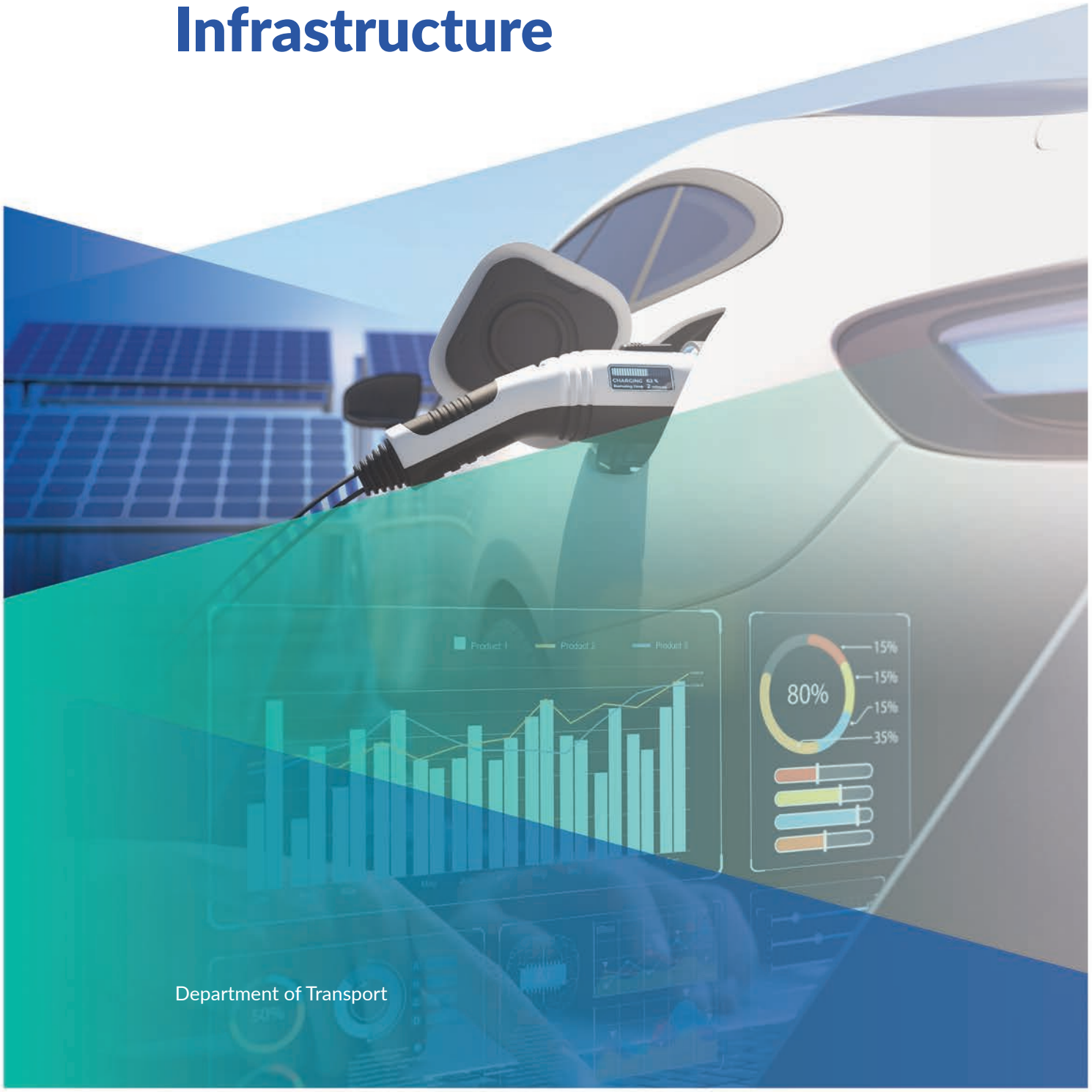
Rialtas na hÉireann
Government of Ireland

