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Philippine Government Programs for the Automotive Manufacturing Industry

Profile of the Electric Vehicle Industry in the Philippines

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TABLE OF CONTENTS

Philippine Government Programs for the Automotive Manufacturing Industry*

I. INTRODUCTION

Though relatively small compared to other industries in the economy, the automotive manufacturing industry generates demand for the production of other industries, thus, making it a significant contributor to the country's economic output and employment.

The automotive manufacturing industry has two groups, namely, the automotive assembly and the manufacture of parts and components. The government introduced several national car programs because of the economic contribution and potential of the Philippine automotive manufacturing industry. These programs provide time-bound and output-based fiscal support to accelerate sound development, stimulate industry demand, attract new and strategic investments, and develop the country as a regional automotive manufacturing hub.

This paper presents the performance of the automotive manufacturing industry, past and current government programs, and pending legislation to support the same. This paper also discusses the policy interventions implemented by select member countries of the Association of Southeast Asian Nations (ASEAN) to support their local automotive manufacturing industry, which may serve as input to the country's policymakers in introducing reforms in its current national car programs and in crafting the necessary policies to support the industry.

II. PERFORMANCE OF THE PHILIPPINE AUTOMOTIVE MANUFACTURING INDUSTRY

Compared with its neighboring countries, the Philippines lags in motor vehicle production, which may be attributed to the low number of industry players in the country. Based on the preliminary results of the 2019 Annual Survey of Philippine Business and Industry– Manufacturing Sector by the Philippine Statistics Authority (PSA), there were only 41 establishments in the country engaged in the manufacture of motor vehicles, and 106 establishments engaged in the manufacture of motor vehicle parts and accessories.

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From 2012 to 2021, or for the last 10 years, motor vehicle production in the Philippines only averaged 92,632 units, the lowest among Thailand, Indonesia, Malaysia, and Vietnam. On the other hand, the average sales of motor vehicles in the Philippines for the same period was 286,663. Similar to other industries, the automotive industry was hit by the Coronavirus Disease 2019 or COVID-19 pandemic, thus, posting a notable decline in motor vehicle production and sales of 29.23% and 39.50% in 2020, respectively. Nevertheless, the industry is slowly regaining momentum with 24.59% and 19.97% growth in its recent annual production and sales, respectively. (See Tables 1 and 2.)

Table 1

Motor Vehicle Production of Selected ASEAN Member Countries, Calendar Years, CY 2012-2021

Year	Thailand	Indonesia	Malaysia	Vietnam	Philippines
2012	2,453,717	1,065,557	569,620	73,673	75,413
2013	2,457,057	1,208,211	601,407	93,630	79,169
2014	1,880,007	1,298,523	596,418	121,084	88,845
2015	1,913,002	1,098,780	614,664	171,753	98,768
2016	1,944,417	1,177,389	545,253	236,161	116,868
2017	1,988,823	1,216,615	499,639	195,937	141,252
2018	2,167,694	1,343,714	564,971	200,436	79,763
2019	2,013,710	1,286,848	571,632	176,203	95,094
2020	1,427,074	690,150	485,186	165,568	67,297
2021	1,685,705	1,121,967	481,651	163,271	83,846
Average	1,993,121	1,150,775	553,044	159,772	92,632

Note. Taken from the ASEAN Automotive Federation Statistics, 2012-2021.

Table 2

Motor Vehicle Sales of Selected ASEAN Member Countries, CY 2012-2021

Year	Thailand	Indonesia	Malaysia	Vietnam	Philippines
2012	1,436,335	1,116,212	627,753	80,453	156,654
2013	1,330,672	1,229,901	655,793	98,649	181,738
2014	881,832	1,208,019	666,465	133,588	234,747
2015	799,632	1,013,291	666,677	209,267	288,609
2016	768,788	1,061,735	580,124	270,820	359,572
2017	871,650	1,079,534	576,625	250,619	425,673
2018	1,041,739	1,151,291	598,714	288,683	357,410
2019	1,007,552	1,030,126	604,281	322,322	369,941
2020	792,146	532,027	522,573	296,634	223,793
2021	754,254	887,202	508,911	304,149	268,488
Average	968,460	1,030,934	600,792	225,518	286,663

Note. Taken from the ASEAN Automotive Federation Statistics, 2012-2021.

The Philippines has to rely on the importation of completely built-up (CBU)[1] motor vehicle units to supplement its local production.

Meanwhile, among the automotive companies in the Philippines, in terms of sales, Toyota still dominates the Philippine automotive industry, with a market share of 43.88%, selling 129,101 units in 2021. Mitsubishi placed second with a market share of 13.06% with 28,436 units sold in the same year. On the other hand, a new player in the Philippine automotive industry, Geely (a Chinese multinational automotive company), reported a significant growth of 182.85% in its sales, while Nissan and Hyundai recorded a decline in sales of 9.88% and 44.57%, respectively. (See Table 3.)

Table 3

Top 10 Automotive Companies in the Philippines in Terms of Car Sales, CYs 2020 and 2021

Year	2020	% Share	2021	% Market Share	Growth in units sold	Growth (%)
Toyota	99,545	40.11	129,101	43.93	29,556	29.69
Mitsubishi	37,366	15.06	37,548	12.78	182	0.49
Ford	14,775	5.95	20,005	6.81	5,230	35.39
Nissan	21,751	8.76	19,603	6.67	(2,148)	(9.88)
Suzuki	15,515	6.25	19,393	6.60	3,878	24.99
Isuzu	11,240	4.53	14,424	4.90	3,184	28.33
Honda	11,711	4.72	12,680	4.31	969	8.27
Hyundai	16,346	6.59	9,061	3.08	(7,285)	(44.57)
MG	3,432	1.38	6,343	2.16	2,911	84.82
Geely	2,158	0.87	6,104	2.07	3,946	182.85
Others	14,331	5.75	19,076	6.46	4,745	33.11
Total	248,171	100	294,223	100		

Note. Adopted from Autoindustriya 2021 Philippine Auto Sales Report[2]. Other automotive companies include Kia, Foton, Hino, Mazda, Hyundai, Fuso, BMW, Chevrolet, Subaru, Chrysler, Lexus, Mercedes-Benz, Volkswagen, Land Rover, Mahindra, Peugeot, Mini Cooper, Kaicene, Tata Motors, Ssangyong, JAC, Volvo, Baic, Man, Aston Martin, Ferrari, and McLaren.

Although the Philippines relies heavily on importing CBU motor vehicle units, it is also fair to mention that there is a high global demand for the country's production of automotive electronics and electric wiring harnesses for motor vehicles. (See Table 4.) In fact, the Philippines is the fourth largest exporter of wiring harnesses in the world (De Guzman, 2021). Further, electrical wiring harnesses for motor vehicles are among the top 10 exported products of the country and account for 3.16% of the total exported products, on average, from 2012 to

[1] Completely-built up unit refers to vehicles imported from other countries that are already fully assembled.

[2] Co, B. (2022, January 31). 2021 Philippine Auto Sales Report. AutoIndustriya.com. Retrieved May 24, 2022, from https://www.autoindustriya.com/features/2021-philippine-auto-sales-at-294-223-units-up-18-56.html

2021. While the value of exports of automotive electronics declined by 56.01% since 2012, electrical wiring harnesses increased by 60.63% after a decade.

Table 4

Value of Export of Automotive Electronics and Electrical Wiring Harness for Motor Vehicles CY 2012 – 2021, (in million US dollars)

Year	Automotive electronics	Electrical wiring harness for motor vehicles
2012	217.76	1,446.29
2013	545.01	1,731.05
2014	120.68	2,102.28
2015	112.16	2,091.04
2016	150.27	1,998.82
2017	94.77	2,051.16
2018	138.24	2,086.36
2019	163.81	2,346.67
2020	167.91	1,910.78
2021	95.80	2,323.19
Average	180.64	2,008.76

Note. Gathered from the Philippine Statistics Authority.

In terms of taxes paid, the automotive manufacturing industry significantly contributed to the government's revenue collections. Under the Philippine Standard Industrial Classification (PSIC) of 1994, the three major sub-sectors of the industry, namely: the manufacture of motor vehicles (PSIC 3410); the manufacture of bodies for motor vehicles and trailers (PSIC 3420); and the manufacture of parts, accessories for motor vehicles (PSIC 3430), paid a total of P144.35 billion of taxes[3], or an average of P18.04 billion annually, from 2012 to 2019. (See Table 5.) Of the said amount of taxes paid, 75.64% or P109.18 billion were collected from the manufacture of motor vehicles (PSIC 3410), 23.09% or P33.33 billion came from the manufacture of parts and accessories for motor vehicles (PSIC 3430), and 1.28% or P1.84 billion came from the manufacture of bodies for motor vehicles and trailers (PSIC 3420).

[3] Taxes paid include corporate income tax, capital gains tax, withholding taxes, excise tax, value-added tax, other percentage taxes, documentary stamp tax, and other taxes.

Table 5

Taxes Paid by the Automotive Manufacturing Industry, CY 2012 – 2019
(in million pesos)

Year	Manufacture of motor vehicles	Manufacture of bodies for motor vehicles, trailers	Manufacture of parts and accessories for motor vehicles	Total
2012	6,884	121	3,661	10,666
2013	9,521	166	3,509	13,196
2014	10,748	143	3,653	14,544
2015	14,061	233	3,865	18,159
2016	15,464	267	4,493	20,224
2017	17,571	284	5,106	22,960
2018	17,318	387	4,669	22,374
2019	17,613	240	4,372	22,225
Total	109,180	1,840	33,328	144,349
Average	13,648	230	4,166	18,044
% Share to total	75.64	1.28	23.09	100.00

Notes. Gathered from the Bureau of Internal Revenue.
Data for CYs 2020 and 2021 are not yet available.

III. GOVERNMENT PROGRAMS FOR THE PHILIPPINE AUTOMOTIVE MANUFACTURING INDUSTRY

The Board of Investments (BOI) is empowered under Executive Order (EO) No. 226, s. 1987[4] to formulate and implement rationalization programs for certain industries in the country. Given the significance of the automotive manufacturing industry, the BOI institutionalized the Progressive Car Manufacturing Program (PCMP), Progressive Truck Manufacturing Program (PTMP), and Progressive Motorcycle Manufacturing Program (PMMP) to provide a comprehensive industrial policy and development direction to the Philippine automotive industry. Specifically, these programs aim to (1) realize a measure of dollar savings for the country through domestic manufacture of automotive parts; (2) create manufacturing activities for various existing small to medium-sized enterprises for the domestic manufacture of automotive components and, in the process, upgrade the engineering and production skills and provide new technological know-how to the domestic manufacturing industry; and (3) generate new exports for manufactured products[5].

In support of these programs, former President Ferdinand E. Marcos directed all departments, bureaus, offices, and agencies of the government, including government-owned

[4] Entitled, "The Omnibus Investments Code", (July 16, 1987).

[5] Executive Order No. 906, s. 1983, entitled, "Directing the Review of the Progressive Car Manufacturing Program (PCMP)", (August 4, 1983).

and/or -controlled corporations, to purchase their car requirements from the following list of vehicle models participating in the PCMP[6]:

Table 6

List of Registered Car Models under the PCMP

Company	Registered car model under PCMP
1) Chrysler-Mitsubishi	Minica Car Minica Van Dodge Colt (4 door) Dodge Colt (2 door)
2) Delta Motors Corporation	Corona Sedan RT 81 LKS Corona Sedan RT 87 LVK
3) DMG, Inc.	Volkswagen 1300 Sakbayan 817
4) Ford	Cortina 1300 cc Cortina 1600 cc Escort 1100 cc Escort 1300 cc
5) GM-Yutivo-Francisco	Torana 1900

In 1983, the BOI was directed to review and revise the programs for the automotive industry to attain an economic balance considering technology development, increased domestic manufacturing activities, foreign exchange savings, and reasonable consumer prices. As a result of the review, the BOI instituted in 1987, the Car Development Program[7] (CDP), Commercial Vehicle Development Program[8] (CVDP), and Motorcycle Development Program[9] (MDP), collectively known as the Motor Vehicle Development Program (MVDP), to replace the PCMP, PTMP, and PMMP. Thereafter, Presidential Memorandum Order (PMO) No. 346,

[6] Memorandum Circular No. 651, entitled, "Providing a List of Vehicle Models Authorized for Assembly by Firms Participating Under the Progressive Car Manufacturing Program for Guidance of All Concerned", (July 25, 1973).

[7] Institutionalized through the issuance of PMO No. 136 s. 1987 entitled "Approving and Promulgating the Guidelines on the Car Development Program Replacing the Progressive Car Manufacturing Program", (December 1, 1987).

[8] Institutionalized through the issuance of PMO No. 157 s. 1988 entitled "Approving the Guidelines on the Commercial Vehicle Development Program Replacing the Progressive Truck Manufacturing Program", (February 9, 1988).

[9] Institutionalized through the issuance of PMO No. 160, s. 1988 entitled, "Approving the Guidelines on the Motorcycle Development Program Replacing the Progressive Motorcycle Manufacturing Program", (February 29, 1988).

s. 1996[10] and PMO 473, s. 1998[11] were issued to approve and promulgate the revised CDP, CVDP, and MDP guidelines.

With the continuing trade liberalization and the rapidly changing competitive environment in the ASEAN Region, the MVDP was recalibrated with the issuance of EO 156, s. 2002[12] and EO 877-A, s. 2010.[13] The recalibrated MVDP covers the manufacture and assembly of passenger cars, commercial vehicles, motorcycles, and other vehicle assemblies. Participants of the MVDP are entitled to the following:

a. Availment of tariff rates for knocked-down parts and components for assembly under the MVDP tariff lines of the Philippine Customs Code;

b. Listing of motor vehicle assembly and/or manufacture of parts and components manufactured in the annual Investments Priorities Plan (IPP) for five years; and

c. Other privileges and benefits as may be allowed.

The MVDP is still effective and implemented alongside another government program supporting the automotive manufacturing industry – the Comprehensive Automotive Resurgence Strategy (CARS) Program.

IV. INSTITUTIONALIZATION OF THE CARS PROGRAM

Officially launched in 2015 through EO 182, s. 2015,[14] the CARS Program was expected to generate P27 billion in investments, create 200,000 employment, manufacture 600,000 motor vehicles, and contribute P300 billion to the domestic economy. Accordingly, the program was estimated to generate government revenues of P408 billion in import duties, value-added tax (VAT), excise tax, income tax, and withholding taxes. Further, the implementation of the CARS Program is expected to benefit the chemicals, metal working, tool and die, plastics, electronics, rubber, glass, and textile sectors due to its strong backward linkages.[15] The BOI is the lead implementing and coordinating agency of the CARS Program.

[10] Entitled, "Amending the Guidelines on the Card Development Program (CDP), the Commercial Vehicle Development Program (CVDP), and the Motorcycle Development Program (MDP)", (February 26, 1996).

[11] Entitled, "Providing Amendments to MO 346 "Amending the Guidelines on the Car Development Program, the Commercial Vehicle Development Program, and the Motorcycle Development Program", (April 8, 1998).

[12] Entitled, "Providing for a Comprehensive Industrial Policy and Directions for the Motor Vehicle Development Program and Its Implementing Guidelines", (December 12, 2002).

[13] Entitled, "The Comprehensive Motor Vehicle Development Program", (June 3, 2010).

[14] Entitled, "Providing for a Comprehensive Automotive Resurgence Strategy Program", (May 29, 2015).

[15] Board of Investments. (2020, February). *Revolutionizing Philippine Industries, Attracting the Highest Strategic Investments*. https://boi.gov.ph/ufaqs/annual-report-2018/

A. Thrust of the CARS Program

The CARS Program was adopted to attract new investments, stimulate demand, effectively implement industry regulations to revitalize the Philippine automotive industry, and develop the country as a regional automotive manufacturing hub. It was also meant to augment and enhance policy and directions of existing motor vehicle development programs towards ensuring a resurgent automotive industry that supports innovation, technology transfer, environmental protection, and small and medium enterprises development. Further, the Program is perceived to support the country's automotive industry in seizing market opportunities the ASEAN Economic Community opened and deepening its participation in the regional supply chain.

