NATIONAL POLICY FOR 
ELECTRIC VEHICLE 
PUBLIC CHARGING 
INFRASTRUCTURE 

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Minister for Energy, Enterprise and Sustainable Development
Foreword

Climate change is one of the biggest challenges being faced by mankind, leading experts worldwide to reiterate the gravity of the matter if the levels of greenhouse-gas emissions continue to rise. The European Union has been at the forefront of the fight against climate change and Malta was amongst the first signatories to the Paris Agreement. Malta is committed to meet its targets and do its part as an EU Member State to reach carbon neutrality by 2050.

The Maltese Government’s commitment towards decarbonisation is reinforced by the number of schemes and initiatives launched, aimed at reshaping our mobility and making our energy sectors more sustainable. The electrification of mobility, investing in greener jobs, promoting digital technologies and opening up low carbon innovation opportunities, pave the way for a sustainable future.

In what is a milestone, the Maltese government is now launching its first National Policy for Electric Vehicle Public Charging Infrastructure, aimed at making charging infrastructure accessible to the public, to enable electric vehicles to circulate in urban and densely populated areas as well as facilitate charging for all residents across Malta and Gozo.

Supporting the electrification of transport goes beyond meeting national energy and climate commitments. This Government is committed to reduce greenhouse gas emissions, improve air quality and offer a better quality of life for the residents of the Maltese Islands.

This brings us to the launch of this policy paper, spearheaded by the Minister for Energy, Enterprise and Sustainable Development, Miriam Dalli. Minister Dalli believes that this policy shift, together with the continuation of incentives and measures, will assist Malta in achieving our goals towards electrification and sustainability in transport.
### Glossary of Terms, Abbreviations and Acronyms

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<td>AC</td>
<td>Alternating Current.</td>
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<td>CEF</td>
<td>Connecting Europe Facility.</td>
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<td>CCS</td>
<td>Combined Charging System.</td>
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<td>CHAdemo</td>
<td>A charging industry standard proposed by the CHAdemo Association.</td>
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<td>Charger</td>
<td>An electrical component assembly or cluster of component assemblies designed specifically to charge batteries or other storage devices within electric vehicles.</td>
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<td>Charging</td>
<td>Term used to describe the act of inserting a charger connector into an electric vehicle inlet in order to transfer electrical power to recharge the batteries on board the vehicle.</td>
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<td>Charging Levels</td>
<td>Standardised indicators of electrical force, or voltage, at which an electric vehicle's battery is recharges. These are referred to as Level 1, Level 2, and Level 3 (or DC/AC fast charging).</td>
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<td>Charging Point Operator</td>
<td>A Charge Point Operator (CPO) is normally a private or public organisation operating a network of charging points.</td>
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<td>Charging Station</td>
<td>Refers to a single piece of PEV charging equipment.</td>
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<td>Charging Roaming</td>
<td>Refers to the ability of a user to access the charging networks of different Charging Point Operators without prior registration with the operator of the charging infrastructure, which is enabled through an interoperability platform.</td>
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<td>Term</td>
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<td>Consumer</td>
<td>An individual or organization that purchases, rents, or drives an electric vehicle.</td>
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<td>CSP</td>
<td>Charging Service Provider. A CSP is a company that contributes to the electric vehicle charging industry. They can be a CPO, eMSP or both.</td>
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<td>Current</td>
<td>The flow of Electricity.</td>
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<td>DemoEV</td>
<td>Demonstrating the feasibility of electric vehicles towards climate change mitigation. An EU-funded initiative (under LIFE+ programme) aimed at determining the feasibility of electric vehicles for the Maltese Islands.</td>
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<td>DC</td>
<td>Direct Current.</td>
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<td>Electro-mobility</td>
<td>A general term for the development of electric-powered drivers designed to shift vehicle design away from fossil fuels and carbon gas emissions.</td>
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<td>EU</td>
<td>European Union.</td>
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<td>EV</td>
<td>Electric Vehicle. Any motor vehicle for on-road use that is capable of operating solely on the power of a rechargeable battery or battery pack.</td>
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<td>GHG</td>
<td>Greenhouse Gas.</td>
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<td>PEV</td>
<td>Plug-in electric vehicle.</td>
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<td>PHEV</td>
<td>Plug-in hybrid electric vehicle.</td>
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<td>ICE</td>
<td>Internal combustion engine.</td>
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<td>Interoperability Platform</td>
<td>Software platform by means of which two or more charging infrastructure operators (CPOs) contribute to the deployment of roaming charging by facilitating, securing and optimizing data exchanges between charging infrastructure operators.</td>
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**kW:** Kilowatt – a unit of power equal to 1,000 watts.