zevi Zero Emission Vehicles Ireland

Draft Strategy for Data Concerning Electric Vehicles Recharging Infrastructure



Department of Transport

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Acronyms and Definitions

Acronym	Definition
AFIR	Alternative Fuels Infrastructure Regulation
API	Application Programming Interface
BEV	Battery Electric Vehicle
CAP	Climate Action Plan
CPO	Charge Point Operator
CSO	Central Statistics Office
DC	Direct Current
DoT	Department Of Transport
DXP	EV Data Exchange Platform
EEA	European Economic Area
EMAID	E-Mobility Account Identifier
ESBN	Electricity Supply Board Networks
EU	European Union's
EV	Electric Vehicle
EVSE ID	Electric Vehicle Supply Equipment ID
GDPR	General Data Protection Regulation
HDV	Heavy Duty Vehicle
IDRO	Identification Registration Organisation
IDRR	Identification Registration Repository
ITS	Intelligent Transport Services
LDV	Light Duty Vehicle
MSP	Mobility Service Provider
NAP	National Access Point
OCPI	Open Charge Point Interface
PHEV	Plug-In Hybrid Electric Vehicle
PSO	Public Service Obligation
TEN-T	Trans-European Transport Network
TII	Transport Infrastructure Ireland
ZEV	Zero Emission Vehicle
ZEVI	Zero Emission Vehicles Ireland

Alternative Fuels

Alternative fuels, according to AFIR (Alternative Fuel Infrastructure Regulation), encompass substitutes for fossil oil in transport energy. This includes alternative fuels for zero-emission vehicles (i.e., electricity, hydrogen, ammonia), renewable fuels (i.e., biomass fuels and synthetic and paraffinic fuels), and non—renewable alternative fuels and transitional fossil fuels (e.g., natural gasses in gaseous (CNG) and liquefied (LNG) forms).

Charging Station/Recharging Station

A charging station, also known as a recharging station, is the physical installation for the recharging of electric vehicles. Every station has a theoretical maximum power output, expressed in kW. Every station has at least one recharging point, which can serve only one vehicle at a time. The number of recharging points at a recharging station determine the number of vehicles that can be recharged at that station at any given time. Where more than one vehicle recharges at that recharging station at a given time, the maximum power output is distributed to the different recharging points, such that the power provided at each individual recharging point is lower than the power output of that station.

Charge Point Operator

Charge Point Operators are responsible for installing, maintaining, and operating the publicly accessible recharging stations/points.

Electric Vehicle

An Electric Vehicle is one that runs on electricity as opposed to traditional fossil fuels.

ID Registration Organisation

Each Member State provides an ID Registration Organisation (IDRO). IDROs need to maintain the ID registration for Charge Point Operators (CPOs) and Mobility Service Providers (MSPs) with a unique ID for each organisation.

ID Registration Repository

The national IDROs collaborate at European level via the ID Registration Repository (IDRR). The IDRR provides relevant information on IDs, access to national ID registers and ID requests. It offers support to national IDROs with their activities and Member States who do not yet have their IDRO. Furthermore, the IDRR also ensures long-term sustainable ID management.

Mobility Service Provider

Common across Europe, an MSP connects customers to a wide pool of charge points operated by a range of CPOs and facilitates payment via a subscription service and/or smartphone app. MSPs are not as common in Ireland; here, the responsibilities of CPOs often encompass many of the services provided by MSPs in other regions. They fulfil both roles, offering end-to-end services for EV recharging.

Publicly Accessible Recharging Infrastructure

Publicly accessible recharging infrastructure are available to all EV Drivers. According to the Alternative Fuels Infrastructure Regulation published in 2023, publicly accessible charging infrastructure is that which *'is located at a site or premises that are open to the general public, irrespective of whether the alternative fuels infrastructure is located on public or private property, whether limitations or conditions apply in terms of access to the site or premise and irrespective of the applicable use conditions of the alternative fuels infrastructure.'*

Recharging and Refuelling

AFIR refers to 'recharging and refuelling' points and stations, and its regulations apply to both, including the regulations regarding data infrastructure.

> *'refuelling point' means a refuelling facility for the provision of any liquid or gaseous alternative fuel, through a fixed or a mobile installation, which is capable of refuelling only one vehicle at a time;*
>
> *'recharging point' means a fixed or mobile interface that allows for the transfer of electricity to an electric vehicle, which, whilst it may have one or several connectors to accommodate different connector types, is capable of recharging only one electric vehicle at a time, and excludes devices with a power output less than or equal to 3,7 kW the primary purpose of which is not recharging electric vehicles.*

In Ireland, these are usually referred to as charge points.

Zero Emission Vehicle

A zero emission vehicle refers to a vehicle with an engine type that produces no tailpipe emissions of greenhouse gases and other pollutants during its use. These vehicles include electric vehicles (EVs), and hydrogen fuel cell vehicles.

CHAPTER

1

Introduction

1.1 Overview

As we move towards the electrification of the transport sector, data will play a more important role than ever before. While any vehicle with an internal combustion engine can refuel at any petrol station, an electric vehicle requires significant data exchange and management before, during and after recharging. As the publicly accessible recharging point network grows in Ireland, the data practices underlying our Electric Vehicle (EV) recharging infrastructure will play an increasingly important role.