B. Scope of the CARS Program

The participants of the CARS Program are limited to the manufacture of three models of four-wheeled motor vehicles and will cover the following activities: (a) production of the enrolled models; (b) manufacture of body shell assembly and large plastic assemblies of the model; (c) manufacture of common parts and strategic parts not currently produced in the country at original equipment manufacturer (OEM) standards of the model/s; and (d) shared testing facility for vehicles and/or parts.

EO 182, s. 2015 prescribes the minimum qualifications that must be met by the car makers, parts makers, and shared testing facility proponents to qualify for the CARS Program. For participating car makers (PCM), the minimum qualifications are as follows: (a) it must be an internationally-recognized car maker/brand owner and/or its authorized in-country licensed manufacturer acting jointly with an internationally-recognized carmaker/brand owner; (b) with a proven global track record; and (c) have existing multinational operations. On the other hand, a parts maker must meet the following: (a) it must be endorsed by the PCM to manufacture parts of its enrolled model; (b) the OEM automotive parts maker and/or its authorized in-country licensed manufacturer is acting jointly with internationally-recognized car maker/brand owner; (c) with a proven track record; and (d) a member of good standing of the Philippine Parts Maker Association. For shared testing facility proponents, it must be collectively endorsed by the PCMs and have a proven track record.

C. Fiscal Support for Registered Participants Under the CARS Program

One of the unique features of EO 182, s. 2015 is the substantial government support for the program. Section 10 thereof provides registered participants with the following fiscal support for a maximum period of six years: (a) Fixed Investment Support (FIS); and (b) Production Volume Incentive (PVI). The FIS is meant for investors who will manufacture parts, establish a shared testing facility, deliver parts within a prescribed period set by the BOI, and introduce an enrolled model to the market using the parts manufactured under the program. The PVI, on the other hand, sets the production volume

for parts and vehicles.[16]

The FIS covers capital expenditure (CapEx) for tooling and equipment and training costs for the initial start-up operation. The CapEx to be given the FIS shall be used primarily to support the production of the enrolled models. The FIS allocation is as follows:

a. For manufacturing of body shell assembly and large plastic parts, a minimum of 12.5% and a maximum of 30% of the model life budget (MLB);

b. For common parts and shared testing facility, a maximum of 5% of the MLB; and

c. For manufacturing of strategic parts, a minimum of 5% and a maximum of 22.5% of the MLB.

The FIS entitlements for any project in the above categories shall in no case exceed 40% of the total CapEx in the investment project.

The PVI, on the other hand, will be granted based on production volume and logistics efficiency. The following criteria should be observed to be eligible for PVI:

a. Manufacture of at least 50% of the assembly by weight in the case of body shell assembly;

b. Manufacture of major components of the assemblies in the case of large plastic parts assemblies;

c. Exceed 100,000 units in production volume; and

d. Attainment of other conditions imposed by the BOI at the time of registration.

The aforementioned forms of fiscal support for registered and eligible participants shall be evidenced by a non-transferable Tax Payment Certificate (TPC) under the participant's name. The PCM has to request the Department of Trade and Industry (DTI)-BOI to issue the TPC based on statutory deadlines for the payment of tax and/or duty. The request shall include details of the PCM's FIS and PVI entitlements, as well as the liabilities to which the TPC shall be applied. TPCs are valid for 30 days, counted from the date of issue, and can only be used once. While they can partially or wholly defray the excise tax, income tax, import duties, and VAT payable to the national government, the TPCs do not cover any type of withholding taxes. Thereafter, the Bureau of the Treasury (BTr) will recognize and record the TPC transactions as revenue collections of the Bureau of Internal Revenue or the Bureau of Customs. Corollary, the TPC transactions will also be recorded by the BTr as an expense.

[16] Pillas et al. (June 2, 2015). *Two incentive schemes available under CARS.* Retrieved on June 23, 2022, from: http://www.businessmirror.com.ph/two-incentive-schemes-available-under-cars/

Section 11 of EO 182, s. 2015 also mandates the Department of Budget and Management (DBM), in coordination with the BOI, to establish an Automotive Development Fund (ADF) in the annual General Appropriations Act (GAA) to fund the fiscal support granted to registered and eligible participants of the CARS Program. The fiscal support for the participants will be charged to the ADF. Under the same EO, the fiscal support for the CARS Program will be given beginning in 2016, but the total amount of fiscal support should not exceed P27 billion during the six-year life and shall be allocated as follows:

a. Forty percent for FIS, provided that in cases of Parts and Shared Testing Facility, the FIS shall not exceed 40% of the CapEx for tooling and equipment to manufacture the parts, including training costs for the initial start-up operation for the use thereof; and

b. Sixty percent for PVI.

Further, EO 182, s. 2015 also provides that the fiscal support for each enrolled model qualified under the CARS Program shall not exceed P9 billion. Section 14 of the said issuance likewise restricts registered participants of the CARS Program from registering their activity under any other program granting incentives.

D. Developments of the CARS Program

Since the issuance of EO 182, s. 2015, a total of P1.6 billion and P77.67 million budgets were proposed through the National Expenditure Program (NEP) and appropriated in the annual GAA for the CARS program. The said amounts, totaling P1.77 billion, account only for 6.55% of the fiscal support, amounting to P27 billion under EO 182, s. 2015. (See Table 7.)

Table 7

Budget Allocation for the CARS Program Under the NEP and GAA, CY 2016-2022 (in pesos)

Year	Under NEP	Under GAA	Total
2016	10,755,000	-	10,755,000
2017	9,937,000	9,937,000	19,874,000
2018	1,635,957,000	33,957,000	1,669,914,000
2019	9,048,000	9,048,000	18,096,000
2020	8,186,000	8,186,000	16,372,000
2021	8,273,000	8,273,000	16,546,000
2022	8,273,000	8,273,000	16,546,000
Total	1,690,429,000	77,674,000	1,768,103,000

Note. Taken from the DBM.

Presently, two companies, namely, Toyota Motor Philippines Corporation and Mitsubishi Motors Philippines Corporation, are registered as PCM under the CARS Program. Mitsubishi is committed to producing 200,000 units of the Mirage/Mirage G4 model, while Toyota applied for the production of 230,000 units of the all-new Vios model.[17] As of December 2021, Mitsubishi manufactured 55,330 units or 28% of the total number of units it committed. On the other hand, Toyota manufactured 107,652 units, or 47% of its total commitment. The activities of these PCMs have resulted in employment generation of 108,096 and foreign exchange (forex) savings of USD 837 million. The government has also generated revenue in the form of taxes, amounting to PhP8.07 billion. In terms of incentives eligibility, the FIS due to the participants under the CARS Program amounted to PhP3.0 billion, of which, PhP1.40 billion is due to Mitsubishi, and PhP1.60 billion to Toyota. Comparing these figures with the projected production, revenue, and investment, it can be said that the CARS Program has not yet met its targets. (See Table 8.)

Table 8

Status of Enrolled Models as of December 2021

Particulars	Enrolled model		Total
	Mitsubishi Mirage	Toyota Vios	
Investments	PhP3.91 billion	PhP5.35 billion	PhP9.26 billion
Date of registration	June 10, 2016	June 27, 2016	-
Start of production	February 2018	July 2018	-
Committed production	200,000	230,000	430,000
Production	55,330	107,652	162,982
Employment generation	35,560	72,536	108,096
Forex savings	USD277 million	USD560 million	USD837 million
Government revenue	PhP3.55 billion	PhP4.52 billion	PhP8.07 billion
Incentives eligible	PhP1.40 billion	PhP1.60 billion	PhP3.00 billion

Note. Taken from the BOI.

Mitsubishi and Toyota have until 2023 to meet their production commitments. However, acknowledging the ravaging effects of the pandemic-induced lockdowns, the DTI is eyeing the extension of the CARS Program for three years.[18]

[17] Department of Budget and Management (n.d.), CARS Program Briefer.

[18] Philippine Star. (December 31, 2021). *Decision on CARS extension likely out in Q1*. Retrieved from: https://www.philstar.com/business/2021/12/31/2150962/decision-cars-extension-likely-out-q1

E. Pending Bill for Motor Vehicle Development Program

Relatedly, a pending bill before the House of Representatives provides a policy program for the motor vehicle industry. The Unnumbered House Bill (UHB),[19] in substitution for HB 1833 (Annex A), aims to develop a comprehensive policy that will accelerate the sound development of the Philippine motor vehicle manufacturing industry, thereby contributing to industrial capital formation, technology transfer, technical skills development, and employment generation.

The bill proposes to declare the Philippine motor vehicle manufacturing industry, which includes the (1) manufacture of motor vehicles (PSIC 2910); (2) manufacture of motor vehicles (PSIC 2920); (3) manufacture of motorcycles (PSIC 3091); and (4) manufacture of parts and accessories of motor vehicles (PSIC 2930), as a priority investment sector that will regularly form part of the country's IPP. As such, all entities duly accredited by the DTI through the BOI shall be entitled to all the incentives provided under Republic Act (RA) No. 11534[20], otherwise known as the "Corporate Recovery and Tax Incentives for Enterprises (CREATE) Act", which includes the following:

a. Income tax holiday (ITH) for four to seven years;

b. Special corporate income tax of 5% on gross income earned, in lieu of all national and local taxes for 10 years for export enterprises only;

c. Enhanced deductions for 10 years for export enterprises and five years for domestic market enterprises;

d. Customs duty exemption on importation of capital equipment, raw materials, spare parts, or accessories; and

e. VAT exemption on importation and VAT zero-rating on local purchases of goods and services for export enterprises only.

Section 300 of the National Internal Revenue Code (NIRC) of 1997, as amended by RA 11534, however, provides that all sectors, industries, projects, or activities that may be included in the Strategic Investment Priority Plan (SIPP) shall undergo an evaluation process to determine the suitability and potential of the industry or sector in promoting long-term growth and sustainable development and the national interest. It further provides that in no case shall a sector, industry, project, or activity be included in the SIPP unless a formal evaluation process or report supports it. Thus, any recommendation to have the industry in the SIPP to be eligible for incentives must be accompanied by the said evaluation process or report. The SIPP is also subject to periodic review and amendment every three years from its issuance to assess whether the projects or activities included therein are still deemed a priority.

[19] Entitled, "An Act to Strengthen the Competitiveness of the Philippine Motor Vehicle Manufacturing Industry". Introduced by Representative Rufus B. Rodriguez, et al., First Regular Session, Eighteenth Congress.

[20] Entitled, "An Act Reforming the Corporate Income Tax and Incentives System, Amending for the Purpose Sections 20, 22, 25, 27, 28, 29, 34, 40, 57, 109, 116, 204 and 290 of the National Internal Revenue Code of 1997, as Amended, and Creating Therein New Title XIII, and for Other Purposes", (March 26, 2021).

Further, the proposed inclusion of the motor vehicle manufacturing industry in the SIPP does not guarantee an automatic grant of incentives. Under the CREATE Act and its implementing rules and regulations, business enterprises engaged in activities listed in the SIPP may apply for registration with any of the existing Investment Promotion Agencies in the country. The application shall be subject to evaluation and cost-benefit analysis to determine the impact of these investments and the tax incentives to be granted thereon on the Philippine economy.

Former President Rodrigo Roa Duterte issued Memorandum Order No. 61, s. 2022[21] on May 24, 2022, which contains the priority investment sectors and activities eligible to be granted incentives under the CREATE Act. Under the said issuance, the activities listed in the 2020 IPP[22], as amended by Memorandum Circular No. 2021-005, which included the manufacture of export products, among others, shall fall under Tier I activities and are therefore eligible or qualified to be granted the incentives provided to the said Tier under the CREATE Act. However, such entitlement is subject to certain criteria and conditions prescribed by the BOI.

Nevertheless, the DTI supports the aforementioned proposed bill to accelerate industrialization and advance competitive industries by developing a comprehensive motor vehicle manufacturing industry policy. Further, under Section 302 of the NIRC of 1997, as amended by RA 11534, the BOI is given the authority, at any time, to include additional areas in the SIPP, subject to publication requirements and the criteria for investment priority determination.

V. FISCAL POLICY AND INTERVENTION OF SELECT ASEAN MEMBER COUNTRIES

Considering that the automotive industry has always been regarded as a vital industry and a major economic contributor, apart from the Philippines, several ASEAN member countries such as Indonesia, Malaysia, Thailand, and Vietnam have introduced policies, mainly through the grant of fiscal incentives, to support and strengthen their automotive manufacturing industry. (See Table 9.)

[21] Entitled, "Approving the 2022 Strategic Investment Priority Plan", (May 24, 2022).

[22] Presidential Memorandum Order No. 50 entitled, "Approving the 2020 Investment Priority Plan", (November 18, 2020).

Table 9

Comparative Matrix of Incentives Granted by Select ASEAN Member Countries to the Automotive Industry

Country	Income tax holiday	Corporate income tax reduction	Import duty exemption	Enhanced deduction
Indonesia	Yes	Yes	No	Yes
Malaysia	Yes	Yes	No	No
Thailand	Yes	No	Yes	No
Vietnam	Yes	Yes	Yes	No

Indonesia[23]

Currently, qualified automotive manufacturers in Indonesia are entitled to corporate income tax (CIT) exemption for five to 20 years, depending on the amount of investment capital. Thereafter, they can be given a 50% CIT reduction for the succeeding two years. Other automotive industry players not qualified for CIT exemption may avail of a tax allowance at 30% of the investment capital for 6 years or 5% per year starting at the time of commercial operation. Research and development expenses are deductible from gross income at 300% of the total cost, while training, learning, and apprenticeship expenses are deductible at 200%.

Malaysia[24]

In Malaysia, enterprises that plan to undertake the following activities may be granted CIT exemption or CIT reduction for a period of five to 10 years by the Malaysian Investment Development Authority:

1. Assembly of energy-efficient vehicles (EEVs)[25];
2. Manufacture of critical components/systems for EEVs or non-EEVs such as transmission, engines, airbag, handling, control, and brake mechanism; and
3. Manufacture of components for hybrid and electric vehicles such as electric motors, electric batteries, and battery management systems.

[23] Ministry of Industry, Republic of Indonesia. (July 24, 2019). "Government Policy on Future Automotive Technology". Retrieved from: https://www.gaikindo.or.id/wp-content/uploads/2019/07/01.-Dirjen-Ilmate_-Sesi-Siang-GOVERNMENT-POLICY-ON-FUTURE-AUTOMOTIVE-TECHNOLOGY-GIIAS-Conference-240719.pdf

[24] Malaysian Investment Development Authority. (n.d). Incentives for New Investments. Retrieved on May 26, 2022, from: https://www.mida.gov.my/wp-content/uploads/2020/07/Chapter-2-Incentives-for-New-Investments.pdf

[25] Are vehicles that meet a set of define specification in terms of carbon emission level (g/km) and fuel consumption (l/100km) and include fuel efficient vehicles, hybrid, EV and alternatively fuelled vehicles e.g., LPG, Biodiesel, Ethanol, Hydrogen and Fuel Cell (Source: https://www.miti.gov.my/index.php/glossary/term/309)

Thailand[26]

Thailand is the leading ASEAN country in terms of automotive production. One of the key factors for this is the Thai government's fiscal and non-fiscal support for its automotive industry. Qualified automotive enterprises in Thailand are entitled to the following tax and non-tax incentives:

1. CIT exemption for up to eight years;
2. Import duty exemption on machinery and raw materials used in manufacturing export products;
3. Permit to bring skilled workers and experts to work in investment promoted activities;
4. Permit to own land; and
5. Permit to take out or remit money in foreign currency.

Vietnam[27]

Under the National Investment Law of Vietnam, qualified investment projects in the automotive industry are entitled to CIT exemption, CIT reduction, and tax reduction, depending on the project's location. As a preferred activity, qualified automotive enterprises are also entitled to duty exemption for the importation of fixed assets such as machines, equipment, and spare parts.