**kWh:** Kilowatt-hour. A unit of energy equal to one Kw delivered per hour normally used for measurement of the energy capacity of a battery or the measurement of electricity generated.

**MESD:** Ministry for Energy, Enterprise and Sustainable Development.

**MNEP:** Malta National Electromobility Platform issued in November 2013.

**MTIP:** Ministry for Transport and Infrastructure Projects.


**OCHP:** An Open Clearing House Protocol enables boundless electric vehicle charging across charging station networks. Using OCHP, service providers for EV charging can connect to infrastructure providers in order to provide access to their network. An OCHP is an open-source protocol.

**OCPI:** The Open Charge Point Interface (OCPI) enables a scalable, automated EV roaming setup between Charge Point Operators and eMobility Service Providers.

**OCPP:** An Open Charge Point Protocol is an application protocol for communication between Electric vehicle charging stations and a central management system, also known as a charging station network. This has been initiated by Elaad NL, a collaborative foundation created by a number of Dutch grid operators and now used widely within the EU.

**PORT-PVEV:** A project established by MTIP whose main aim was to demonstrate how ports and port areas, and the operations therein, can reduce their carbon emissions with the final aim of contributing towards the decoupling of the dependence of economic growth from non-renewable sources of energy.

**Public Charging Points**

/Infrastructure:

Refers to an individual or a group of connectors that can charge an EV at any given time. A public charging point is any charging point/infrastructure associated to a parking space which is physically accessible to the public, including those within commercial, industrial or private car parks accessible to the public, irrespective of whether access to parking is free of charge or against a payment.

**Private Charging Points**

Refers to installed points/infrastructure in a private residential building or charging
Infrastructure: points/infrastructure accessible exclusively to vehicles in service within the same entity installed in an area controlled by this entity are not considered as public EV charging infrastructure. For example, if a particular company installs a charging point within its premises for the charging of its own electric vehicles, then such a charging point is not considered as a public charging point. Also, a charging point installed in a workshop for the repair and maintenance of electric vehicles is not considered as a public charging point.

REWS: The Regulator for energy and water services in Malta.

Roaming Hub (eRoaming Platform): A platform that may connect one or more CPOs to one or more eMSPs.

ZEV: Zero Emissions Vehicle.
Executive Summary

In line with the Maltese Government’s policy to promote the uptake of Electric Vehicles, this National Policy aims to cover the charging infrastructure for plug-in and electric vehicles accessible by the public.

After providing an overview of the Electric Vehicle rollout progress in Malta, this document proceeds to outline the technical differences between charging infrastructure, three-phases of electric charging, and standardisation of charging socket outlets. The regulation of public infrastructure (Publicly Accessible Electric Vehicle Charging Infrastructure Regulations, 2021) is also highlighted through a Charging Point Operator license which will fall under the remit of the regulator Regulator for Energy and Water Services, REWS.

To ensure a consumer-centered approach, this policy establishes the requirements for the interoperability of all future charging infrastructure, including the payment platform. Finally, the policy determines the impact of charging infrastructure on the grid.
The Electrification of Transport in Malta

Government launched the first National Electromobility Platform in 2013. The MNEP brings together all relevant stakeholders in order to promote a change in culture of how we look at mobility and transportation in general. The expansion of the national car-charging infrastructure was amongst the list of objectives set by the MNEP. Recently, the Government embarked on several projects to provide shore-side charging facilities.

Additionally, following the setting up of the Cleaner Vehicles Commission in 2019, a Green Paper was issued towards introducing low emission vehicles. This was done to encourage the public to contribute to the vision of a Maltese policy for cleaner vehicles.
Charging infrastructure is the backbone for this transition. The Government has been tapping into EU funds to implement lighthouse projects such as the DemoEV project to develop 56 charging infrastructure and increase the public confidence in electric vehicles.