There will be many different demands made of data related to EV usage and publicly-accessible EV recharging infrastructure, ranging from those arising from regulatory requirements to those arising from a desire to enable enhanced consumer and user experiences. There is therefore a clear need for an overarching strategic approach that can be coherently implemented to bring greater certainty to the market and consumers. It is also envisaged that through development of a clear strategy at the outset, there is improved potential for efficiencies and alignment across the various requirements and demands being made of Charge Point Operators (CPOs) and others, as well as clarity as to roles and responsibilities.

1.2 National Planning

The Implementation Plan that accompanied the National Electric Vehicle Charging Infrastructure Strategy 2022-2025 defined the key actions and deliverables required to support the transition to EVs, which is required to meet the emission reduction targets set out in the Climate Action Plan. One of the key deliverables of the 'Policy and Strategy' pillar within the Implementation Plan is a national strategy that sets out the measures to be implemented to effectively collect, use, and make data available to appropriate stakeholders and end users.

1.3 EU Regulation

The importance of defining practices for governing data provision and sharing is reinforced at an EU level with the introduction of the Delegated Regulation (EU) 2022/670[1] supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide real-time traffic information services (more commonly known as the ITS Directive). This delegated regulation introduced an obligation on CPOs to share location, availability and pricing information on their publicly-accessible EV recharging infrastructure, with any data user, by January 1st of 2025.

The requirements outlined in this Regulation are significantly enhanced in the Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of Alternative fuels infrastructure, more commonly known as the Alternative Fuel Infrastructure Regulation (AFIR)[2]. AFIR regulates various aspects of alternative fuel recharging and refuelling infrastructure, including the data underlying it. In particular, Article 20 describes the obligations and mechanisms by which data underpinning the publicly-accessible EV recharging infrastructure must be made available.

[1] https://eur-lex.europa.eu/eli/reg_del/2022/670/oj
[2] https://eur-lex.europa.eu/eli/reg/2023/1804/oj

CHAPTER

2

Strategy Objective and Structure

This objective of the strategy is to ensure that there is high-quality data regarding public EV recharging infrastructure made available in Ireland. In turn, this will enable the provision of high-quality information services to EV Drivers by other data users. A proactive approach will be taken to ensure this is delivered.

In this document, we describe the data, data infrastructure and policies required to support the data users of the publicly accessible EV recharging infrastructure in Ireland. This also describes how we will meet our regulatory obligations as laid out under ITS and AFIR. While EU data requirements for the various forms of alternative fuels are outlined in AFIR, the scope for this strategy is to set the foundation for complying with requirements for the electric vehicle recharging infrastructure only. This is because other alternative fuel markets are not yet matured in Ireland.

Section 3 below focusses on outlining the range of data to be collected and disseminated to meet AFIR requirements and EV user needs in Ireland.

Section 4 then sets out the data infrastructure and systems that will need to be introduced to facilitate the ingestion, management and publication of the data as outlined in Section 3.

AFIR's data requirements are more demanding, more detailed and more complex than those of the ITS. For this reason, the strategy outlines its approach to providing a data ecosystem that satisfies AFIRs more stringent regulation in the first instance. Nonetheless, the ITS Directive comes into force earlier than AFIR and for this reason, Section 5 moves on to describe differences between AFIR and ITS, and the pathway to transition from compliance with ITS to compliance with AFIR.

This is a draft strategy for public consultation; thus each section includes structured consultation questions.

2.1 Strategy Owners and Implementers

This strategy is developed and led by ZEVI. ZEVI is a dedicated office within the Department of Transport. It was established in July 2022 and is charged with supporting consumers, the public sector and businesses to continue to make the switch to zero emission vehicles (ZEVs).

The implementation aspects of this strategy will be delivered by Transport Infrastructure Ireland (TII), and legislation is required to support this.

TII is responsible for the delivery and operation of safe and efficient transport infrastructure services, including the country's national road and light rail networks.

It is currently planned that the ZEVI office will move to TII in 2025/2026 once the initial work of the office is complete and the ZEVI remit transitions to ongoing operations and delivery.

2.2 Summary of Key Deliverables and Responsibilities

The key obligations, deliverables, responsibilities, and timelines are below.

Raw Data Provision - CPO Responsibility

ITS mandates that the following data on recharging points must be made available to any data user: location, conditions for their use, availability and price of ad hoc recharging.