Project	Reduced tax rate	Tax exemption	Tax reduction
New investment projects in geographic areas with especially harsh socio-economic conditions, Economic Zones, and High-Tech Zones	10% for 15 years	4 years	50% for the next 9 years
New investment projects in geographic areas with harsh socio-economic conditions	17% for 10 years from 2016	2 years	50% for the next 4 years

[26] Rastogi, Vasundhara. (May 10, 2018). *Thailand's Automotive Industry: Opportunities and Incentives*. Retrieved on May 26, 2022, from: https://www.aseanbriefing.com/news/thailands-automotive-industry-opportunities-incentives/

[27] Baker Mckenzie. (November 2020). *Tax, Customs and Regulatory Aspects of Vietnam's Automobile Industry*. Retrieved on May 26, 2022, from: https://www.bakermckenzie.com/-/media/files/insight/publications/2020/12/baker-mckenzie-handbook--tax-customs--regulatory-aspects-of-vietnams-automobile-industry.pdf

VI. CONCLUSION

The automotive industry is one of the key drivers of the Philippine economy. The manufacturing of cars, including their parts, involves metals, chemicals, plastic, glass, steel, and other subsectors of the manufacturing industry. Given these linkages, the promotion of the automotive industry entails the corresponding expansion of these allied-supporting industries.

As discussed, the Philippine automotive industry is challenged by the low volume of production. Hence, the institutionalization of national policies for the industry, such as the MVDP and CARS Program, is commendable as it aims to propel the Philippine automotive industry to new heights. The proposed inclusion of the automotive manufacturing industry in the SIPP will make it eligible for fiscal incentives under the CREATE Act, putting the Philippines on par with select ASEAN countries that also grant fiscal incentives to their respective local automotive manufacturing industries. Further, it will improve the country's competitiveness, re-establish a strong domestic market base, and consequently expand its automobile export activities, reducing reliance on other countries.

ANNEX A

Fiscal Incentives Provisions of the Unnumbered House Bill re: Philippine Motor Vehicle Manufacturing Industry Act

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ARTICLE III

INCENTIVES

SEC. 13 ***Fiscal Incentives*** **–** The Philippine Motor Vehicle Manufacturing Industry is hereby declared a priority investment sector that will regularly form part of the country's Investment Priority Plan (IPP), unless declared otherwise by law. As such, all entities duly accredited by the Department of Trade and Industry through the Board of Investment under this Act shall be entitled to all the incentives provided under Republic Act No. 11534, otherwise known as Corporate Recovery and Tax Incentives for Enterprises Act

SEC. 14. ***Industry Development Programs*** – The Department of Trade and Industry, through the Board of Investment, shall formulate and implement programs that provide time—bound, targeted, performance-based, and transparent fiscal and non-fiscal support to new growth areas or specific motor vehicle manufacturing activities that have high potential economic gains in terms of employment generation, technology transfer and local value-added. Such programs shall be endorsed by the Council and approved by the President: *Provided,* That fiscal support granted under this Section shall be non-taxable, non-negotiable, and applicable up to its full amount; *Provided further,* That the budget for fiscal support shall be indicated in the annual National Expenditure Program and deemed automatically appropriated.

In addition, the Department of Trade and Industry through the Board of Investment and in coordination with the relevant government agency, shall formulate and implement programs to support the development of motor vehicle manufacturing supporting industries.

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REFERENCES

Aldaba, Rafaelita M. (November 2007). Assessing the Competitiveness of the Philippine Auto Parts Industry. Retrieved from: https://dirp3.pids.gov.ph/ris/dps/pidsdps0714.pdf

Aldaba, Rafaelita M. (August 2008). Globalization and the Need for Strategic Government-Industry Cooperation in the Philippine Automotive Industry. Retrieved from: https://pidswebs.pids.gov.ph/ris/dps/pidsdps0821.pdf

ASEAN Automotive Federation. (n.d.). ASEAN Automotive Federation Statistics. Retrieved from: https://www.asean-autofed.com/statistics.html

Autoindustriya.com. (n.d). 2021 Philippine Auto Sales Report. Retrieved on May 5, 2022, from: https://www.autoindustriya.com/features/2021-philippine-auto-sales-at-294-223-units-up-18-56.html

Baker Mckenzie. (November 2020). Tax, Customs and Regulatory Aspects of Vietnam's Automobile Industry. Retrieved from: https://www.bakermckenzie.com/-/media/files/insight/publications/ 2020/12/baker-mckenzie-handbook--tax-customs--regulatory-aspects-of-vietnams-automobile-industry.pdf

Board of Investments. (2020, February). 2018 Annual Report Revolutionizing Philippine Industries, Attracting the Highest Strategic Investments. https://boi.gov.ph/ufaqs/annual-report-2018/

De Guzman, M. (2021, May 5). Leading auto wiring harness makers invited to manufacture in PH. Autoindustriya.Com. Retrieved May 25, 2022, from https://www.autoindustriya.com/auto-industry-news/leading-auto-wiring-harness-makers-invited-to-manufacture-in-ph.html

Department of Finance-Department of Budget and Management-Department of Trade and Industry-Board of Investments Joint Administrative Order No. 01-2015. (November 16, 2015). Guidelines for the Tax Payment Certificate Mechanism to Implement the Fiscal Support for the Comprehensive Automotive Resurgence Strategy (CARS) Program under Executive Order No. 182, s. 2015.

Desiderio, L. (2021, September 6). DTI hopeful on 3-year extension of CARS program. Philippine Star. Retrieved May 24, 2022, from https://www.philstar.com/business/2021/09/06/2125079/dti-hopeful-3-year-extension-cars-program

Executive Order No. 156 s. 2002 (December 12, 2002). Providing for a Comprehensive Industrial Policy and Directions for the Motor Vehicle Development Program and its Implementing Guidelines.

Executive Order No. 182 s. 2015 (May 29, 2015). Providing for a Comprehensive Automotive Resurgence Strategy Program.

Executive Order No. 226 s. 1987 (July 29, 1987). The Omnibus Investments Code.

Executive Order No. 877 s. 2010 (June 3, 2010). The Comprehensive Motor Vehicle Development Program.

Executive Order No. 906 s. 1983 (August 4, 1983). Directing the Review of the Progressive Car Manufacturing Program (PCMP).

House Bill No. 1833. Introduced by Representative Rufus B. Rodriguez. An Act to Strengthen the Competitiveness of the Philippine Motor Vehicle Manufacturing Industry.

Malaysian Investment Development Authority. (n.d). Incentives for New Investments. Retrieved on May 26, 2022, from: https://www.mida.gov.my/wp-content/uploads/2020/07/Chapter-2-Incentives-for-New-Investments.pdf

Memorandum Circular No. 651 s. 1973 (July 25, 1973). Providing A List of Vehicle Models Authorized for Assembly by Firms Participating Under the Progressive Car Manufacturing Program for Guidance of All Concerned.

Ministry of Industry, Republic of Indonesia. (July 24, 2019). Government Policy on Future Automotive Technology. Retrieved on May 26, 2022, from: https://www.gaikindo.or.id/wp-content/uploads/2019/07/01.-Dirjen-Ilmate_-Sesi-Siang-GOVERNMENT-POLICY-ON-FUTURE-AUTOMOTIVE-TECHNOLOGY-GIIAS-Conference-240719.pdf

Xinhua News Agency (January 01, 2022). Indonesia's car value-added tax incentive aims to revive local industry. Retrieved on May 26, 2022, from: https://english.news.cn/asiapacific/20220122/a7c8bdf4669948ce97b6a67b0978131f/c.html

Philippine Star. (n.d). Decision on CARS extension likely out in Q1. Retrieved from: https://www.philstar.com/business/2021/12/31/2150962/decision-cars-extension-likely-out-q1

Philippine Statistics Authority. (2014, February 11). Foreign Trade Statistical Tables: 2014 - 2021 |Philippine Statistics Authority. Retrieved May 23, 2022, from https://psa.gov.ph/statistics/foreign-trade/fts-table-id

Philippine Statistics Authority. (2022, May 10). 2019 Annual Survey of Philippine Business and Industry (ASPBI) - Manufacturing Sector: Preliminary Results | Philippine Statistics Authority. Retrieved May 23, 2022, from https://psa.gov.ph/content/2019-annual-survey-philippine-business-and-industry-aspbi-manufacturing-sector-preliminary

Presidential Memorandum Order No. 136 s. 1987 (December 1. 1987). Approving and Promulgating the Guidelines on the Car Development Program Replacing the Progressive Car Manufacturing Program.

Presidential Memorandum Order No. 157 s. 1988 (February 9, 1988). Approving the Guidelines on the Commercial Vehicle Development Program Replacing the Progressive Truck Manufacturing Program.

Presidential Memorandum Order No. 160 s. 1988 (February 29, 1988). Approving the Guidelines on the Motorcycle Development Program Replacing the Progressive Motorcycle Manufacturing Program.

Presidential Memorandum Order No. 346 s. 1996 (February 26, 1996). Amending the Guidelines on the Card Development Program (CDP), the Commercial Vehicle Development Program (CVDP), and the Motorcycle Development Program (MDP).

Presidential Memorandum Order No. 473 s. 1998 (April 8, 1988). Amending the Guidelines on the Car Development Program, the Commercial Vehicle Development Program, and the Motorcycle Development Program.

Rastogi, Vasundhara. (May 10, 2018). Thailand's Automotive Industry: Opportunities and Incentives. Retrieved on May 26, 2022, from: https://www.aseanbriefing.com/news/thailands-automotive-industry-opportunities-incentives/

Profile of the Electric Vehicle Industry in the Philippines*

I. INTRODUCTION

When fossil fuels such as gasoline and diesel are burned, carbon dioxide (CO_2), a greenhouse gas, is released into the atmosphere. When CO_2 and other greenhouse gases like methane, nitrous oxide, and hydrofluorocarbons build up, a warming of the Earth's atmosphere happens and causes a change in the climate we are now experiencing (EPA, 2022). Adopting the use of electric vehicles (EVs) is one strategy to decarbonize the transportation sector by reducing greenhouse gas emissions, which is necessary to lessen the impact of climate change.

Although vehicles with an internal combustion engine (ICE) have been the standard vehicle plying on the road for a significant number of years, vehicle manufacturers are now including EVs in their line-up, considering the growing preference of people for vehicles that are not only fuel-dependent–given the current high prices of fuel–but are also friendly to the environment.

This paper provides a profile of the EV industry in the Philippines. Information on the policy support programs and incentives for the said industry in the Association of Southeast Asian Nations (ASEAN) region are also discussed in the paper.

II. BACKGROUND INFORMATION

An EV is driven by an electric motor that uses stored energy in its rechargeable batteries vis-à-vis a vehicle with an ICE, which generates power by burning a mixture of gasoline and gases. The use of EVs contributes to improving air quality because EVs emit no carbon emissions during operation, reducing air pollution significantly. In addition to reducing air pollution, EVs can reduce noise pollution as they are significantly quieter than conventional vehicles.

There are several types of EVs in the market. These include all-electric vehicles, also referred to as battery EVs (BEVs), with an electric motor instead of an ICE. This vehicle uses

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a large traction battery pack to power the electric motor. It must be plugged into a wall outlet or charging equipment, called elective vehicle supply equipment (EVSE). On the other hand, Hybrid EVs (HEVs) are powered by an ICE and one or more electric motors, which use energy stored in batteries. Unlike BEVs, HEVs cannot be plugged in to charge the battery. Instead, the battery is charged through regenerative braking[1] and the ICE. The additional power the electric motor provides is likely to allow for a smaller engine, while the battery can also power auxiliary loads, reducing engine idling when stopped. These features collectively contribute to better fuel economy without sacrificing performance. Plug-in hybrid EVs (PHEVs) use batteries to power an electric motor and another fuel, such as gasoline, to power an ICE. The ICE can charge PHEV batteries using a wall outlet, charging equipment, or regenerative braking. The vehicle typically runs on electric power until the battery is nearly depleted, at which point the car automatically switches over to using the ICE. (See Annex A for a detailed comparison of the key components of BEVs, HEVs, and PHEVs).

Energy storage systems, such as batteries, are essential components of EVs. The following are the different types of EV batteries:

a. Lithium-ion batteries – Currently used in most portable consumer electronics such as cellphones and laptops because of their high energy per unit mass relative to other electrical energy storage systems. They are also said to have a high power-to-weight ratio, high energy efficiency, good high-temperature performance, and low self-discharge. Most of today's BEVs and PHEVs use lithium-ion batteries, though the exact chemistry often varies from that of consumer electronics batteries. While most components of lithium-ion batteries can be recycled, the cost of material recovery remains a challenge for the industry.

b. Solid-state batteries – These are the batteries in which all the components that make up the battery are solid. Secondary batteries (batteries that can be recharged and used repeatedly), like lithium-ion batteries, are basically composed of two electrodes (a cathode and an anode) made of metal and an electrolyte that fills the space between them. Conventional secondary batteries use a liquid as the electrolyte, but solid-state batteries use a solid as the electrolyte. A solid electrolyte enables larger-capacity and higher-output batteries than lithium-ion batteries. Moreover, making the electrolyte solid has advantages in terms of safety over lithium-ion batteries.

c. Nickel metal hydride batteries – Routinely used in computer and medical equipment, offer reasonable specific energy and specific power capabilities. These batteries have a much longer life cycle than lead-acid batteries and are safe and abuse-tolerant. These batteries have been widely used in HEVs. The main challenges with nickel-metal hydride batteries are their high cost, high self-discharge, and heat generation at high temperatures, and the need to control hydrogen loss.

[1] Regenerative braking means the electric motor is operated in reverse, thereby applying a braking force through electromagnetism. This recaptures some of the vehicle's kinetic energy by charging the battery. Some electric vehicle models have specific driving modes that incorporate varying levels of regenerative braking. (Office of Energy Efficiency & Renewable Energy)

d. Lead-acid batteries – These batteries can be designed to be high-powered and are inexpensive, safe, and reliable. However, low specific energy, poor cold-temperature performance, and short calendar and lifecycle impede their use. Advanced high-power lead-acid batteries are being developed, but these batteries are only used in commercially available electric-drive vehicles for ancillary loads.

e. Ultracapacitors - Store energy in a polarized liquid between an electrode and an electrolyte. Energy storage capacity increases as the liquid's surface area increases. Ultracapacitors can provide vehicles with additional power during acceleration and hill climbing and help recover braking energy. They may also be useful as secondary energy-storage devices in electric-drive vehicles because they help electrochemical batteries level load power.

Typically, the production of an EV produces greater CO_2 emissions than the production of a conventional vehicle. The creation of lithium-ion batteries, a vital component of an EV, consumes a substantial amount of energy and releases CO_2 throughout the manufacturing of an EV. However, even after accounting for the creation of batteries, EVs are still considered the more environment-friendly option due to the reduced emissions created during the vehicle's lifespan (Choudhury, 2021).

As mentioned earlier, aside from environmental awareness, the demand for EVs has surged due to rising fuel costs, partly brought about by the ongoing Ukraine-Russia geopolitical war, making oil importation more expensive. It must be mentioned that the Philippines is highly dependent on the world market for its oil. As of the first week of January 2022, gasoline products averaged P62.10 per liter (L), while diesel products averaged P43.94/L. By July 2022, the average gasoline price was P85.47/L, and the average diesel price was P87.31/L, representing net increases of 37.63% or P23.37/L for gasoline and 98.70% or P43.37/L for diesel (Grecia L., 2022).

Several Southeast Asian countries have begun taking initiatives to encourage EV adoption in their respective nations. An online article reported that ASEAN's interest in EVs has increased over time and that, according to the ASEAN Automotive Federation, about 2.45 million EVs were sold in the ASEAN member states in the year 2020. This number is expected to increase with population growth and economic development (Southeast Asia Infrastructure, 2021).