The Transport Ministry launched a scheme intended to promote the purchase of BEV, PHEV, and Range Extender Electric Vehicles in categories M1, M2, M3, N1 and N2. This also included a scrappage scheme so as to encourage the reduction of ICE vehicles on Maltese roads. The overall aim of the scheme is to replace existing conventional vehicles using Internal Combustion Engines with new Electric Vehicles to reduce the emissions generated by the transport sector. In order to support the shift towards electrification, the Ministry for Energy, Enterprise and Sustainable Development which as the responsible entity for the public charging infrastructure, sought to increase the availability of such infrastructure in Malta. Their accessibility aims to increase the national Electric Car charging network which will allow Battery Electric Vehicle users to charge their car using publicly accessible car charging points in specific and planned prominent parking spaces across Malta and Gozo.

As part of the Demo EV project, through the EU Life+ action programme implemented between 2011 and 2014, a total of 102 charging points were installed. This was pivotal to demonstrate the feasibility of electrical vehicles. Amongst these were three locations, the Ta’ Xbiex Marina, the Deep Water Quay Marsa carpark and the Cirkewwa (Malta-Gozo ferry) terminal car park, which have been equipped with Solar Car Ports as part of the PORT-PVEV project. The car ports were covered with PV panels, for a total potential output of circa 17MWh per annum per site. Each solar carport housed two dual charging pillars, one connected to the grid and the other connected to the on-site battery pack (24kWh which stored solar power produced on site) as well as to the grid.

With an investment of €2 million, the Government remains committed to deploy a further 130 charging pillars by end of 2021, of which 22 will be fast charging pillars. The Ministry for Energy, Enterprise and Sustainable Development is responsible for the implementation of this project, specifically Action E of the SMITHS project. Over a number of months, MESD collaborated with the Local Council Association and all Local Councils around Malta and Gozo with the aim of identifying key locations with a demand for charging infrastructure. Identifying Enemalta’s electrical supply for these same points was equally crucial to the process.

Moreover, the number of electric vehicles within the national fleet has increased from 36 in 2013 to over 4,000 by July 2021.
Introduction

Among electric vehicles early adopters, most of the charging is done at home. In many countries where people drive to work, workplace charging is the second largest share of charging energy used\(^1\). For drivers enjoying a reliable home or workplace charging possibility, public charging may be used only for longer trips or in irregular circumstances. This practice should be encouraged.

\(^1\) https://reader.elsevier.com/reader/sd/pii/S136192091930896X?token=DE08A268C78AD2C59917DA61FC8F8ADA959E65E790139EDC54CCF9B022F1FE4A4F1C76CFB21C856A34DF8DFEF8FC1AF5&originRegion=eu-west-1&originCreation=20210506153141
For those without the possibility of home charging, such as those who live in apartment buildings, public charging is a critical precondition to using an electric vehicle.

Dense areas and localities with more residents living in condominium apartments and high-rises would eventually require more public charging infrastructure as EV take up increases. It is therefore important that the number of charging points increases in line with the planned growth of EV fleet.

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2 https://pod-point.com/guides/driver/how-to-charge-electric-car
Scope

As part of its pandemic-related response, the European Union accelerated the roll-out of electric mobility, by proposing more ambitious targets, as part of its commitment under the EU Green Deal and of its commitment towards decarbonisation in the EU Green Deal\(^3\) and the subsequent Next Generation EU and Recovery Plan. In December 2020, the EU Sustainable and Smart Mobility Strategy and Action Plan bolstered these plans for the transport sector with ambitious ZEV deployment goals.

\(^3\) Which includes a commitment for climate neutrality by 2050.
The scope of this policy document is to establish a framework for the interconnection and interoperability of charging infrastructure networks, as well as to ensure a seamless integration with the EU charging network. The policy document will cover all plug-in, wired electric vehicle charging infrastructure that is or will be accessible to the general public. The Government also wants to facilitate and harmonise payment systems with minimum requirements, while providing adequate information to the users.

The Government is adopting the targets set by the Alternative Fuels Directive 94/2014/EU on the deployment of the Alternative Fuels Infrastructure Directive. These shall be updated in line with subsequent revisions of this same directive. Additional infrastructure is being installed to reach the committed targets set by the same directive. Deployment is expected to be carried out over the next few years.

There already are documents in the public domain outlining expected deployment over the short to medium term, including the identification of locations where the proposed charging pillars need to be installed. However, this only provides minimal coverage, whereas the Policy shall require significant scaling up to provide nationwide access.

The Policy takes into account the number of existing charging points accessible to the public and their specifications. Following a number of upcoming studies, decisions will be taken on whether to concentrate deployment efforts on normal or high-power recharging points, based on the AFI Directive and other regulations such as the CEF Transport sector for the period 2021–2027 in accordance with Article 20 of Regulation (EU) (CEF Regulation).