AFIR mandates that the additional data must also be supplied including type of connectors, number of parking spaces for people with disabilities, contact information of owner and operator, etc (see Section 3 for full details).

Both also place conditions on the automated way in which this data must be made available. This means that:

- by January 1st 2025 they must be able to supply the ITS-mandated data types, optionally in OCPI;
- by 14th April 2025 they must be able to supply the AFIR-mandated data types, optionally in structurally-enhanced OCPI; and,
- by 14th April 2026 they must be able to supply the AFIR-mandated data types via a DATEX II-compliant API.

Exchange and Reuse – CPO Responsibility

ITS mandates that the data must be made available on a non-discriminatory basis, to enable the creation of real-time traffic information and registered for discovery via the National Access Point. This means that:

- by January 1st 2025, they must make the data available to any data user that requests it; and
- by January 1st 2025, they must make that data discoverable via Ireland's Open Data Portal, the NAP.

Data Discovery – Member State Responsibility

Under ITS, the Member State is mandated to supply a search facility enabling data users to find where and how they can access the CPO-supplied service that provides the refuelling infrastructure data, by January 1st 2025. The State is already compliant with this obligation.

Data Exchange Platform – State Responsibility

AFIR and ITS both offer strategic vision in terms of the provision of real-time intelligent information services regarding transport and travel, and including the publicly accessible EV infrastructure. In satisfaction of this vision, rather than an express obligation, the objective of the strategy is set as providing high quality data, requiring a proactive approach. It is therefore proposed to build a Data Exchange Platform, with a delivery date of December 31st 2024. Further detail on the rationale behind this is provided in Section 4.

Identification Registration Office – Member State Responsibility

AFIR mandates that Member States must provide a facility to enable IDs to be issued to Charge Point Operator and eMSPs. This must be provided by 14th April 2025. Further detail can be found under IDRO.

CHAPTER 3

Data

3.1 AFIR Raw Data Requirements

AFIR outlines that CPOs need to ensure the open availability of specific types of data regarding the publicly accessible EV recharging infrastructure, at no cost, via a standardised API. The data categories required are both static and dynamic: static data is data that does not change often or on a regular basis, whereas dynamic data changes regularly and often. Data users (in this case, relevant market actors) should be able to build information services based on the APIs provided by the CPOs so that end-users (such as EV Drivers) can benefit from better and more reliable information on public EV recharging infrastructure.

The data that AFIR requires to be provided are set out in Table 1 below.

Table 1. *AFIR static and dynamic data types*

Category	Data Type
Static Data (Contextual)	○ Geographic location ○ Opening hours ○ Number of parking spaces for people with disabilities ○ Contact information of both the owner and operator of the recharging station
Static Data (EV Charge Point Specific)	○ Identification codes of the charge point operator ○ List of connectors – including number and type of connector ○ Type of current (AC / DC) ○ Maximum power output (kW) of the recharging station ○ Maximum power output (kW) of the recharging point ○ Vehicle type compatibility
Dynamic Data	○ Operational status (Operational / Out of Order) ○ Availability (in use/not in use) ○ Ad hoc price ○ Whether the electricity supplied is 100% renewable (Yes / No)

There are significant additional obligations regarding data that will be more fully described under implementing and delegated regulations, which are still under development at European level. It is expected that they will refine the description of the recharging points, their operators and operation, adding additional structure and detail to the high-level data points above. For instance, in addition to supplying the identification code for the operator of the recharging session, the additional regulations may require the legal name and commercial name to also be supplied.

ZEVI has had significant engagement with recharging point owners and operators and is aware of the challenge that exists in complying with the obligation to provide open APIs and supply data to the NAP by 14th April 2025. Notwithstanding these challenges, the Regulation has taken legal effect across the EU and those data points described in the delegated and implementing regulations, once released, will be final and will apply to the data to be made openly available. AFIR outlines that there will also be a reasonable time for transition allowed.

3.2 User Types and Additional Raw Data Needs

AFIR defines data users in this context to be 'any public authority, road authority, road operator, recharging and refuelling point operator, research or non-governmental organisation, mobility service provider, e-roaming platform, digital map provider or any other entity', and envisions that data may be used by them to 'provide information, create services or perform research or analysis on alternative fuels infrastructure'.

To facilitate design decisions around what EV recharging infrastructure data would be needed, and what structures should be in place to enable data users to access the data they need, key potential data users were identified. Data requirements descriptions were sought from representatives of several data user categories: recharging network planners, academics, TII, the grid operator, EV Drivers, and others. A combination of surveys and one-to-one meetings were used and the outcomes were described using a method called 'User Stories'.