In an effort to catch up with worldwide efforts to accept new technologies, such as the move towards EV use, the Philippine government, through the Department of Transportation, introduced the Public Utility Vehicle Modernization Program. This program is one of the flagship programs of the Duterte Administration designed to modernize the public transport system to provide a safe, convenient, and systematized service to Filipinos commuting daily. Furthermore, the government also passed Republic Act (RA) No. 11697, also known as the "Electric Vehicle Industry Development Act (EVIDA)," which lapsed into law on April 15, 2022, without the signature of the President, in accordance with Article VI Section 27(1) of the 1987 Philippine Constitution, which would regulate various EV-related operations in the country. The EVIDA is a landmark piece of legislation that will help the country remain globally competitive and on the cutting edge of EV technology and the infrastructures and

components that support it. It will also pave the way for local EV production, which would lead to the creation of new jobs and the attraction of new investments.

III. PROFILE OF THE EV INDUSTRY IN THE PHILIPPINES

Data from the Electric Vehicle Association of the Philippines (EVAP)[2] shows 13,934 registered EVs between 2010 and 2021. The EVs account for only 0.11% of the 13 million vehicles registered, per the Land Transportation Office (LTO) 2021 Annual Report. Table 1 provides information on the various types of registered EVs from 2010 to 2021.

Table 1

Number of Registered EVs, by Type, CY 2010 to 2021

Type of EV	No. of EVs registered with the LTO
e-Trikes	7,220
e-Motorcycles	5,520
e-Utility vehicles	815
e-Cars	311
e-Sports utility vehicles	43
e-Trucks	12
e-Bus	10
Total	13,934

Note. Data gathered from EVAP.

As provided in Table 1, the majority of EVs registered with the LTO include e-Trikes and e-Motorcycles, comprising 51.8% and 39.6% of the total, respectively. An E-Trike, as defined under LTO Memorandum Circular No. AVT-2015-1983[3] is a motor vehicle powered by electrical energy from rechargeable batteries symmetrically arranged and mounted with a cabin designed to travel on three wheels for six or less passengers, excluding the driver, depending on the number of seat provisions. Its motor vehicle classification is motorcycle-tricycle (MTC), and the Motor Vehicle User's Charge (MVUC) rate, for which its owners are

[2] The EVAP is an association of electric vehicles enthusiasts. EVAP envisions a nation wherein the use of EVs is highly promoted, encouraged and supported by its government and the society in order to develop a transportation landscape that is one with the environment ecologically and economically. It has been in-charge of organizing the yearly EV Summits in the country in coordination with various stakeholders and government agencies such as the Department of Trade and Industry, Department of Energy, and the Land Transportation Office.

[3] Subject: Classification and Registration of Electric Tricycle also known as E-Trike (December 2, 2015).

liable to pay to the LTO, is the rate used for MTC, whether private or for-hire, under RA 8794[4] or the MVUC law. Its operation is limited within or along barangay roads only and may only be allowed to pass the main thoroughfares, highways, or national roads for crossing only when the barangay road is divided by such structures.

EVAP predicts an annual growth rate of EVs in the country by 8% to 12%. According to EVAP, this is expected to generate about P1.68 billion in revenue from services and sales of 200,000 units by the year 2024. The predicted increase in demand for EVs is attributed to various factors, such as their rising popularity, widespread acceptance across the country, the steep rise in fuel prices, and government support for EVs in the form of programs and policies (International Trade Administration, 2022).

Data from the EVAP shows that major companies involved in the EV supply chain are mostly engaged in metal, plastic parts and sub-assembly components, electronic components, vehicle body building capacities, vehicle external sourcing, and local assembly. (See Table 2.)

Table 2

EV Supply Chain Capacity

I. Metal / plastic components and sub-assemblies		
● Autofir Enterprises*	● KEA Industrial Corporation*	● Nito Seiki Manufacturing Corporation*
● Manly Plastics Inc.*	● Asian Transmission Corporation	● Albert Metalcraft, Inc.
● Alpha Techno Precision Toolings, Inc.	● Ambrose Industries Inc.	● BES Technical Works and Services Inc.
● Karzai Corporation	● Laguna Carparts Mfg., Inc.	● Master Coating Industrial Technology Inc.
● Onatech, Inc	● P&R Parts and Machineries, Inc	● P.IMES Corp.
● RJ Spring, Rubber, and Metal Parts Mfg. Corp.	● ROH Auto Products (Philippines), Incorporated	● Tri-R Allied Industries Inc.
● Valerie Products Mfg., Inc.	● VJF Precision Toolings Corp.	● VSO Global Incorporated

[4] Entitled, "An Act Imposing a Motor Vehicle User's Charge on Owners of All Types of Motor Vehicles and for Other Purposes", (June 27, 2000).

II. Electronic components

A. Electronics manufacturing services

- Integrated Micro-electronics Inc.*
- Denso Philippines Inc.
- EMS Components Assembly Inc.
- Continental Temic
- Ionics EMS Inc.

B. Automotive Wire Harness

- Yazaki-Torres Manufacturing Inc.
- EDS Manufacturing
- International Electric Wires Philippines Inc.
- Philippine Kyohritsu

III. Imported EV parts suppliers

- Various battery cell/pack suppliers (China)*
- Various Battery Management System (BMS) suppliers (China)*
- Various motor controllers (China)*
- Various traction motor suppliers (China)*

IV. Vehicle chassis and body manufacturers

A. e-Buses

- Almazora Motors Corporation
- Autodelta Coach Builders, Inc.
- Del Monte Motor Works, Inc.
- Colombian Motors Corporation
- Centro Manufacturing Corporation

B. e-Jeepneys

- Almazora Motors Corporation
- M.D. Juan Enterprises

C. e-Tricycle

- Almazora Motors Corporation
- M.D. Juan Enterprises*

V. Completely built unit suppliers

A. e-Buses

- Columbian Motors Corporation - BYD (China)*
- Sky-well New Energy Automobile Group Co. Ltd (China)*

B. e-Jeepneys

V. Completely built unit suppliers

- Global Electric Transport - EV Dynamics (China)*
- Star 8 Green Technology Corp (China)*
- FilOil Gas and Energy Company Inc. (China)*

C. e-Tricycle

- Star 8 Green Technology Corp (China)*
- DECC Philippines*

D. e-Vans and e-Taxi

- CHTC Motors
- BYD Philippines
- Nissan Philippines Inc.
- Mitsubishi Motors Philippines Corporation
- Hyundai Asia Resources Inc.
- DongFeng Motor Company*
- Chery Motors Philippines, Inc.

E. e-Motorcycles

- Honda Motorcycle Philippines (Japan/Thailand) *
- Eclimo Electric Management, Inc. (Malaysia)*

VI. Vehicle manufacturers/ Completely knocked down assemblers

A. e-Trike

- BEMAC Electric Transportation Philippines, Inc.*
- Tojo Motors Corporation, Inc.*
- Prozza Hirose Manufacturing Inc.*
- Philippine Utility Vehicle Inc.*
- GerWeiss Motors Corporation*
- EV Wealth*
- PinoyAko Corporation*
- Elaia Green Vehicles (CKD China)*
- Motolite Philippines (CKD-China)

B. e-Jeep

- Tojo Motors Corporation, Inc.*
- Philippine Utility Vehicle Inc.*
- ENPlus Co. Ltd.

C. e-Motorcycles

- TRINX Bicycle Sport Technology Corp.*
- Integrated Micro-electronics Incorporated
- Kymco Philippines Inc.

D. e-Cars

- ENPlus Co. Ltd.*

Note. Items in asterisk are active or have been involved with the EV industry, while others have the potential to be actively engaged in the EV industry.

Meanwhile, data from ToJo Motors, which specializes in producing e-tricycles and e-jeepneys, reveal that 10 public transport groups already use EVs. These are mostly located in the Mindanao region. These are the (a) LADOTRANSCO; (b) Metro Gensan Transport Cooperative; (c) FVR Malagat Tambler Transport Cooperative; (d) Balangay Transport Cooperative; (e) Makilala Transport Cooperative; (f) Rajah Buayan Transport Cooperative; (g) Luzon Eco Transport Service Multi-Purpose Cooperative; (h) E-Sakay; (i) Apopong Lagao Jeepney Operators and Drivers Transport Service Cooperative; and (j) Public Transport Alliance of the Philippines. (See Table 3.)

Table 3

Public Transport Groups Using EVs and Their Locations

Public transport groups	Locations
LADOTRANSCO	General Santos City, South Cotabato
Metro Gensan Transport Cooperative	General Santos City, South Cotabato
FVR Malagat Tambler Transport Cooperative	General Santos City, South Cotabato
Rajah Buayan Transport Cooperative	General Santos City, South Cotabato
Apopong Lagao Jeepney Operators and Drivers Transport Service Cooperative	General Santos City, South Cotabato
Balangay Transport Cooperative	Butuan City
Makilala Transport Cooperative	Kidapawan City
Luzon Eco Tranport Service Multi-Purpose Cooperative	Marikina City
E-Sakay	Metro Manila

In terms of price and maintenance cost, EVs and conventional vehicles have always entailed a tradeoff. While a brand-new EV may be more expensive than a conventional vehicle in terms of price, it is still cheaper to own in the long run because of the savings generated from the reduced maintenance costs, specifically for all-electric vehicles. According to the Alternative Fuels Data Center of the US Department of Energy, while the maintenance needs and safety requirements for PHEVs and HEVs are similar to those of conventional vehicles, all-electric vehicles typically require less maintenance for the following reasons:

a. The battery, motor, and associated electronics require little to no regular maintenance;
b. There are fewer fluids, such as engine oil, that require regular maintenance;
c. Brake wear is significantly reduced due to regenerative braking; and
d. There are far fewer moving parts relative to a conventional fuel engine.

According to Zigwheels[5], the Philippines currently offers 15 EV models, with Nissan, Porsche, BYD, Jaguar, and WM Motor being the most popular EV brands in the country. Some of the industry's finest EVs include the Nissan Kicks e-Power, Porsche Taycan, BYD E6, Jaguar I-Pace, and BYD Tang. The cheapest EV is the Nissan Kicks e-Power 2022, a self-charging hybrid EV that uses an electric system to power the wheels and a gasoline engine to charge the battery, which costs P1.21 million. The most expensive is the Jaguar I-Pace 2022, a battery-electric crossover SUV produced by Jaguar that costs P7.59 million. (See Table 4.)

Table 4

Popular EVs in the Philippines and Their Price

Model	Price (in pesos)
Jaguar I-Pace	7.59 million
BYD E6	4.20 million
BYD Tang	3.70 million
Nissan Leaf	2.80 million
WM Motor W5	2.54 million
Nissan Kicks e-Power	1.21 million to 1.51 million

The need for charging stations is rising along with the demand for EVs. The availability of charging stations has been a crucial factor in determining the nation's readiness to adopt EVs as a method of transportation. With the assistance of private organizations, a number of EV charging stations have been established in the country, particularly in Metro Manila, which is seen to boost and support the growth of EVs. According to EVAP, the total number of charging stations, including chargers and battery swapping stations[6] throughout the country, is estimated at 164. (See Table 5.)

Table 5

Number of Charging Stations in the Philippines

Charger type	No. of stations
AC charging stations	122
DC charging stations	34
Battery swapping stations	8
Total	164

Note. See Annex B for the complete list of EV charging stations.
Data sourced from the Alternative Fuels and Energy Technology Division, Department of Energy.

[5] Zigwheels is an automotive and motorcycling website which provides automotive industry news, reviews and advice to consumers.

[6] Battery swapping involves switching out a depleted electric car battery with a fully charged one, rather than plugging it in to charge (Kristan, L., 2022).

More EV charging stations are expected to open as companies like Megaworld Corporation, Ayala Corporation, and Shell Pilipinas have announced that they will be opening more charging stations as part of their efforts to create a safer and greener future for all (Unbox.ph, 2022). Also, the partnership between eSakay, Inc., a subsidiary of the Manila Electric Company (Meralco), and the Golden Arches Development Corporation has paved the way for the installation of EV charging stations at the Mcdonald's Green and Good Store in UN Avenue in Ermita, Manila, and Shaw Boulevard in Mandaluyong (Gines Jr., B., 2021). These efforts are essential for increasing EV adoption and reducing customer anxiety about the purchase and ownership of an EV.

As to the cost of charging an EV, Top Gear[7] noted that a Nissan Leaf, with a claimed range of 311 kilometers when fully charged, costs almost P360 to completely charge based on the 2021 average Meralco rates (Tabamo, D., 2021). If the said kilometrage is applied to locations coming from the city of Manila, the fully charged Nissan Leaf can reach approximately Tagudin, Ilocos Sur, in the North or Ragay, Camarines Sur, in the south.

Currently, EV charging stations found in SM Supermalls are free of charge to EV owners and their customers as part of their efforts to entice more Filipinos to switch from fuel-fed cars to a more environment-friendly mode of transportation (Ochave, R., 2022). In the case of those operated in gasoline stations of Shell Philippines, the cost of charging is P65 pesos per minute since they use a 180-kilowatt direct current (DC) fast charger, unlike the alternating current (AC) chargers found in other establishments (Unbox.ph, 2022).

Public charging stations make EVs more convenient to use. Although the majority of EV owners charge at home, public charging and workplace charging stations can increase the daily useful range of all-electric vehicles and reduce the amount of gasoline consumed by PHEVs. General public charging uses Level 2 or DC fast charging. Level 1 and 2 charging stations should typically be located where vehicle owners are highly concentrated and parked for long periods of time, such as shopping centers, airports, hotels, government offices, and other businesses. Public charging should also be located along highway corridors or urban charging hubs.

EV charging system suppliers in the country are currently limited in number, and multinational players, such as the Swiss engineering firm ABB Group and Japanese car manufacturer Mitsubishi Motors, have entered the market. Current key suppliers of chargers and charging infrastructure developers include the following (Ha. T. and Manongdo, P., 2021):

a. Soundon New Energy – A Chinese-owned company that manufactures solar-integrated charging stations;

b. CHRG Inc. – A start-up company in Quezon City that provides EV solutions;

c. Meralco – An electric power distribution firm and a developer of EV charging stations;

d. QEV Philippines – A developer of EV charging stations that aims to install 200 charging stations in the country by 2022; and

[7] Top Gear publishes articles related to latest developments in the car motoring industry.

e. Unioil – A Philippine petroleum company and EV charging station developer

As of 2022, there are 10 manufacturers engaged in the EV industry that avail of tax incentives. These include four enterprises registered with the Board of Investments (BOI), one with the Subic Bay Metropolitan Authority (SBMA), and five with the Philippine Economic Zone Authority (PEZA). Of these manufacturers, four focus on export, four are domestic-oriented, and two are mixed. The majority of the manufacturers are engaged in producing EVs and their components, while BTC Power Cebu, Inc. and Wyntron are engaged in building ultra-fast EV chargers. (See Table 6.)

Table 6

EV Manufacturers Availing Fiscal Incentives

Enterprise name	Investment Promotion Agency (IPA)	Market orientation	Location	Registered activity
Manufacturer 1	BOI	Domestic	Bustos, Bulacan	Producer of EVs (3 wheels and 4 wheels)
Manufacturer 2	BOI	Domestic	Bacoor, Cavite	New domestic producer of EVs
Manufacturer 3	BOI	Domestic	Carmona, Cavite	New domestic producer of EVs
Manufacturer 4	BOI	Domestic	Carmona, Cavite	New domestic producer of electric motorcycles
Manufacturer 5	SBMA	Export	Olongapo City, Zambales	Engaged in the business of manufacturing and/or assembly of EVs, in any form, size, type, purpose, and with any number of wheels, and subsequent sale of the manufactured products to distributors and/or dealers
Manufacturer 6	PEZA	Export	Sta Rosa, Laguna	Manufacturing of rare earth magnet/grain boundary diffusion process of magnet for EV and HEV
Manufacturer 7	PEZA	Export	East Service Road, Taguig City	Manufacture of electronic car parts (Door/ Body Control Modules)

Enterprise name	Investment Promotion Agency (IPA)	Market orientation	Location	Registered activity
Manufacturer 8	PEZA	Mixed	Cabuyao, Laguna	Electronic car dashboard assembly
Manufacturer 9	PEZA	Export	Mactan, Cebu	To engage in the assembly of ultra-fast EV chargers, EV-DC fast chargers, and EV-AC charger units
Manufacturer 10	PEZA	Mixed	Rosario, Cavite	Manufacture of Electronic Vehicle Supply Equipment charger

Note. Data sourced from the FIRB Secretariat.