Figure 2
The EU policy documents on alternative fuel infrastructure

2011
White Paper ‘Roadmap to a Single European Transport Area’ (COM(2011) 344 final): development of a sustainable alternative fuels strategy (including infrastructure), with the objective of having the use of conventionally fuelled cars in urban transport by 2030 and phasing them out in cities by 2050

2013
Alternative fuels strategy (COM(2013) 17 final): a network of alternative fuel stations of standardised design and use

2014
Alternative fuels infrastructure directive (2014/94/EU): an appropriate number of recharging and refuelling points to be set up by 2020 and 2025

2016
European Strategy for Low-Emission Mobility (COM(2016) 581 final): to achieve mass acceptance and deployment of electric vehicles, charging infrastructure must become widely available throughout Europe

2017
Action plan on alternative fuels infrastructure (COM(2017) 652 final): an interoperable EU ‘backbone’ of alternative fuel infrastructure by 2025, particularly for the TEN-T core network corridors, facilitating cross-border and long-distance road and water transport

2020
Sustainable and Smart mobility Strategy (COM(2020) 769 final): at least 30 million zero-emission vehicles in the EU by 2030 served by 3 million public recharging points

2019
European Green Deal (COM(2019) 640 final): an estimated 1 million public recharging and refuelling stations will be needed in the EU by 2025 to serve 15 million zero- and low-emission vehicles

4 Source: ECA
Charging Stations vs Charging Points

At European Commission level, each connector or a single electricity supply outlet, is normally reported as a station with a single power outlet and counted as one charging point. A station with two power outlets and the capability to charge two vehicles simultaneously is counted as two charging points.
Both AC and DC charging stations often have two points or electricity supply outlets. AC chargers are mostly available with two points and can charge two vehicles simultaneously. DC chargers also generally come with two outlets but can typically charge a vehicle in DC and a second in AC. There are specific power outlet connector standards which apply for either DC or AC charging points. These stations would still be counted as a single charging point if only one vehicle at a time can utilize the station.
Alternating Current, AC (Slow-Med-Fast) Charging Points

The charging of EVs can be divided into sub-categories based on charging mode and charging type.
There are three types of AC chargers:

- The Slow AC relates to a recharging point, single-phase which is able to deliver electricity at maximum power output, \( P < 7.4 \text{ kW} \).

- The Medium speed AC recharging point, three phase which is able to deliver electricity at a maximum power output between \( 7.4 \text{ kW} \leq P \leq 22 \text{ kW} \).

- The Fast AC recharging point, three phase which is able to deliver electricity at a maximum power output, \( P > 22 \text{ kW} \).

The type of charger to be installed depends on the type of the electricity supply in the vicinity (for the case of a public charger). Other considerations include considering the type of vehicles one intends to charge while taking into account the additional costs and infrastructure limitations.

The time taken for the battery to be charged also depends on the battery pack of the vehicle and the technology within the vehicle.
Direct Current, DC (Slow-Fast-Ultra-Fast) Charging Points

The charging of EVs can be divided into sub-categories based on charging mode and charging type.
There are four types of DC chargers:

- **The Slow DC** recharging point relates to a maximum power output of $P < 50\ kW$.

- **The Fast DC** recharging point relates to a maximum power output of $50\ kW \leq P < 150\ kW$.

- **Level 1 – Ultra-fast DC** recharging point relating to a maximum power output of $150\ kW \leq P < 350\ kW$.

- **Level 2 - Ultra-fast DC** recharging point relating to a maximum power output of $P \geq 350\ kW$.

DC chargers are commonly available with power ratings above 50 kW. These are normally faster than AC chargers and would therefore be preferred to shorten time vehicles spent at a charging station. However, there are a number of reasons why DC chargers may remain a niche service. The hardware is much more expensive than that for AC chargers, although costs are expected to decline over time. These chargers may have a significant impact on the power grid, meaning costly substation upgrades are more likely to be needed. Power system equipment like transformers and power lines may be overloaded during peak hours, and could possibly lead to early aging, and harmonic distortion. Maximum demand charges may impact the operational costs and hindering the business case for commercial ultra-fast-charging services.

Most of the pre-2020 electric vehicle models are unable to be charged at over 50kW. The amount of power a vehicle can accept is proportional to the number of battery cells, and therefore ultra-fast charging is expected to initially be available for vehicles with larger battery packs.

