 Jan 2014 to 31 Dec 2015	Materials and Process Research Division	4,000,000.00	<ul style="list-style-type: none"> • Terminal Report writing is on-going. • Set-up of a plating facility for non-conductive materials • Parameters for the plating of non-conductive materials established. • MIRDC capability on plating of plastics and other non-conductive materials developed.

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8	Upgrading of Heat Treatment Facility	Build the Center's competence in heat treatment technology in support to the Surface Engineering Facility	M&E Industry, Heat Treatment Sector	1 Jan 2014 to 31 Dec 2015	Materials and Process Research Division	11,450,000.00	Refurbished one (1) vacuum furnace and completed the upgrading of the Heat Treatment Facility and Surface Engineering electrical system. Vacuum heat treating services are already offered to clientele.
9	Application of Pulse Techniques in the Surface Finishing of Metal Products.	Apply pulse techniques in the surface finishing of metal products that will upgrade the local surface finishing industry by providing good quality products and to achieve higher productivity.	Surface Finishing Industry	1 Jan 2013 to 30 Jun 2014	Materials and Process Research Division	4,187,131.66	<ul style="list-style-type: none"> • Terminal report writing is on - going. • MIRDC capability on pulse plating as a surface finishing service and parameters for applying pulse plating in the surface finishing of different metal products developed.
IV. ADVANCED TRANSPORTATION SYSTEMS (AUTOMATED GUIDEWAY TRANSIT - AGT)							
10	Study of Three (3) Potential Automated Guideway Transit System Routes	Come up with a detailed design, drawing and cost estimate of elevated test tracks, stations, maintenance depot, etc. of various identified routes by conducting preliminary/preparatory activities in relation to the development of a fully equipped and operation-ready AGT System.	Metals and Engineering Industry (M&E), Transportation Sector, Public	1 Jul 2013 to 31 Dec 2014	Materials and Process Research Division	4,900,000.00	<ul style="list-style-type: none"> • Terminal report writing is on - going. • Prepared and submitted Pre-Feasibility Study for each of the three identified routes: <ul style="list-style-type: none"> - Litex, Quezon City - Bicutan, Taguig City - UP Diliman
11	Simulation and Evaluation of AGT System Passenger Stations - Phase 2	Achieve an AGT system passenger station that is efficient in lay-out and has a well-organized operation through simulation and evaluation	Metals and Engineering Industry (M&E), Transportation Sector, Public	1 Jan 2014 to 31 Dec 2015	Materials and Process Research Division	15,135,000.00	<ul style="list-style-type: none"> • Terminal report writing is on - going. • Functional Safety Test Protocol approved. • Test and evaluation of AGT system mechanical, electronic/electrical components and safety features completed.

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12	Test and Evaluation of 120 Passenger Coach Capacity Automated Guideway Transit System - Phase 2	Promote the Automated Guide-way Transit System as safe, efficient, and technically viable mass transport system technologies in Bicutan, Taguig	Metals and Engineering Industry (M&E), Transportation Sector, Public	1 Jan 2014 to 31 Dec 2015	Materials and Process Research Division	19,260,000.00	<ul style="list-style-type: none"> • Terminal report writing is on - going. • Completed a total of 6,151 test runs at full load and 1,500 test runs at crush load (weight of 150 passenger capacity).

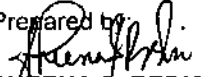
V. ADVANCED TRANSPORTATION SYSTEMS (HYBRID ELECTRIC ROAD TRAIN)

13	Prototype Development of a Five-Coach Centrally-Powered Hybrid Electric Road Train (CRT)	Develop a centrally powered prototype of hybrid electric road train for public transport by harnessing locally available technology geared towards addressing pressing national challenges on urban transport.	Metals and Engineering Industry (M&E), Transportation Sector, Public	1 Jan 2013 to 31 Dec 2014	Analysis and Testing Division	85,000,000.00	<ul style="list-style-type: none"> • Terminal report writing is on - going. • Five (5) - coach road train centrally powered CRT (65 persons per coach) and LCRT (40 persons per coach) developed.
14	Performance Testing of Five - Coach Centrally Powered Hybrid Electric Road Trains for Local Applications - Phase 2	Integrate, test and evaluate the performance of five-coach centrally powered hybrid electric road train that will serve as alternative mass transport for deployment to regular city roads in the country	Metals and Engineering Industry (M&E), Transportation Sector, Public	1 Jan 2014 to 31 Dec 2015	Analysis and Testing Division	(2014 DGIA) 13,366,292.87 (2015 TL) 3,535,000.00 (TOTAL) 16,901,292.88	<ul style="list-style-type: none"> • Terminal report writing is on - going. • Performance testing of CRT and LCRT completed for technology transfer in Cebu and Pampanga.

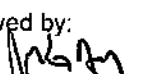
VI. ADVANCED TRANSPORTATION SYSTEMS (TRAINSET)

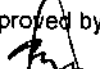
15	Development of Prototype Trainset	Design and fabricate 2 units of prototype trainset; 5 coaches each trainset. Develop a control system for the prototype trainset. Conduct a comprehensive material selection process for the local production of train parts.	Metals and Engineering Industry (M&E), Transportation Sector, Public	1 Jan 2013 to 30 Jun 2016	Materials and Process Research Division	(2013) 109,970,000.00 (2014) 16,300,000.00 (2015-TL) 19,885,000.00 (Total) 146,155,000.00	Design and developed one (1) unit five-coach prototype trainset with control system ready to be tested at the PNR railways from Tutuban to Alabang Station. Train parts are locally produced. Series of performance testing are being performed.
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VII. CAPABILITY BUILDING (TRAINING AND CONSULTANCY)							
16	Human Resource Intervention for Sustainable Growth and Competitiveness of the Metals and Engineering Sector: Development and Implementation of Appropriate Training Curriculum Design for CNC Machine Tool Programming and Operation	Develop and implement an effective training curriculum design to ensure that competent CNC programmers and operators are made available to meet the human resource requirements of the domestic metalworking firms	Metals and Engineering Industry	1 Sept 2012 to 31 Dec 2015	Technology Diffusion Division	(2012) 6,959,600.00 (2013) 47,049,788.00 (2014) 58,104,000.00 (Total) 112,113,388.00	<ul style="list-style-type: none"> • Terminal report writing is on - going. • <u>3-axis training program</u> • The project has produced a total of 893 graduates. The 20-day immersion phase of the training program were conducted in partnership with machining companies. • At least 516 graduates have been employed. • <u>5-axis training program</u> • For the more advanced 5-axis training, which has a 35-day duration, 30 graduates have been produced as of December 2015. • <u>Special 3-axis training program</u> • MIRDC conducted 5 batches of the 3-axis CNC training program with a 15-day duration that benefited 40 students from the Technological University of the Philippines (TUP), Polytechnic University of the Philippines (PUP) and the Taguig City University (TCU).
17	Capacity Building for Competitiveness of the Metals & Engineering Industry Cluster (CAIMTEC) of CAR for Localization of Industrial and High Precision Technology Parts	Raise the level of CAR MSE's to produce industrial and high-precision technology parts conforming to technology standards.	Micro, small and medium enterprise in the M&E Sector in CAR	1 Apr 2012 to 30 Mar 2015	Technology Diffusion Division	(2012) 11,589,490.00 (2013) 1,050,000.00 (TOTAL) 15,639,490.00	<ul style="list-style-type: none"> • Terminal report writing is on - going.

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