IV. INCENTIVES AVAILABLE TO THE PHILIPPINE EV INDUSTRY

In 2006, then President Gloria Macapagal-Arroyo issued Executive Order (EO) No. 488 s. of 2006[8] due to the need to promote the efficient use of fuel in the transport sector and complement EO 156 s. of 2002, which restructured the country's Motor Vehicle Development Program and its implementing guidelines for the primary purposes of the establishment and/or expansion of production facilities by global vehicle manufacturers to allow the export of completely built units (CBUs) and increase the exports of motor vehicle parts and components. EO 488 s. of 2006 modified import duty rates on components, parts, and accessories for the assembly of hybrid, electric, flexible fuel, and compressed natural gas motor vehicles under Section 104 of the Tariff and Customs Code of the Philippines (now the Customs Modernization and Tariff Act). The said articles were subjected to import duty rates for Most-Favoured Nation and the ASEAN-Common Effective Preferential Tariff (CEPT), allowing EV manufacturers to import EV components at a more affordable cost. (See Annex C.) According to Section 2 of EO 488 s. of 2006, the ASEAN-CEPT rates shall be accorded to imports coming from the ASEAN Member States applying CEPT concession to the same product pursuant to Article 4 of the Agreement on the CEPT Scheme for the ASEAN Free Trade Area (CEPT Agreement), signed on January 28, 1992, and its Interpretative Notes.

In 2017, when RA 10963,[9] otherwise known as the "Tax Reform for Acceleration and Inclusion (TRAIN)" law, was enacted and made effective on January 1, 2018, purely EVs were

[8] Entitled, "Modifying the Rates of Import Duty on Components, Parts and Accessories for the Assembly of Hybrid, Electric, Flexible Fuel and Compressed Natural Gas Motor Vehicles Under Section 104 of the Tariff and Customs Code of 1978, as Amended", (January 12, 2006).

[9] Entitled, "An Act Amending Sections 5, 6, 24, 25, 27, 31, 32, 33, 34, 51, 52, 56, 57, 58, 74, 79, 84, 86, 90, 91, 97, 99, 100, 101, 106, 107, 108, 109, 110, 112, 114, 116, 127, 128, 129, 145, 148, 149, 151, 155, 171, 174, 175, 177, 178, 179, 180, 181, 182, 183, 186, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 232, 236, 237, 249, 254, 264, 269, and 288; Creating New Sections 51-A, 148-A, 150-A, 150-B, 237-A, 264-A, 264-B, and

made fully exempt from the excise tax on automobiles while HEVs were subjected to 50% of the applicable excise tax rates on automobiles.

RA 11534[10], otherwise known as the Corporate Recovery and Tax Incentives for Enterprises (CREATE) Act, was signed by former President Duterte on March 26, 2021, to serve as a fiscal stimulus for businesses, especially with the effects brought about by the COVID-19 pandemic. Aside from reducing income tax rates for micro, small, and medium enterprises and large corporations, the law also rationalized the fiscal incentives system of the country by making it performance-based, time-bound, targeted, and transparent.

Section 292 of the National Internal Revenue Code (NIRC) of 1997, as amended by the CREATE Act, states that appropriate tax incentives shall be granted to registered enterprises only to the extent of their approved registered project or activity as listed under the Strategic Investment Priority Plan (SIPP).

Green ecosystems, health-related activities, defense-related activities, industrial value chain gaps, and food security-related activities are among the priority activities under Tier II, pursuant to Memorandum Order No. 61[11] dated May 24, 2022, which approves the 2022 SIPP. Electric vehicle assembly (pure EV, PHEV, HEV, fuel cell EV), manufacture of EV parts, components, and systems, and establishment and operation of EV infrastructures are all covered by 'Green Ecosystems'. As such, these activities are presently eligible to avail of the tax incentives stipulated under Title XIII, Section 294 of the NIRC of 1997, as amended by the CREATE Act, to wit: (See Table 7.)

265-A; and Repealing Sections 35, 62, and 89; All Under Republic Act No. 8424, Otherwise Known as the National Internal Revenue Code of 1997, as Amended, and for Other Purposes", (December 19, 2017).

[10] Entitled, "An Act Reforming the Corporate Income Tax and Incentives System, Amending for the Purpose Sections 20, 22, 25, 27, 28, 29, 34, 40, 57, 109, 116, 204 and 290 of the National Internal Revenue Code of 1997, as Amended, and Creating Therein New TITLE XIII, and for Other Purposes", (March 26, 2021).

[11] Entitled, "Approving the 2022 Strategic Investment Priority Plan", (May 24, 2022).

Table 7

Duration of Tax Incentives for Tier II Activities Under the CREATE Act[12]

Location Tier	Duration of tax incentives	
	Domestic market enterprise	Export-oriented enterprise
National Capital Region (NCR)	5 years Income tax holiday (ITH) + 5 years Enhanced Deductions (ED), and a maximum of 12 years customs duty exemptions on the importation of capital equipment, raw materials, spare parts, or accessories from the date of registration	5 years ITH + 10 years ED/SCIT, and a maximum of 17 years customs duty exemptions on the importation of capital equipment, raw materials, spare parts, or accessories, VAT zero-rating on local purchases, and VAT exemption on importation from the date of registration
Metropolitan areas or areas contiguous and adjacent to the NCR	6 years ITH + 5 years ED, and a maximum of 12 years customs duty exemptions on the importation of capital equipment, raw materials, spare parts, or accessories from the date of registration	6 years ITH + 10 years ED/SCIT, and a maximum of 17 years customs duty exemptions on the importation of capital equipment, raw materials, spare parts, or accessories, VAT zero-rating on local purchases, and VAT exemption on importation from the date of registration
All other areas	7 years ITH + 5 years ED, and a maximum of 12 years customs duty exemptions on the importation of capital equipment, raw materials, spare parts, or accessories from the date of registration	7 years ITH + 10 years ED/SCIT, and a maximum of 17 years customs duty exemptions on the importation of capital equipment, raw materials, spare parts, or accessories, VAT zero-rating on local purchases, and VAT exemption on importation from the date of registration

Under the EVIDA law, on the other hand, the following fiscal incentives are provided to players in the EV industry:

a. Inclusion of the following activities in the SIPP, subject to an evaluation process, and possible entitlement to the incentives and for the length of time as provided under EO 226, otherwise known as the "Omnibus Investments Code of 1987", as amended by the CREATE Act, and Title XIII of the NIRC of 1997, as amended, and other applicable laws:

[12] Rule 3, Section 6(A) of Implementing Rules and Regulation of Title XIII of CREATE Act.

i. Manufacture and assembly of EVs, charging stations, batteries, and parts and components; and

ii. Establishment and operations of charging stations and other related support infrastructures such as research and development centers, training centers, testing centers, and waste treatment facilities.

In addition, the Department of Trade and Industry (DTI), through the BOI, shall recommend an EV incentive strategy, for approval by the Fiscal Incentives Review Board (FIRB), as part of the manufacturing component of the Comprehensive Roadmap for the Electric Vehicle Industry (CREVI), similar to EO 182, s. of 2015, otherwise known as the "Comprehensive Automotive Resurgence Strategy Program".

b. Entitlement to the incentives under RA 10963, otherwise known as the TRAIN law, of the importation of CBUs of EVs, provided that in the case of imported electric jeepneys and electric tricycles, the Department of Finance, upon the recommendation of the DTI, may suspend the exemption to protect local manufacturers.

c. Exemption from paying duties for eight years of importing CBUs of charging stations.

d. Inclusion in the SIPP, subject to an evaluation process, of the importation of capital equipment and components used in the manufacture or assembly of EVs and construction or installation of charging stations and possible entitlement to the incentives and for the length of time as provided under EO 226, as amended Title XIII of the NIRC of 1997, as amended, and other applicable laws.

e. Percentage discount for BEVs (30%) and HEVs (15%) on the MVUC imposed by the LTO under RA 8794, as well as vehicle registration and inspection fees, for a period of eight years from the effectivity of the law.

Section 25 of the EVIDA law also provides non-fiscal incentives to participants in the EV industry, which shall be in force for eight years from the effectivity of the Act. These are as follows:

a. For EV users:

i. Priority registration and renewal of registration and issuance of a special type of vehicle plate by the LTO;

ii. Exemption from the mandatory unified vehicular volume reduction program, number-coding scheme, or other similar schemes implemented by the Metropolitan Manila Development Authority, other similar agencies, and local government units;

iii. Expeditious processing by the Land Transportation Franchising and Regulatory Board of applications for the franchise to operate, including its renewal, for public utility vehicle operators that are exclusively utilizing EVs; and

iv. Availment of Technical Education and Skills Development Authority training programs on EV assembly, use, maintenance, and repair for its employees.

b. For EV manufacturers and importers: Expeditious processing by the Bureau of Customs on the importation of parts and components for the manufacture and assembly of EVs; and

c. For EV manufacturers: Permission may be granted by the government to allow expert foreign nationals to be employed under a form of the technology transfer agreement, subject to the guidelines to be issued by the Department of Labor and Employment, the Professional Regulatory Commission, and the DTI.

d. Concessional financial packages from government financial institutions and other financial institutions shall be encouraged for entities engaged in the: (1) manufacture and assembly of EVs, charging stations, batteries, and parts and components, and (2) establishment and operations of charging stations and other related infrastructures such as research and development centers, training centers, testing centers, and waste treatment facilities.

e. Preferential interest rates and payment scheme on consumer loans for the acquisition of EVs and charging stations.

f. The Bangko Sentral ng Pilipinas shall encourage banks to lend a certain percentage of their portfolio to EV, charging stations, and battery manufacturers, assemblers, and end users, provided that financing packages for EV fleets shall be prioritized and the procedure shall be streamlined.

V. ASEAN POLICY SUPPORT AND INCENTIVES FOR ITS EV INDUSTRY

According to an article from the Asian Development Bank – South East Asia Development Solutions (SEADS)[13], Southeast Asia is emerging as a potential market and manufacturing hub for EVs. The article also references information from Mordor Intelligence[14] that the ASEAN EV market is estimated at nearly $500 million in 2021 and forecasts it to grow to $2.7 billion by 2027 (SEADS, 2022). According to the Center for

[13] South East Asia Development Solutions was created to sow seeds of growth to help member countries of the Asian Development Bank become prosperous, knowledge-based, and sustainable economies.

[14] Mordor Intelligence is a fully revenue-funded organization founded in 2014 which have partnered with 4,000 plus enterprises across 20 industries, to deliver precise data and actionable insights in over 6,000 projects.

Strategic and International Studies (CSIS)[15], Southeast Asian countries are taking notable steps to establish their domestic industries as an essential part of the EV ecosystem by developing materials that support supply chain resilience and implementing economic policies that facilitate domestic adoption (Fallin and Lee, 2022). One of these policies is establishing a package of incentives to attract investments in the EV industry.

In Malaysia, EV manufacturers can take advantage of a number of tax incentives, such as excise tax and import duty exemptions, as well as sales and service tax waivers. Further, EV owners can claim tax relief for owning an EV. Only fully or pure electric vehicles are eligible for Malaysia's tax incentives, which fall into three categories as follows (ASEAN Briefing, 2022): (See Table 8.)

Table 8

Malaysia's Tax Incentives Per Category

Category	Incentives
Imports	Imported CBUs have full import and excise tax duty exemption until the end of 2023.
Local assembly	Locally assembled, completely knocked down (CKD) units have full import and excise duty exemptions and a sales and service tax waiver until the end of 2025.
Owners	EV owners are exempted from road tax and can claim a personal tax exemption of up to 2,500 ringgit (US$571)[16] for costs relating to EV charging hardware and services, including the purchase, installation, rental, and subscription fees of EV charging facilities, until the end of 2023.

Thailand, on the other hand, has introduced assistance measures for its EV industry by exempting investments in the manufacturing of advanced vehicle technologies from corporate income tax (CIT) for a maximum of eight years. BEV investment projects are eligible for CIT exemption from five to eight years. In contrast, PHEV investment projects are eligible for a CIT exemption of three years and an exemption from import tariffs on production machinery. In the case of investments in producing HEVs, only the exemption from import tariffs on production machinery is available to investing companies. On the other hand, enterprises that manufacture EV components are eligible for an eight-year CIT exemption (Schroeder and Iwasaki, 2021). (See Table 9.)

[15] The CSIS is a bipartisan, nonprofit policy research organization founded in 1962 and is dedicated to advancing practical ideas to address the world's greatest challenges. It organizes conferences, publish, lecture and make media appearances that aim to increase the knowledge, awareness, and salience of policy issues with relevant stakeholders and the interested public.

[16] Prevailing rate as of June 8, 2022.

Table 9

CIT Exemption in Thailand for EV Investment Projects

Particular	CIT exemption (in years)
Manufacturers engaged in BEV	5 to 8
Manufacturers engaged in PHEV	3
Manufacturers engaged in HEV	None
Manufacturers engaged in EV components	8

Note. Manufacturers engaged in HEV are only granted import tariff exemption on production machinery. Sourced from https://www.eria.org/uploads/media/Research-Project-Report/2021-03-Promotion-Electromobility-ASEAN/5_ch.1-Current-Situation-Electric-Vehicle-ASEAN-2611.pdf

As part of its ambitious aim to convert 50% of its entire automobile output to EVs by 2030 and become a production hub for cleaner vehicles in Southeast Asia, Thailand has provided additional incentives for its EV industry on top of the CIT exemption. The package comprises subsidy programs[17], import duty reduction, and excise tax cuts as follows (ASEAN Briefing, 2022):

a. A 70,000 Thai baht (THB) (US$2,111)[18] subsidy per EV unit for passenger cars with 10 to 30 kWh battery capacity for CKD and CBU units;

b. A 150,000 THB (US$4,523)[19] subsidy for each EV unit for passenger cars with more than 30kWh battery capacity for CKD and CBU units;

c. An 18,000 THB (US$542)[20] subsidy for electric motorcycles from eligible car producers between 2022-2023;

d. Exemption from import duties on important electrical components: batteries, traction motors, compressors for battery EVs, battery management systems, drive control units, and reduction gear between 2022-2025;

[17] The subsidy programs are funded by 3 billion THB (US$90 million) from the 2022 central budget and from the longer-term 40 billion THB (US$1.2 billion) investment in the EV industry between 2023 to 2025.

[18] Prevailing rate as of February 2022.

[19] Ibid.

[20] Ibid.

e. A 40% reduction in import duty for CBU of battery EVs priced up to 2 million THB (US$61,805)[21] and a 20% reduction for those priced between 2 million THB (US$61,805)[22] and 7 million THB (US$211,278)[23] from 2022 to 2023; and

f. Excise tax cut from 8% to 2% for imported EVs.

These incentives are said to initially apply to 27 model types of EVs comprising of: (a) eco-cars with 10 seats or less; (b) electric pick-ups; (c) hydrogen fuel cell-powered trucks; (d) EVs with 10 seats or less; and (e) plug-in four-door passenger pick-ups.

In Singapore, to support the adoption of EVs and eventually phase out the usage of ICE vehicles, the government adopted a three-pronged approach via tax incentives, regulations, standards, and EV charger deployment. On tax incentives, the following are granted to lower the cost of owning an electric car, particularly mass-market models:

a. EV Early Adoption Incentive (EEAI) from January 1, 2021, to December 31, 2023: Owners who register fully electric cars will receive a rebate of 45% off the Additional Registration Fee (ARF), capped at SG$20,000 (US$14,600)[24]. This is seen to narrow the upfront gap between electric and ICE cars.

b. Enhanced Vehicular Emissions Scheme (VES) from January 1, 2021, to December 31, 2025: Rebates for certain categories of vehicles will be increased by SG$5,000 (US$3,650)[25] for cars, and SG$7,500 (US$5,475)[26] for taxis.

c. Additional Registration Fee (ARF)[27] floor reduction from January 1, 2022, to December 31, 2023: The ARF floor will be lowered from SG$5,000 (US$3,650)[28] to $0 for fully electric cars and taxis so that buyers of mass-market electric cars can enjoy the combined EEAI and VES rebates of up to SG$45,000 (US$32,850)[29].