Therefore, in contrast to the growth of 50 kW (fast chargers) and possibly 150 kW charging in urban settings, ultra-fast charging (DC) in the 150 kW-350-kW range and above is more likely to take root for niche applications with high mileage, such as taxis and delivery fleets. Ultra-fast charging will also be important for medium- and heavy-duty vehicles with larger battery packs and higher energy consumption.

Bus and Heavy Vehicles chargers require much higher power chargers than those used for cars. All-electric bus batteries need to be large enough to power a heavy vehicle over a daily route of several tens of kilometres. Bus chargers are typically rated up to 400kW depending on the requirements and the public transport network, as compared to the typical DC station today that normally can easily deliver up to 150-120kW. A primary challenge for battery electric buses is the cost of the charging infrastructure, and the cost of the electricity needed to charge a fleet of buses at high power.

The duration of charging is also an issue, especially since buses would need to be charged overnight or investment in faster charging stations would be required. For this reason, charging manufacturers and bus Original Equipment Manufacturer (OEMs) are exploring alternatives to rapid depot-based charging.
Standardisation of Physical Plugs and Sockets for EV Charging

Interoperability of charging stations is essential, both nationally but also to enable seamless EV cross-border travel. Charging stations are considered interoperable if they can serve a large variety of EV models and offer payment methods that are accessible for all EV drivers, without discrimination.
**Technical specifications for electricity supply for road transport**

**Normal power recharging points for motor vehicle**

Alternating current (AC) normal power recharging points for electric vehicles shall be equipped, for interoperability purposes, at least with socket outlets or vehicle connectors of Type 2 as described in standard EN 2-2017-62196.

**High power recharging points for motor vehicles**

Alternating current (AC) high power recharging points for electric vehicles shall be equipped, for interoperability purposes, at least with connectors of Type 2 as described in standard EN 2-2017-62196.

Direct current (DC) high power recharging points for electric vehicles shall be equipped, for interoperability purposes, at least with connectors of the combined charging system ‘Combo 2’ as described in standard EN 3-2014-62196.

The standards being adopted within the EU and transposed for Malta are as follows:

- **EN 2-62196** ‘Plugs, socket-outlets, vehicle connectors and vehicle inlets. Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories’, and

- **IEC 1-60884** ‘Plugs and socket-outlets for household and similar purposes – Part 1: General requirements’.

This is in line with Annex II to Directive 94/2014/EU and the technical specifications. The use of mechanical shutters for socket outlets is being made mandatory.

In compliance with the Commission Delegated Regulation (EU) 674/2018, publicly accessible alternating current charging points reserved for L-category vehicles (two or three-wheeler motorbikes or mopeds) up to 3.7 kW shall be equipped with at least one of the following:

- Socket-outlets or vehicle connectors compliant with standard EN 2-62196 (for Mode 3 charging);

- Socket-outlets compliant with IEC 1-60884 (for Mode 1 or Mode 2 charging).

Public charging points reserved for L-category electric vehicles above 3.7 kW shall be equipped with at least socket-outlets or vehicle connectors of Type 2 as described in standard EN 2-62196.

**Types of Socket Outlets on the Market**

There are currently four types of plugs and sockets on the market, two for alternating current (AC) which allow charging up to 44 kW and two for direct current (DC) which allow fast charging up to 350 kW. In each case, the actual charging power depends both on the vehicle and on the grid capability.

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5 Directive 94/2014/EU
6 Directive 94/2014/EU
**AC Charging**

- Type 1 is a single-phase socket outlet. It allows charging at a power rating up to 7.4 kW.

- Type 2 is a three-phase socket outlet and can charge faster. Residential chargers are normally rated at 22 kW, while public charging stations can reach up to 44 kW. Public EV charging pillars shall have at least one Type 2 socket outlet.

**DC Charging**

- CHAdeMO: This quick charging system allows for very high charging capacities as well as bidirectional power flow. To date, it allows charging up to 100 kW.

- CCS: The CCS plug is an enhanced version of the Type 2 plug, also known as Combo 2. It has two additional power contacts for fast charging. It supports both AC and DC charging and allows charging at a speed of up to 350 kW. Public EV charging points offering DC charging shall have at least one CCS Combo 2 socket outlet.