[21] Prevailing rate as of March 10, 2022.

[22] Ibid.

[23] Ibid.

[24] Based on the Bangko Sentral ng Pilipinas Exchange Rate Bulletin on November 24, 2022.

[25] Ibid.

[26] Ibid.

[27] The ARF is a tax paid when registering a vehicle, and is calculated based on a percentage of a vehicle's Open Market Value – the cost of a vehicle imported into Singapore.

[28] Based on the Bangko Sentral ng Pilipinas Exchange Rate Bulletin on November 24, 2022.

[29] Ibid.

d. Road taxes for fully electric and petrol-electric cars will be reduced by up to 34% for cars in the 90-230kW power rating bracket.

In terms of EV charger deployment, the Singapore government aims to deploy 60,000 EV charging points across Singapore by 2030, comprising 40,000 in public car parks and 20,000 in private premises.

On the other hand, the Indonesian government has solidified its support for developing the domestic EV industry through several policies and regulations. The most notable regulation is Presidential Decree No. 55/2019 (PR 55/2019), which firmly cements the development of the domestic EV industry as a national priority, stemming from government efforts to increase national energy efficiency and achieve clean, renewable energy in accordance with commitments to reduce greenhouse gas emissions (KPMG, 2021). The objective of the regulation is to accelerate the BEV program for road transportation by granting fiscal and non-fiscal incentives to industry players, as well as to make Indonesia a base for the production and export of BEVs, given that it is an important source of nickel laterite[30].

The key provisions of PR 55/2019 are as follows: (a) a program that seeks to accelerate the domestic BEV industry by insisting on the construction of domestic BEV manufacturing infrastructure; (b) stringent local content requirements for companies that will engage in BEV manufacturing and BEV components manufacturing (See Table 10.); and (c) grant of certain fiscal and non-fiscal incentives by the central and regional governments to business actors that are engaged in the acceleration program, including BEV manufacturing companies and BEV component manufacturing companies, public transport companies, companies renting out batteries (battery swap) for electric motor bikes, and individuals who use BEVs. These incentives include the following: (a) import duty incentives for any imports of BEV and its main components; (b) sales tax incentives on luxury goods; (c) incentives for the production of equipment for public electric charging stations; (d) incentives for export financing; and (e) financing support for the construction of public electric charging stations (Baker Mckenzie, 2019).

[30] According to the Broken Hill Proprietary Group Limited, an Australian multinational mining, metals, natural gas petroleum public company, nickel sulphide and laterite ore is used to make nickel metal, predominantly for the production of stainless steel as well as nickel sulphate, a key ingredient in the batteries that drive EVs.

Table 10

Local Content Requirements for Companies Manufacturing BEV and BEV Components

Type of BEV	Phase	Time frame	Minimum local content (in %)
Two or three-wheel (e.g., E-motorcycles)	1	2019 to 2023	40
	2	2024 to 2025	60
	3	2026 onwards	80
Four or more wheels	1	2019 to 2021	35
	2	2022 to 2023	40
	3	2024 to 2029	60
	4	2030 onwards	80

In Cambodia, the government has included EVs in its national transport policy, focusing on cities. In Cambodia's Long-Term Strategy for Carbon Neutrality submitted to the United Nations Framework Convention on Climate Change in December 2021, a commitment was incorporated to have 40% of EV cars and urban buses and 70% of electric motorbikes by the year 2050 (UNDP, 2022). As a first step towards this direction, the government of Cambodia reduced the special import duty for EVs from 30% to 10% in 2021, incentivizing people to shift towards EVs. Other incentives under consideration include reducing the road tax and registration fees for EVs (Nikkei Asia, 2022). Further, the government is encouraging investments in EV assembling plants to create more green jobs and investments while positioning Cambodia in the emerging global and regional supply chains for EVs. Similar to other countries worldwide, the need to expand charging stations is seen as one of the key drivers toward the large-scale adoption of EVs in Cambodia (UNDP, 2022).

In the case of Vietnam, the International Trade Administration (ITA)[31] reports that while the country's EV industry is still in its infancy, there is potential for significant growth. The number of electric automobiles in Vietnam, including hybrid, plug-in hybrid, and pure electric ones, is 140 in 2019, 900 in 2020, and an additional 600 units as of the first quarter of 2021 (mostly hybrid models). The charging infrastructure is the biggest challenge in realizing the sector's full potential. The first quick EV charging system was opened in Da Nang in December 2017 and funded by the Central Power Corporation in cooperation with Mitsubishi. In July 2021, VinFast[32] installed 500 EV charging stations and planned to have 2,000 charging stations set up nationwide with over 40,000 charging ports by the end of 2022. Besides VinFast, Porsche has built fast charging stations in Hanoi and Ho Chi Minh City (ITA, 2022).

[31] International Trade Administration is an agency in the United States Department of Commerce that promotes United States exports of non-agricultural US services and goods.

[32] VinFast is part of the VinGroup, which is known as the leading domestic EV manufacturer in Vietnam.

The ITA article also notes that the Vietnamese government has no explicit policy frameworks and incentives for the EV industry. Accordingly, through its sustainable development plan, the government has been applying several solutions to promote EVs, which include four focused areas, namely: (a) sustainable development; (b) green growth; (c) climate change; and (d) environmental protection laws. As regards incentives for its EV industry, the most recently issued decisions of the government are as follows:

a. Decree 10/2022 (effective from March 1, 2022), which exempts BEVs from the registration fee for the first three years and a 50% fee reduction for the next two years.

b. Law No. 03/2022/QH15 (effective from March 1, 2022), which reduces the excise tax rate for BEVs to 1% to 3% for a period of five years starting from the effectivity of the law. (ITA, 2022)

On the other hand, Laos aims to boost the percentage of EVs in the country to 1% by 2025 and over 30% by 2030. In line with these goals, the government has approved a policy that removes import restrictions on EVs to increase the number of EV dealers in Laos. However, vehicles imported and distributed in the country must meet international standards for quality, safety, after-sales service, and maintenance, including a waste management strategy for EV companies (Southeast Asia Infrastructure, 2021). Further, the government will encourage businesses to set up factories to produce EV parts and components and invest in developing charging stations throughout the country. Tax exemptions or reductions on the equipment imported for EV production and charging stations shall likewise be provided. Under the policy, the annual road tax for EVs will also be 30% less than that of petrol vehicles with equal engine power. The government has also appointed the Electricite du Laos (EDL) as the service provider for installing charging stations. The state-owned power company is instructed not to charge meter fees to residences or businesses that use these facilities. The EDL shall also provide priority EV parking slots and charging stations in public areas (Vientiane Times, 2021).

In the case of Brunei, the Strategic Plan for the Ministry of Transport and Infocommunications, or the MTIC 2025, targets to increase the number of EVs by 50% by 2025 (Ministry of Transport and Infocommunications, 2020). In 2021, its government launched the Electric Vehicle Pilot Project, which aims to provide exposure to the technology direction, namely EV usage, its benefits, and the vehicle's charging equipment. This is apart from studying and identifying the public's perception and acceptance of EVs toward change from conventional vehicles to EVs in the country. The project will run for two years and is aligned with achieving the goal of Strategy 3 (Electric Vehicles) under the Brunei Darussalam National Climate Change Policy (BNCCP)[33](Brunei Gazette, 2021). Available data shows,

[33] Strategy 3 of the BNCCP seeks to reduce Brunei Darussalam's carbon emissions from the land transportation sector by increasing the share of EVs to 60% of annual sales by 2035. The strategy will be carried out by the Electric Vehicle Joint Task Force, co-led by the Ministry of Transport and Infocommunications and Ministry of Energy. It has for its strategic objectives the following: (a) Develop policies and programmes to

however, that EV adoption in Brunei has remained low since the launch of the EV Pilot Project in 2021. To date, there are only 19 EVs registered in Brunei, and the owners primarily use their own home charging units to power their vehicles. A mid-term review of the project revealed areas requiring attention and evaluation, including adequate charging infrastructure (from home charging to a network of rapid charging stations), impact on the national power grid, associated life-cycle costs, and consumer behavior (Azahari, 2022).

VI. CONCLUSION

The trend toward EV-related activities is no longer inevitable. With growing concerns for the environment and the unpredictability of fuel prices, many countries all over the world are considering and integrating EVs into their transport network. In the ASEAN, while the uptake and initiatives are not as fast and robust as those in European countries, there have already been strategic plans and policies put in place to set the direction for the EV industry in the different states.

For its part, the Philippine government has already demonstrated strong national support for promoting EVs. It enhanced its policy that will not only enable an environment for the development of EVs as an attractive and feasible mode of transportation in the country that could aid in reducing dependence on fossil fuels, generate employment, and promote the health and well-being of the population through the use of low emission and other alternative energy technologies but would also incentivize the different players in the EV industry.

Moreover, the CREVI, serving as the national development plan for the EV industry, incorporated in the Philippine Energy Plan and the National Transport Policy, will ensure that the policy environment and support required for continuous industry development will be monitored and addressed.

support deployment of EVs; (b) Collaborate with key relevant government agencies, main industry players and the private sectors in identifying and implementing measures to promote the use of EV; (c) Identify and implement measures to shift public preference from ICE to EV; and (d) Develop measures to manage use of EV and ensure sustainable use of EV. Its performance indicators shall be the following; (a) number of EVs on the road (in units); (b) number of ICE vehicles on the road (in units); (c) number of charging stations (in units); (d) electricity consumption at charging station (in kWh); and (e) petroleum product consumption at petro station (in kilotonne of oil equivalent).

REFERENCES

ASEAN Briefing (2022, June). Electric Vehicles in Malaysia: Tax Incentives For Owners and Manufacturers. Retrieved September 6, 2022, from https://www.aseanbriefing.com/news/electric-vehicles-in-malaysia-tax-incentives-for-owners-and-manufacturers/

ASEAN Briefing (2022, May). Thailand Issues New Incentive Package for Electric Vehicle Industry. Retrieved September 6, 2022, from https://www.aseanbriefing.com/news/thailand-issues-new-incentive-package-for-electric-vehicle-industry/

Baker Mckenzie. (2019, September). Charging up Indonesia's regime on battery electric vehicles. Retrieved November 15, 2022, from https://tinyurl.com/muew6cap

Bangko Sentral ng Pilipinas Exchange Rate Bulletin. Retrieved November 24, 2022, from Bangko Sentral ng Pilipinas Statistics - Exchange Rate (bsp.gov.ph)

Broken Hill Proprietary. (n.d.). Nickel Properties, facts, uses, and production. Retrieved November 15, 2022, from https://www.bhp.com/-/media/documents/business/2019/191119_whatisnickel.pdf

Center for Strategic and International Studies. About Us. Retrieved November 28, 2022, from https://www.csis.org/programs/about-us

Choudhury S. (2021, July 26). Are electric cars "green"? The answer is yes, but it's complicated. CNBC. Retrieved November 8, 2022, from https://www.cnbc.com/2021/07/26/lifetime-emissions-of-evs-are-lower-than-gasoline-cars-experts-say.html

CNA. (n.d.). Budget 2021: More Incentives to encourage early adoption of electric vehicles. Retrieved September 6, 2022, from https://www.channelnewsasia.com/singapore/budget-2021-singapore-electric-vehicles-adoption-incentives-354531

Ha. T. and Manongdo P. (2021, May). Electric Vehicle in the Philippines: Business Opportunities, Market Barriers, and Policy Signals p.11. Eco-Business. Retrieved June 13, 2022, from https://eb-production-media.s3.amazonaws.com/clients/research_paper_reports/EB-Report-BE-Manila-Electric-Vehicles-2021-2.pdf

EPA. (n.d.). Carbon Pollution from Transportation. Retrieved September 6, 2022, from https://www.epa.gov/transportation-air-pollution-and-climate-change/carbon-pollution-transportation

Executive Order No. 488 series of 2006 (January 12, 2006). Modifying the Rates of Import Duty on Components, Parts, and Accessories for the Assembly of Hybrid, Electric, Flexible Fuel, and Compressed Natural Gas Motor Vehicles Under Section 104 of the Tariff and Customs Code of 1978, as Amended.

Fallin, D. and Lee, K. (2022, August 31). Southeast Asia Hopes to Become the Next EV Hub. CSIS. Retrieved November 24, 2022, from https://www.csis.org/blogs/new-perspectives-asia/southeast-asia-hopes-become-next-ev-hub

Gines Jr. B. (2021, December 21). McDonald to have EV charging stations. The Manila Times. Retrieved November 28, 2022, from

https://www.manilatimes.net/2021/12/21/business/corporate-news/mcdonalds-to-have-ev-charging-stations/1826670

Grecia, L. (2022, July 9). Since January 2022, diesel prices have seen a P43/L net increase. Top Gear. Retrieved on July 13, 2022, from https://www.topgear.com.ph/news/motoring-news/fuel-price-increase-january-to-july-2022-a4354-20220708

Implementing Rules and Regulations of Republic Act No. 11534 (June 21, 2021). Implementing Rules and Regulations of TITLE XIII of Republic Act No. 8424, Otherwise Known As The "National Internal Revenue Code of 1997" " as Amended By Republic Act No. 11534 or the "Corporate Recovery and Tax Incentives For Enterprises (CREATE) Act.

International Trade Administration. (2020, April 22). Philippine Electric Vehicle Market. Retrieved October 10, 2022, from https://www.trade.gov/market-intelligence/philippines-electric-vehicles-market

KPMG. (2021, July). EV & EV Battery Development Plan in Indonesia. Retrieved November 14, 2022, from https://assets.kpmg/content/dam/kpmg/id/pdf/2021/07/id-ev-and-battery-development-plan-indonesia.pdf

Kristan L. (2022, June). What is battery swapping, and is it a good idea? Auto Trader. Retrieved December 6, 2022, from https://www.autotrader.co.uk/content/news/what-is-battery-swapping-and-is-it-a-good-idea?refresh=true

Memorandum Order No. 61 (May 24, 2022). Approving the 2022 Strategic Investment Priority Plan.

Ministry of Transport. (n.d.). Electric Vehicles. Retrieved November 24, 2022, from https://www.mot.gov.sg/what-we-do/green-transport/electric-vehicles

Mordor Intelligence. (n.d). About Us. Retrieved November 28, 2022, from https://www.mordorintelligence.com/about.

Nikkei Asia (2022, May). Cambodia builds up EV infrastructure to speed electric ambitions. Retrieved September 6, 2022, from https://asia.nikkei.com/Business/Automobiles/Cambodia-builds-up-EV-infrastructure-to-speed-electric-ambitions

NISSAN. (n.d.). Nissan Kicks e-Power. Retrieved from https://www-asia.nissan-cdn.net/content/dam/Nissan/ph/brochures/FA%20KICKS%20BROCHURE%20WEB_1665443157.pdf

Ochave, R. (2022, April 29). SM Supermalls launches free EV charging stations in four malls. Retrieved November 28, 2022, from https://www.bworldonline.com/corporate/2022/04/29/445381/sm-supermalls-launches-free-ev-charging-stations-in-four-malls/

Office of Energy Efficiency & Renewable Energy (n.d.). Electric Vehicle. Retrieved November 28, 2022, from https://www.energy.gov/eere/femp/electric-vehicle-technology-overview

Republic Act 11534 (March 26, 2021). An Act Reforming the Corporate Income Tax and Incentives System, Amending for the Purpose Sections 20, 22, 25, 27, 28, 29, 34, 40, 57, 109, 116, 204, and 290 of the National Internal Revenue Code of 1997, as Amended, and Creating Therein New TITLE XIII, and for Other Purposes.