**Figure 3**

* EV Charging Connector Types*

All installations shall comply with the Electricity Installation Regulations and shall be installed by a licenced electrician. Furthermore, each charging point shall include a protection device with differential-residual current (RCD) at most equal to 30mA dedicated to this circuit.

Public charging points shall be certified by an warranted electrical engineer, for compliance with the regulations, at least once a year.
Electric Vehicle Charging Market Roles

As the need for charging infrastructure increases, it is expected that the private sector will show interest in operating public charging stations. This is something that Government encourages and is in the interest of a competitive market.
Whilst Government intervention is necessary to mitigate the present market limitation, this is expected to act as a catalyst for private investment which will develop business models to finance, install, operate and maintain charging infrastructure installed in public spaces.

There are a number of roles which the public or private sector may undertake. These include a CPO whose main aim is to operate a network of Charge Points, an eMSP whose main aim is to give EV drivers access to charging services, and an SCSP whose main aim is to provide smart charging services to other parties (where applicable)⁸.

Some of these roles may be combined in one company. A Platform can provide service for multiple CPOs or eMSPs, but also for both eMSPs and CPOs.

Following this establishment, there is the need for the eMSP platform to connect to the CPO platform (peer-to-peer connection). There are multiple topologies which are supported highly dependant on the required connection. This is normally affected through an OCPI protocol connection.

To regulate such operations, entities who would be interested to operate charging stations must obtain an authorisation in the form of an individual license issued by the regulator to act as a CPO, an eMSP and a CSP.

Interoperability

Interoperability is the ability for multiple systems to work together without restriction. With regards to electric vehicle charging infrastructure, interoperability refers to the compatibility of key system components; vehicles, charging stations, charging networks, the grid and the software systems that support them, allowing all components to work seamlessly and effectively.
So far, the existing public Charging Network did not provide for interoperability. Moving forward, the direction supported by the established Directive for Alternative Fuels and Infrastructure is to ensure full interoperability and connectivity between the electricity supply point and all chargers of electric vehicles. Additionally, further action is needed to provide full interoperability of infrastructure across borders.

In order to support the latter, one would need to further explore the possibility for a Charging Service Provider (applicable to public and private infrastructure) to connect to one or more eRoaming platforms (e.g. Hubject, E-clearing, Gireve and direct P2P OCPI connections) through a plug and charge function via at minimum an OCPI 2.2 connection.

If charging roaming is to be supported locally, there needs to be an access against a pre-established charge payable to the eRoaming platform for provision of such service to the end user. The entire charging process, from authentication to billing, occurs instantly and autonomously. This enables a harmonised payment system with minimum requirements and adequate user information. The system would need to adopt appropriate security protocols to protect the customers’ data from hacking and fraud and shall comply with ISO 15118.
Interoperability of Communication Protocols

Standard protocols carry out the communication between the car, the charging stations, the grid, and the roaming platforms. Communication functions include identification, authorisation, battery status, etc. It is mandatory to make charging stations operated by different providers accessible for a broad range of clients, national providers of charging infrastructure need to use the OCHP or the OCPP.
Meanwhile, the technology installed till now has not enabled an OCPP. Beyond interoperability, it is important that the Government promotes standardisation, and new market entrants which shall be required to support OCPP 1.6 or 2.0.1 (as a minimum). This will ensure that the infrastructure implemented locally will be open to third party EV owners. All existing infrastructure will be fully replaced to ensure that all newly introduced Charging Infrastructure supports an open charge point protocol.

A Charging Service Provider must take the appropriate measures to guarantee, under non-discriminatory conditions, access to its charging infrastructure and, where applicable, the related payment platform. Access should be made available to any user without the latter being required to take out a pre-established prescription with a Charging Service Provider.
Payment Rates and Connection Protocols

The cost for public charging shall consist of two components, a flat rate which represents the electricity charge and a premium which shall be applied by the Charging Service Provider. The electricity tariff component is regulated by REWS under the Regulation for Energy and Water Services Act (CAP. 545) – Electricity Supply (Amendment) Regulations, 2021.
On the other hand, the Premium for government owned infrastructure has been established in such a way that this will promote competitiveness and will not disincentivise private investment. The Premium will be liberalised under MCCAA monitoring to promote fair and enhanced competition.

In line with Directive 94/2014/EU on the deployment of Alternative Fuel Infrastructure, users may access public charging infrastructure irrespective of whether they have subscription with the operator of the infrastructure. Different rates may apply if ad hoc access is opted for.

It is important that for any interested CP user, one registers to a particular charging service provider of their choice to establishes a framework contract and utilise the service. This will be enabled through a universal platform such as a mobile phone application or a website.

The ability to charge using charging stations operated by different service providers requires roaming functionality on the same model used by global mobile telephony systems. This shall require the development of a system whereby two or more operators can exchange information and billing. The “roaming” charging stations shall require a secure internet connection, standard communication protocols, and either a RFID card reader or a function for remote activation. The charging infrastructure operators are requested to provide payment systems which are interoperable across EU borders. This is only applicable if and once the eRoaming service explained in Section 8 is adopted.
Price Transparency

As explained earlier and in Section 7, the Government’s intention is to open up the market to private investment. It is important that users of public charging infrastructure are able to understand the structure of the tariffs and that such tariffs and their components are transparent. For this reason, on each public charging station, the technical characteristics and the price components per kWh shall be clearly indicated.
The price per kWh of electricity delivered from a public charging point shall be as established in the Electricity Supply Regulations and the charging infrastructure operator should not make any profit from the resale of electricity.

The charging infrastructure operator may add a premium for the charging service. This premium is deemed to cover the cost of installation, maintenance and management of the charging point and any software platform and shall be cost reflective.

MCCAA is the authority responsible of ensuring that price for premiums charged by the Charging Service Provider to the public are reasonable, easily and clearly comparable, transparent and non-discriminatory.
Location and Design of Electric Charging Infrastructure

According to Directive 94/2014/EU, all Member States should ensure that recharging points accessible to the public are strategically located to provide adequate geographic coverage.
The location of public EV charge points is currently being studied and planned holistically. A number of factors are being considered before choosing locations. These include discussions with Local Councils, assessment of high-density areas, areas of high utility of Electric Vehicles, assessment of existing building stock to support localities with more residents in multi-unit dwellings, and minimum distance between charging points (depending on area being considered). Whether one is dealing with on- or off-street parking (public parking on public or private land), such measures need to be taken into consideration. By adopting this methodology, one ensures better coordination of agreed locations for better ease of use. Additionally, good strategic planning ensures retention of visual local character while providing access to all.

According to input by the Local Councils’ Association, this is particularly important in Urban Conservation Areas and in areas already characterised by parking and pavement pressures. The positioning of EVs is an opportunity to re-evaluate existing transportation policies and use these policies to incentivise a switch to electrification.

The chosen sites should provide for adequate space to host an electric vehicle charging station of the type described in section 7. It is crucial to ensure that the following is catered for at minimum:

- Access for the purposes of recharging an electric vehicle;

- Access for installation and maintenance of the electric vehicle charge point;

- Vehicle barriers as necessary.

It is suggested that a Charging Service Provider will refer to the policy document issued by Transport Malta for reference to the Charging Pillar design (https://www.transport.gov.mt/).
Geographical Distribution of EV Charging Stations

To ensure effective deployment of public charging infrastructure, it is important to ensure that the stations are well distributed geographically, taking into account population densities and building types within different areas.
In order to achieve appropriate distribution, a spatial zoning exercise is required. The territory shall be divided into Zones, with a number of localities within each zone. Each locality is assigned to a particular zone after taking into account its population, the density of the housing stock and the prevalence of registered electric vehicles (excluding institutional registrations which may skew the data).

Each CSP is required to distribute its infrastructure by a predetermined percentage range allocation within each zone within areas of public land. This information will all feed towards a national database with all (public) charging locations.

Zoning and definition of percentage ranges will be established by a Governing Committee and will be revised on an annual basis, in response to public feedback. The Governing Committee shall include:

- a representative of Transport Malta,
- a representative of the Ministry for Energy, Enterprise and Sustainable Development
- a representative from Enemalta Plc
- a representative of the Local Councils Association.