Republic Act No. 10963 (December 19, 2017). An Act Amending Sections 5, 6, 24, 25, 27, 31, 32, 33, 34, 51, 52, 56, 57, 58, 74, 79, 84, 86, 90, 91, 97, 99, 100, 101, 106, 107, 108, 109, 110, 112, 114, 116, 127, 128, 129, 145, 148, 149, 151, 155, 171, 174, 175, 177, 178, 179, 180, 181, 182, 183, 186, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 232, 236, 237, 249, 254, 264, 269, and 288; Creating New Sections 51-A, 148-A, 150-A, 150-B, 237-A, 264-A, 264-B, and 265-A; and Repealing Sections 35, 62, and 89; All Under Republic Act No. 8424, Otherwise Known as the National Internal Revenue Code of 1997, as Amended, and for Other Purposes.

Schroeder M. and Iwasaki F. (2021, May). Current Situation of Electric Vehicles in ASEAN. Retrieved September 6, 2022, from https://www.eria.org/uploads/media/Research-Project-Report/2021-03-Promotion-Electromobility-ASEAN/5_ch.1-Current-Situation-Electric-Vehicle-ASEAN-2611.pdf

South East Asia Development Solutions. (n.d.). About. Retrieved November 28, 2022, from https://seads.adb.org/about

Southeast Asia Development Solutions. (2022, August 10). ASEAN Gears Up for a Shift to Electric Vehicles. ADB. Retrieved November 24, 2022, from https://seads.adb.org/solutions/asean-gears-shift-electric-vehicles

Tabamo, D. (2021, May 11). How much it costs to charge a Nissan Leaf and 4 more fun facts about this EV. Top Gear. Retrieved September 6, 2022, from https://www.topgear.com.ph/features/feature-articles/cost-to-charge-nissan-leaf-philippines-a960-20210511

Tojo Motors (n.d.). Early Adopters Reaping Great Results. Retrieved September 6, 2022, from http://www.tojomotors.com/programs/puv-modern-e-jeepney/

Unbox.ph (2022, July). Shell Philippines Launches its First Charging Station for EVs. Retrieved September 6, 2022, from https://unbox.ph/editorials/shell-philippines-launches-its-first-charging-station-for-evs/

Unbox.ph (2022, July). List: EV Charging Stations in Metro Manila. Retrieved September 6, 2022, from https://unbox.ph/editorials/list-ev-charging-stations-in-metro-manila/

UNDP. (2022, May 6). Electric Vehicles: on the road to sustainable mobility in Cambodia and beyond. Retrieved November 15, 2022, from https://www.undp.org/cambodia/news/electric-vehicles-road-sustainable-mobility-cambodia-and-beyond

U.S. Department of Energy. (n.d.). How do All-Electric Cars Work. Retrieved November 14, 2022, from https://afdc.energy.gov/vehicles/how-do-all-electric-cars-work

US Department of Energy. (n.d.) Alternative Fuels Data Center. Retrieved November 8, 2022, from https://afdc.energy.gov/vehicles/electric_basics_hev.html#regenerative

Zigwheels (n.d.). Electric Cars in the Philippines. Retrieved September 6, 2022, from https://www.zigwheels.ph/new-cars/electric

Annex A.

Components	Function	Types of EV			
		All electric	Plug-in hybrid	Hybrid	Fuel cell hydrogen
Battery (auxiliary)	Provides electricity to start the car before the traction battery is engaged; it also powers vehicle accessories.		✓	✓	✓
Battery (all-electric auxiliary)	Provides electricity to power vehicle accessories.	✓			
Battery pack	Stores energy generated from regenerative braking and provides supplemental power to the electric traction motor.				✓
Charge port	Allows the vehicle to connect to an external power supply to charge the traction battery pack.	✓	✓		
DC/DC converter	Converts higher-voltage DC power from the traction battery pack to the lower-voltage DC power needed to run vehicle accessories and recharge the auxiliary battery.	✓	✓	✓	✓

Components	Function	Types of EV			
		All electric	Plug-in hybrid	Hybrid	Fuel cell hydrogen
Electric generator	Generates electricity from the rotating wheels while braking, transferring that energy back to the traction battery pack. Some vehicles use motor generators that perform both the drive and regeneration functions.		✓	✓	
Electric traction motor	Using power from the traction battery pack, this motor drives the vehicle's wheels. Some vehicles use motor generators that perform both the drive and regeneration functions.	✓	✓	✓	✓
Fuel cell stack	An assembly of individual membrane electrodes that use hydrogen and oxygen to produce electricity.				✓
Exhaust system	Channels the exhaust gases from the engine out through the tailpipe. A three-way catalyst is designed to reduce engine-out emissions within the exhaust system.		✓	✓	
Fuel Filler	A nozzle from a fuel dispenser attaches to the receptacle on the vehicle to fill the tank.		✓	✓	✓

Components	Function	Types of EV			
		All electric	Plug-in hybrid	Hybrid	Fuel cell hydrogen
Fuel Tank (Gasoline)	Stores gasoline on board the vehicle until the engine needs it.		✓	✓	
Fuel Tank (Hydrogen)	Stores hydrogen gas onboard the vehicle until it's needed by the fuel cell.				✓
Internal Combustion Engine (spark-ignited)	Fuel is injected into either the intake manifold or the combustion chamber, where it is combined with air, and the spark from a spark plug ignites the air/fuel mixture.		✓	✓	
Onboard charger	Takes the incoming AC electricity supplied via the charge port and converts it to DC power for charging the traction battery. It also communicates with the charging equipment and monitors battery characteristics such as voltage, current, temperature, and state of charge while charging the pack.	✓	✓		
Power Electronics Controller	Manages the flow of electrical energy delivered by the traction battery, controlling the speed of the electric	✓	✓	✓	✓

Components	Function	Types of EV			
		All electric	Plug-in hybrid	Hybrid	Fuel cell hydrogen
	traction motor and the torque it produces.				
Thermal System (cooling)	Maintains a proper operating temperature range of the engine, electric motor, power electronics, and other components.	✓	✓	✓	✓
Traction Battery Pack	Stores electricity for use by the electric traction motor.	✓	✓	✓	
Transmission	The transmission transfers mechanical power from the engine and/or electric traction motor to drive the wheels.	✓	✓	✓	✓

Annex B.

List and Location of Available Electric Vehicle Charging Station (EVCS) in the Philippines, as of 06 December 2022

No.	Operator	Classification	No. of Chargers	Region
1	888Street, Pasig	AC	1	NCR
2	A. Vidal Romai	AC	1	NCR
3	Apocalypse Custom Electric Motorcycles	AC	1	NCR
4	Ateneo De Manila University (private use only)	AC	4	NCR
5	Ayala Alabang (Muntinlupa)	DC	2	NCR
6	Ayala Malls Circuit Makati	AC	1	NCR
7	Basilan Open Basketball Court, Muntinlupa	AC	4	NCR
8	Bight Electric Bike - Valenzuela Valenzuela	AC	6	NCR
9	BroFeast Bar & Restaurant, Taguig	AC	1	NCR
10	California Ecobike	AC	1	NCR
11	CTP Asean Tower, Alabang, Muntinlupa	AC	4	NCR
12	DENR-Environmental Management Bureau	DC	1	NCR
13	DOE EV Charging Station	DC	1	NCR
14	DOST - PCIEERD	DC	1	NCR
15	DTI - Manufacturing Industries Service Board of Investment (BOI)	DC	1	NCR
16	Ecodrive Amoranto Branch	AC	1	NCR
17	Ehdcris Store	AC	1	NCR
18	Electric Vanguard	AC	2	NCR
19	Emicor Inc	AC	1	NCR
20	E-mtb.ph	AC	2	NCR
21	eSakay Makati Mandaluyong Swapping Station (private use only)	BSS	1	NCR
22	Eyong's Tattoo, Quezon City, Kalakhang, Manila	AC	1	NCR
23	Famous Parts and Services, Navotas	AC	1	NCR
24	Greenwoods	AC	1	NCR
25	Hidden Tapsihan Main	AC	1	NCR
26	GXSun, QC	AC	1	NCR
27	Horizon Homes, Shangri La at the Fort / Shangri La	DC	1	NCR
28	Kenwei, Novaliches	AC	1	NCR
29	Kenwei, Las Pinas	AC	1	NCR
30	Malacañang Motor Pool Office/ Office of the President (OP) Proper	DC	1	NCR
31	McDonald's Green and Good stores - Shaw Boulevard	AC	1	NCR
32	McDonald's Green and Good stores - Wack-Wack, Shaw Blvd. Mandaluyong	AC	1	NCR
33	Meadowmere Resort, Main St.	AC	1	NCR
34	McDonald's - GOLDEN ARCHES DEVELOPMENT CORPORATION	DC	1	NCR
35	Meralco - Valenzuela Sector	DC	2	NCR
36	Meralco - Pasig Sector	DC	2	NCR
37	Meralco - Paranaque Sector	DC	2	NCR
38	Meralco - Manila Sector	DC	2	NCR
39	Meralco - Balintawak Sector	DC	2	NCR
40	Meralco Powerlab Lab	DC	2	NCR
41	Meralco Powerlab Tech	DC	8	NCR
42	Meralco - Alabang Business Center	DC	1	NCR
43	Meralco - Commonwealth Business Center	DC	1	NCR
44	Meralco - Malabon Business Center	DC	1	NCR
45	Meralco - Marikina Business Center	DC	1	NCR
46	Meralco - Parañaque Business Center	DC	1	NCR
47	Meralco - España Business Center	AC	1	NCR
48	Meralco - Mandaluyong Business Center	AC	1	NCR
49	Meralco - Tutuban Business Center	AC	1	NCR
50	Meralco - Valenzuela Business Center	AC	1	NCR
51	Meralco - Balintawak Business Center	AC	1	NCR
52	Meralco - Caloocan Business Center	AC	1	NCR

List and Location of Available Electric Vehicle Charging Station (EVCS) in the Philippines, as of 06 December 2022

No.	Operator	Classification	No. of Chargers	Region
53	Meralco - Kamuning Business Center	AC	1	NCR
54	Meralco - Las Piñas Business Center	AC	1	NCR
55	Meralco - Makati Business Center	AC	1	NCR
56	Meralco - Novaliches Business Center	AC	1	NCR
57	Meralco - Pasig Business Center	AC	1	NCR
58	Meralco - Roosevelt Business Center	AC	1	NCR
59	Meralco - Taguig Business Center	AC	1	NCR
60	McDonald's Green and Good Stores - UN Avenue	AC	2	NCR
61	Meralco Charging Station	AC	1	NCR
62	Metropolitan Manila Development Authority (MMDA) Head Office Building	AC	3	NCR
63	Minoo Soft Cream Philippines, Quezon City	AC	1	NCR
64	MQUAD Property Management and Development Corp	AC	2	NCR
65	Muntinlupa Sports Center	AC	10	NCR
66	Net Group Buildings, BGC	AC	4	NCR
67	Nissan Mantrade Makati	AC	1	NCR
68	Prozza eTrike Swapping Station	BSS	1	NCR
69	Nissan Otis	AC	1	NCR
70	Pasig Electric Vehicle Charging Station	AC	4	NCR
71	Pink En Blue, Barangay Moonwalk, Metro Manila	AC	1	NCR
72	Porsche DC Charger	DC	1	NCR
73	Pumprime Enterprise (Unioil Congressional2 Station)	AC	1	NCR
74	Puray Street, Kalakhang Manila, Philippines	AC	1	NCR
75	SM Aura - B1 Parking	AC	2	NCR
76	SM BF Parañaque	AC	1	NCR
77	SM Bicutan	AC	1	NCR
78	SM Center Valenzuela	AC	1	NCR
79	SM Fairview	AC	1	NCR
80	SM Grand Central	AC	1	NCR
81	SM Mall of Asia - 3rd Level North Parking Building	AC	2	NCR
82	SM Manila	AC	1	NCR
83	SM Marikina	AC	1	NCR
84	SM Mega Mall	AC	2	NCR
85	SM North EDSA - 3rd Level North Parking Tower	AC	2	NCR
86	SM San Lazaro	AC	1	NCR
87	SM Southmall	AC	2	NCR
88	SM Sta. Mesa	AC	1	NCR
89	Tail G Nwow Only	AC	1	NCR
90	Tail G Pasay	AC	1	NCR
91	Tailg Mandaluyong	AC	1	NCR
92	The Podium	AC	2	NCR
93	Unioil - Congressional	AC	1	NCR
94	Unioil - EDSA Guadalupe	DC	1	NCR
95	Uptown Bonifacio	DC	2	NCR
96	Valenzuela Gateway Complex	AC	3	NCR
97	Vertis North Mall, QC	AC	1	NCR
98	Vito's Home, Sta. Ana, Manila	AC	1	NCR
99	Alabang Commercial Corporation	AC	2	NCR
100	North Triangle Depot Commercial Corporation	AC	2	NCR
101	ParkNCharge	AC	1	NCR
102	ALI Commercial Center Inc.	AC	2	NCR
103	Robinsons Galleria-Ortigas	AC	2	NCR
104	Cruisine de iloco, Laoag City	AC	1	Region 1
105	Thetuchels, Davao del Sur	AC	1	Region 11
106	Tojo eTrike swapping station - Butuan City	BSS	1	Region 13
107	Awesome Hotel	AC	1	Region 2
108	CharM eTrike Charging Station, Isabela	DC	2	Region 2
109	Solarius HQ	AC	2	Region 2

List and Location of Available Electric Vehicle Charging Station (EVCS) in the Philippines, as of 06 December 2022

No.	Operator	Classification	No. of Chargers	Region
110	Thunderbird Resort	AC	1	Region 2
111	TailG, Baliuag, Bulacan	AC	1	Region 3
112	TailG, Malolos, Bulacan	AC	1	Region 3
113	TailG, Plaridel, Bulacan	AC	1	Region 3
114	TailG, Pulilan, Bulacan	AC	1	Region 3
115	Angat, Bulacan	AC	2	Region 3
116	IPRO, Inc. - Unioil	AC	3	Region 3
117	Mabalacat, Pampanga	AC	1	Region 3
118	Meralco - Plaridel Sector – Construction	DC	1	Region 3
119	Meralco - Baliwag Business Center	AC	1	Region 3
120	Meralco - Sta. Maria Business Center	AC	1	Region 3
121	Scooter City Ebike, Bulacan	AC	1	Region 3
122	Angelo Levardo Senior High School	AC	10	Region 4
123	Batangas	AC	11	Region 4
124	Batulao Hiking	AC	1	Region 4
125	Carmona National High School	AC	10	Region 4
126	Carmona Park, Cavite	AC	10	Region 4
127	Carmona Public Market	AC	10	Region 4
128	Chepard Ebikes	AC	2	Region 4
129	D'bas Bulalohan, Tagaytay, Cavite	AC	1	Region 4
130	De La Salle Canlubang (private use only)	AC	2	Region 4
131	First Natgas Power Corp. (FNPC)	AC	1	Region 4
132	Herb Republic, Laguna	AC	1	Region 4
133	Hiro Aki Italian Pizza - Montalban	AC	1	Region 4
134	Integrated Micro-Electronics, Inc.	DC	1	Region 4
135	Joe's and Teos, Naic, Cavite	AC	1	Region 4
136	Kenwei, Cavite	AC	2	Region 4
137	Los Banos	AC	10	Region 4
138	Mabeck, Cavite	AC	1	Region 4
139	Meralco - Angono Business Center	DC	1	Region 4
140	Meralco - Dasmariñas Sector - Operations	DC	1	Region 4
141	Meralco - Rizal Sector Maintenance	DC	1	Region 4
142	Meralco - San Pablo Sector Maintenance	DC	1	Region 4
143	Meralco - Sta. Rosa Sector – Construction	DC	1	Region 4
144	Meralco - Batangas Business Center	AC	1	Region 4
145	Meralco - Calamba Business Center	AC	1	Region 4
146	Meralco - San Pablo – Sta Cruz Business Center	AC	1	Region 4
147	MonteCarlo Townhomes Subdivision	AC	6	Region 4
148	Pablo's Barbacoa, Laguna	AC	1	Region 4
149	Pearl Cuisine, Nasugbu, Batangas	AC	1	Region 4
150	Racers Hideout, Cavite	AC	1	Region 4
151	Ready to Ride Ph	DC	3	Region 4
152	Shell SLEX Mamplasan Northbound	DC	8	Region 4
153	Starbucks Nuvali, Sta. Rosa, Laguna	AC	1	Region 4
154	Tojo eTrike swapping station - Coron Palawan	BSS	1	Region 4
155	UCC Clockwork, Sta. Rosa, Laguna	AC	1	Region 4
156	Veronica Foods	AC	1	Region 4
157	SkyBright Solar PH	AC	1	Region 6
158	Tojo eTrike swapping station - Boracay (private use)	BSS	1	Region 6
159	McDonald's Upper East Bacolod	AC	1	Region 6
160	BTCPower Inc., Cebu	DC	1	Region 7
161	EVWealth eTrike swapping station - Naga (private use)	BSS	1	Region 7
162	Nissan Cebu South - V.Rama	AC	1	Region 7
163	Tojo eTrike swapping station - General Santos City	BSS	1	Region 7
164	Tojo eTrike swapping station - Naga (private use)	BSS	1	Region 7

Annex C.