The committee shall consult with the registered Charging Service Provider and relevant stakeholders when defining the zones and percentage range allocations for each zone in the case of Public charging infrastructure to be located on public land.
Distribution of EV Charging Stations (not installed on private premises)

It is important that within each zone and within each locality charging stations are well distributed to ensure that the public is well served. This is included as part of a wider EV public charging pillar strategy for the roll out of public charging infrastructure aligned with Directive 94/2014/EU.
Charging Service Providers must obtain clearance and consent from the Governing Committee as well as the Lands Authority regarding each new charging station location which is not installed on private premises (applicable to private and public infrastructure). When granting or denying formal consent for placing charging stations, the Governing Committee shall consider several factors, including but not limited to:

- compliance with geographical distribution (refer to section 13);
- ease and safety of traffic around the area;
- traffic arrangements and road geometry of the location in question;
- the expected frequency of use of the particular charging station;
- the number of parking spaces available in the area, taking into consideration the availability for parking reserved for EV charging and the demand for such charging in the area under consideration;
- the presence of other charging stations in the vicinity, including any pending installations and charging stations operated by other CPOs;
- accessibility of the proposed charging station, including considerations for obstruction to pedestrians and the safe routing for trailing charging cables between the station and the EV.

As previously highlighted, the Government intends on acting as a catalyst investor in the short to medium term and open the market to nurture it to grow. There are multiple ways of launching such investment aid application, including and not restricted to a bid in a competitive bidding process.

Following such strategy and the inclusion of multiple CPOs (private and public), discussions are currently underway to plan out the transition and roll out of the more detailed framework for the medium to long term transition. A well-planned infrastructure requires significant public financial investment as well as good visibility of how charging infrastructure will grow and when and where it is best installed. Planning also involves achieving a dynamic charging infrastructure masterplan that can adapt to growth and accommodate new technologies as they are developed.

Where applicable, all consents including the choice of locations, geographical and spatial distribution shall be subject to consultation initiated with MESD and specific entities including Enemalta Plc, the Local Councils, Transport Malta, Planning Authority, Lands Authority and the Superintendent of Cultural Heritage, where necessary (this is applicable on a case-by-case basis).
Increasing the number of electric vehicles and charging infrastructure will add to electricity demand and place pressure on Malta’s grid network, operated by Enemalta.

Additional Electricity Demand and its impact on the Grid
The power electronics in EV charging stations may induce undesired harmonic components which cause grid perturbations. Interferences from EV charging stations are supposedly not reduced by active filters. In contrast, active filters can be the source of more High Frequency power feedback into the grid. Owing to the high requirements placed on the short-circuit level of the feeding grid, grid perturbations may be influenced. For this reason, the Distribution System Operator is a primary stakeholder in this technical guidance document and needs to be consulted.
Conclusion

The public benefits of electrification are clear; they have been proven to improve air quality and reduce greenhouse gas emissions significantly. The Government wants to keep on incentivising this shift and we will indeed see more financial incentives for charging infrastructure in the form of rebates, tax credits, and grants that are effective at increasing EV market share.
A clear strategy supporting the expansion of charging infrastructure sends a strong signal to all involved stakeholders. A Policy can help address the issues that currently inhibit EV investment and infrastructure deployment.

It is the government’s aim to encourage both public and private investments to expand the charging possibilities beyond the initial demonstration projects. This will in itself encourage the shift towards electrification. Ultimately, the policy aims to promote the necessary development to enable border-free roaming for EV and PHEV vehicles.

This policy shall need to be complemented by a comprehensive campaign and a detailed website such that users have access to up to date information on existing infrastructure and funding opportunities.

This policy shall be revised periodically to reflect sectoral developments within the EU.
Appendix
# EV Charging Standards

<table>
<thead>
<tr>
<th>Charging standard</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>Alternating Current (AC)</strong></td>
<td></td>
</tr>
<tr>
<td>Type 1</td>
<td>SAE J1772, mainly used in North America and Asia</td>
</tr>
<tr>
<td>Type 2 (EU standard)</td>
<td>AFID Annex II requires that AC power charging points for electric vehicles to be equipped, for interoperability purposes, at least with socket outlets or vehicle connectors of Type 2 as described in standard EN 2-62196.</td>
</tr>
<tr>
<td>Type 3</td>
<td>Found in Italy and France, no longer installed since 2012.</td>
</tr>
<tr>
<td><strong>Direct Current (DC)</strong></td>
<td></td>
</tr>
<tr>
<td>Type 4 (CHAdeMO)</td>
<td>Used in Japan and Europe. For example, France has made it mandatory for all publicly accessible fast charging points to include a CHAdeMO connector by 31 December 2024.</td>
</tr>
<tr>
<td>CCS (EU standard)</td>
<td>AFID Annex II requires that DC high-power charging points to be equipped, for interoperability purposes, at least with connectors of the combined charging system CCS ‘Combo 2’ as described in standard EN 3-62196.</td>
</tr>
</tbody>
</table>

Source: ECA