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
87.02		**Motor vehicles for the transport of ten or more persons, including the driver.**		
	8702.10 to 8702.90.11	x x x		
	8702.90.12	- - - - CBU/Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of vehicles by participants in the commercial vehicle development program:		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - - x x x		
	8702.90.21	- - - - x x x		
	8702.90.22	- - - - CBU/Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of vehicles by participants in the commercial vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - x x x		
		- - - x x x		
	8702.90.31	- - - - x x x		
	8702.90.32	- - - - CBU/Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of vehicles by participants in the commercial vehicle		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - - x x x		
	8702.90.41	- - - - x x x		
	8702.90.42	- - - - CBU/Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of vehicles by participants in the commercial vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - x x x		
		- - - x x x		
	8702.90.51	- - - - x x x		
	8702.90.52	- - - - CBU/Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of vehicles by participants in the commercial vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - - x x x		
	8702.90.61	- - - - x x x		
	8702.90.62	- - - - CBU/Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of vehicles by participants in the commercial vehicle development program		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - - x x x		
	8702.90.91	- - - - x x x		
	8702.90.92	- - - - CBU/Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of vehicles by participants in the commercial vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
87.03		**Motor cars and other motor vehicles principally designed for the transport of persons (other than those of heading 87.02), including station wagons and racing cars.**		
	8703.10 to 8703.90.25	x x x		
		- - - - CBU / Other:		
	8703.90.26	- - - - - Of a cylinder capacity less than 1,800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.27	- - - - - Of a cylinder capacity 1,800 cc and above but less		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		than 2,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.28	- - - - - Of a cylinder capacity 2,000 cc and above but less than 2,500 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.31	- - - - - Of a cylinder capacity 2,500 cc and above but less than 3,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.32	- - - - - Of a cylinder capacity 3,000 cc and above		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
		- - Other, for the transport of 8 persons or less:		
		- - - x x x		
	8703.90.33 to 8703.90.36	x x x		
		- - - Four wheel drive vehicles, CBU / Other:		
	8703.90.37	- - - - Of a cylinder capacity less than 1,800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.38	- - - - Of a cylinder capacity 1,800 cc and above but less than 2,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.41	- - - - Of a cylinder capacity 2,000 cc and above but less than 2,500 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and**	0	0

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.		
		2. Other	3	3
		B. x x x		
	8703.90.42	- - - - Of a cylinder capacity 2,500 cc but less than 3,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.43	- - - - Of a cylinder capacity 3,000 cc and above		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
		- - - x x x		
	8703.90.44 to 8703.90.47	x x x		
		- - - Other:		
	8703.90.48	- - - - Of a cylinder capacity less than 1,800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		B. x x x		
	8703.90.51	- - - - Of a cylinder capacity 1,800 cc and above but less than 2,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.52	- - - - Of a cylinder capacity 2,000 cc and above but less than 2,500 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.53	- - - - Of a cylinder capacity 2,500 cc and above but less than 3,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.54	- - - - Of a cylinder capacity 3,000 cc and above		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
		- -Other, for the transport of 9 persons:		
		- - - x x x		
	8703.90.61 to 8703.90.65	x x x		
		- - - - - CBU / Other:		
	8703.90.66	- - - - - - Of a cylinder capacity less than 1,800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.67	- - - - - - Of a cylinder capacity 1,800 cc and above but less than 2,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.68	- - - - - - Of a cylinder capacity 2,000 cc and above but less than 2,500 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.71	- - - - - - Of a cylinder capacity 2,500 cc and above but less than 3,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.72	- - - - - - Of a cylinder capacity 3,000 cc and above		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
		- - - x x x		
	8703.90.73 to 8703.90.76	x x x		
		- - - Other four wheel drive vehicles, CBU / Other:		
	8703.90.77	- - - - Of a cylinder capacity less than 1,800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed**	0	0

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		natural gas (CNG) vehicles.		
		2. Other	3	3
		B. x x x		
	8703.90.78	- - - - Of a cylinder capacity 1,800 cc and above but less than 2,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.81	- - - - Of a cylinder capacity 2,000 cc and above but less than 2,500 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.82	- - - - Of a cylinder capacity 2,500 cc and above but less than 3,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.83	- - - - Of a cylinder capacity 3,000 cc and above		
		A. Components, parts and/or accessories imported		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
		- - - x x x		
	8703.90.84 to 8703.90.87	x x x		
		- - - Other:		
	8703.90.88	- - - - Of a cylinder capacity less than 1,800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.91	- - - - Of a cylinder capacity 1,800 cc and above but less than 2,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.92	- - - - Of a cylinder capacity 2,000 cc and above but less than 2,500 cc		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.93	- - - - Of a cylinder capacity 2,500 cc and above but less than 3,000 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
	8703.90.94	- - - - Of a cylinder capacity 3,000 cc and above		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motor vehicles by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	3	3
		B. x x x		
87.04		**Motor vehicles for the transport of goods.**		
	8704.10 to 8704.90.39	*x x x*		
		- - Completely Built-Up (CBU) / Other:		
		- - - g.v.w. not exceeding 5 t:		
	8704.90.41	- - - - Vans, pick-up trucks and similar vehicles		
		A. Components, parts and/or accessories imported		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
	8704.90.42	- - - - Ordinary lorries (trucks)		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
	8704.90.49	- - - - Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - - g.v.w. exceeding 5t but not exceeding 24t:		
	8704.90.51	- - - - Vans, pick-up trucks and similar vehicles		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		B. x x x		
	8704.90.52	- - - - Ordinary lorries (trucks)		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
	8704.90.59	- - - - Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
		- - - g.v.w. exceeding 24t:		
	8704.90.61	- - - - Vans, pick-up trucks and similar vehicles		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
	8704.90.62	- - - - Ordinary lorries (trucks)		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
	8704.90.69	- - - - Other		
		A. Components, parts and/or accessories imported from one or more countries for assembly of trucks by participants in the motor vehicle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
87.11		**Motorcycles (including mopeds) and cycles fitted with an auxiliary motor, with or without side-cars; side-cars.**		
	8711.10 to 8711.90.94	*x x x*		
		- - - CBU / Other:		
	8711.90.95	- - - - Not exceeding 200 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motorcycles by participants in the motorcycle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
	8711.90.96	- - - - Exceeding 200 cc but not exceeding 500 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motorcycles by participants in the motorcycle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed**	0	0

Hdg.	Tariff Code	Description	Rate of Duty (%)	
			MFN	CEPT
(1)	(2)	(3)	(4)	(5)
		natural gas (CNG) vehicles.		
		2. Other	1	3
		B. x x x		
	8711.90.97	- - - - Exceeding 500 cc but not exceeding 800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motorcycles by participants in the motorcycle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		
	8711.90.98	- - - - Exceeding 800 cc		
		A. Components, parts and/or accessories imported from one or more countries for assembly of motorcycles by participants in the motorcycle development program		
		1. **For assembly of hybrid (electric and gasoline/diesel), electric, flex-fuel (bio-ethanol and bio-diesel) and Compressed natural gas (CNG) vehicles.**	0	0
		2. Other	1	3
		B. x x x		

LEGISLATION AND ISSUANCES WITH IMPLICATIONS
March - April 2023

EXECUTIVE ORDER (EO)

Legislation	Subject	Date of Issue	Date of Effectivity
EO 21	Directing the Establishment of the Policy and Administrative Framework for Offshore Wind Development	April 19, 2023	Immediately

REVENUE REGULATIONS (RR)

Issuance	Subject	Date of Issue	Date of Effectivity
RR 2-2023	Prescribing the Use of Constructive Affixture of Documentary Stamp as Proof of Payment of Documentary Stamp Tax for Certificates Issued by Government Agencies or Instrumentalities (Published in Manila Times on April 19, 2023)	April 13, 2023	Fifteen days immediately after its publication in a newspaper of general circulation
RR 3-2023	Amending Certain Provisions of Revenue Regulations (RR) No. 16-2005, as Amended by RR No. 21-2021, to Implement Sections 294 (E) and 295 (D), Title XIII of the National Internal Revenue Code of 1997, as Amended by R.A. No. 11534 (CREATE Act), and Section 5, Rule 2 and Section 5, Rule 18 of the CREATE Act Implementing Rules and Regulations, as Amended	April 26, 2023	Immediately following its publication in a newspaper of general circulation or in the Official Gazette, whichever comes first

REVENUE MEMORANDUM ORDER (RMO)

Issuance	Subject	Date of Issue	Date of Effectivity
RMO 8-2023	Amending Certain Provisions of RMO No. 6-2023, Prescribing the Updated and Consolidated Policies, Guidelines, and Procedures for BIR Audit Program	March 20, 2023	Immediately
RMO 10-2023	Prescribing Supplemental Guidelines on the Application for Electronic Authority to Release Imported Goods (eATRIG) by Importers of Sweetened Beverages Through the Philippine National Single Window (NSW) System in Relation to RMO No. 14-2014	March 21, 2023	Immediately
RMO 15-2023	CY 2023 BIR Collection Goal Allocation, By Implementing Office Based on Medium-Term Revenue Program (MTRP) dated December 5, 2022	April 25, 2023	Immediately

REVENUE MEMORANDUM CIRCULAR (RMC)

Issuance	Subject	Date of Issue	Date of Effectivity
RMC 28-2023	Circularizing Republic Act No. 11898, Otherwise Known as the "Extended Producer Responsibility Act of 2022" and its Implementing Rules and Regulations	March 3, 2023	-
RMC 29-2023	Clarifies the Effect of Publication of the List of Taxpayers Determined as Cannot Be Located (CBL) Pursuant to Existing Guidelines	March 10, 2023	-

Issuance	Subject	Date of Issue	Date of Effectivity
RMC 30-2023	Reiterating the Basis of the Total Landed Value of Imported Automobiles as Defined Under Revenue Regulations No. 25-2003 in the Processing of Applications for Electronic Authority to Release Imported Goods (eATRIG) by Importers of Automobiles	March 15, 2023	Immediately
RMC 31-2023	Further Clarifies Imported Goods That Will No Longer Require the Issuance of "Authority to Release Imported Goods" by the Bureau of Internal Revenue Prior to Release by the Bureau of Customs	March 16, 2023	-
RMC 32-2023	Filing of Annual Income Tax Returns for Calendar Year 2022 as Well as Payment of Taxes Due Thereon Until April 17, 2023	March 16, 2023	-
RMC 33-2023	Clarification in the Issuance and Enforcement of Subpoena Duces Tecum	March 17, 2023	Immediately
RMC 35-2023	Clarifying the Application of the Eighteen (18)-Month Transitory Period in RA No. 11900, as reiterated in its Implementing Rules and Regulations and Revenue Regulations No. 14-2022	March 20, 2023	Immediately
RMC 36-2023	Availability of Other Registration-Related Online Transactions, Functions, and Features in the BIR Online Registration and Update System (ORUS)	March 20, 2023	-
RMC 40-2023	Availability of the Offline Electronic BIR Forms (eBIRForms) Package Version 7.9.4	March 29, 2023	-
RMC 41-2023	Announcing the Availability of Information Materials in Relation to Filing and Payment of Tax Returns and Step-by-Step Guide in Filing BIR Forms 1701, 1701A, and 1702-RT	March 29, 2023	-

Issuance	Subject	Date of Issue	Date of Effectivity
RMC 42-2023	Publishing the Full Text of the February 21, 2023 Letter from the Food and Drug Administration (FDA) of the Department of Health (DOH) Endorsing Updates to the List of VAT-Exempt Products Under Republic Act (R.A.) No. 10963 (TRAIN Law) and R.A. No. 11534 (CREATE Act)	April 4, 2023	-
RMC 43-2023	Further Clarifying Certain Policies on the Filing of Appeal Against Final Decision on Disputed Assessments (FDDA) Pursuant to Revenue Regulations No 12-99, as Amended	April 14, 2023	Immediately
RMC 44-2023	Supplemental Guidelines in the Filing of Annual Income Tax Returns (AITR) and Payment of Taxes Due Thereon for Taxable Year 2022	April 14, 2023	-
RMC 45-2023	Publishing the Full Text of Fiscal Incentives Review Board (FIRB) Advisory No. 004-2023 Clarifying the Issues Covering the Transfer of Registration with the Board of Investments (BOI) of Registered Business Enterprises (RBEs) in the Information Technology – Business Process Management (IT-BPM) Sector	April 19, 2023	-
RMC 46-2023	Publishing the Full Text of Fiscal Incentives Review Board (FIRB) Advisory No. 006-2023 Regarding Clarifications on the Supplemental Guidelines on the Registration with the Board of Investments (BOI) of Registered Business Enterprises (RBEs) in the Information Technology – Business Process Management (IT-BPM) Sector	April 19, 2023	-

OTHERS:

Issuance	Subject	Date of Issue	Date of Effectivity
Local Budget Circular No. 150[1]	Guidelines on the Release and Utilization of the Local Government Support Fund-Financial Assistance to Local Government Units and Support for Capital Outlays and Social Programs Under the FY 2023 General Appropriations Act, Republic Act No. 11936	March 8, 2023	Fifteen calendar days after its publication
BOC Customs Memorandum Order (CMO) No. 04-2023	Amendment of CMO No. 43-2019 Implementing the Fuel Marking Program Pursuant to DOF-BIR-BOC Joint Circular No. 001.2019	March 13, 2023	Immediately
BOC CMO No. 05-2023	Department of Trade and Industry Department Administrative Order No. 23-01, series of 2023 on the Definitive Anti-Dumping Measure Against the Importations of Ordinary Portland Cement Type 1 (AHTN 2017/2022 Subheading No. 2523.29.90) and Blended Cement Type 1P (AHTN 2017/2022 Subheading No. 2523.90.00) from Viet Nam	March 09, 2023	Immediately
BOC CMO No. 09-2023	Amendment to Annex "B" of CMO No. 19-2022 Entitled "Implementation of the Electronic Zone Transfer System (E-ZTS) for the Inter-Zone Transfer of Goods Between PEZA-Registered Enterprises (PREs)	April 20, 2023	Immediately
Department of Budget and Management-Department of Interior and Local Government-Department of	Revised Guidelines on the Release of the Twenty Percent (20%) Shares of Local Government Units (LGUs) in the Fire Code Fees	April 17, 2023	Immediately upon its complete publication in the Official Gazette or in newspaper of general

[1] https://www.dbm.gov.ph/wp-content/uploads/Issuances/2023/Local-Budget-Circular/LOCAL-BUDGET-CIRCULAR-NO-150-DATED-MAR-08-2023.pdf

Issuance	Subject	Date of Issue	Date of Effectivity
Finance Joint Circular No. 1, series of 2023[2]			circulation

[2] https://www.dbm.gov.ph/wp-content/uploads/Issuances/2023/Joint-Circular/DBM-DILG-JOINT-CIRCULAR-NO.1-S.2023-DATED-APRIL-17-2023.pdf

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