User Stories, integral to Agile software development, represent end goals written from the user's perspective. A key benefit lies in their ability to link developers to users' motivations, enabling the creation of enhanced and more useful features in digital solutions.

For the purposes of this Strategy, the main priorities that emerged from this process were:

- meeting regulatory requirements (including the provision of open data);
- meeting operational requirements (e.g., enabling planning and monitoring of the publicly-accessible EV recharging infrastructure); and,
- enabling EV Driver requirements.

User Stories provided an understanding of which data would most likely be required and what the preferred access methods would be, e.g., in a raw and unprocessed format, as processed information, or through an app, etc.

A sample of the User Stories we gathered is provided hereunder.

Table 2. *Sample User Stories per Data User Category*

Data User Category	Sample User Stories
EV Driver	As an EV Driver, when I plan ahead, I want to be able to find suitable and available chargers on my route or destination so that I can know where I am going to stop to recharge, how long I will be there, and how much it will cost.
EU Access Point Owner	As the EU International Access Point, I want to be able to gather all of the static and dynamic data mandated under AFIR in an automatic way, and via agreed data exchange standards, for electric and hydrogen, so that I can make them available EU-wide in an Open Data Initiative.
Grid Operator	As the Grid Operator, I want to be track demand at various recharging points so that I can understand demand and use it for planning and prediction.

Data User Category	Sample User Stories
Mobility Service Provider	As a Mobility Service Provider, I want to be able to access and store all of the static and dynamic data mandated under AFIR in an automatic way, and via agreed data exchange standards, so that I can build an application serving EV Drivers with information on all the recharging points within my network.
Head of ZEVI	As the Head of ZEVI, I want to be able to record and report the targets, and utilisation of those infrastructure and vehicle targets, as set out in Annex I of AFIR, so that I understand how the overall EV strategy is progressing, and so that I am meeting reporting obligations under the regulations. I want to ensure that we are targeting funding for infrastructure in the right places, identifying areas where additional infrastructure is required and working with the sector to ensure gaps are filled.
Academic Researcher	As an academic researcher in this field, I want to be able to augment the data in my own transport-based research project so that I can better serve the needs of my end users.
IDRO Registry Operator	As the IDRO Registry Operator, I want to know which of the issued IDs are not in use so that I can take appropriate action as defined by my office.
Data Exchange Platform Owner	As the Data Exchange Platform Owner for Article 20 Data, I want to ensure that the data exchange system, and the data flowing in and out of it, is entirely secure, so that I can ensure its validity within my system and support its validity in terms of its wider application.
EV Charging Infrastructure Lead	As the Infrastructure Lead, I want to know the utilisation, location, power, payment options and facilities of every charger station, pool and site so that I can make decisions as to where is most necessary to invest in order to develop the infrastructure to respond to the needs of EV Drivers.
ZEVI Legislation and Governance Officer	As the Legislation and Governance Officer, I need to know how many chargers are currently active, where they are, what their power is and the other details about them, so that I can answer high level Parliamentary Questions and fulfil other Communication requirements as they come through.
Future Regulator/ Infrastructure Development Director	As the Future Regulator, I want to know if recharging points are non-compliant with Article 20 data provision so that I can take any appropriate action as may be defined.

These user stories were further considered to understand whether the raw data points underlying them:

- were already mandated to be collected under AFIR;
- would need to be collected in addition to requirements set out under AFIR.

In developing this Strategy, it was also considered what other planned functionality, if any, would have to be in place.

3.3 Proposed Raw Data Points to be Provided by CPOs

Having conducted the user needs analysis, it was concluded that almost all information-based requirements for raw data would be satisfied by the data type specification under AFIR, once supplemented by the finalised implementing and delegated regulations. Therefore, the raw data points to be exposed by the CPOs via open API will remain only those mandated by AFIR.

However, emerging from the user stories was a further requirement not covered by the data specified under AFIR: Meter Point Reference Numbers (MPRNs). It is already anticipated that delivering the extensive power output requirements mandated by AFIR, in the specified timeframes required, will place significant additional strain on the capacity of the electricity grid - which is itself required to support all needs of all electricity customers. It is therefore crucial for Ireland that the planning of both the national grid infrastructure, and the national EV recharging infrastructure are supported, and this means that the electricity demand generated by EV recharging must be both quantifiable and geographically locatable. Technically, this means that a mechanism should be provided that enables the association of a recharging point identifier with an MPRN identifier – this a dyad and it might, for example, take the form *[charge point identifier 001: MPRN 8400001]*.

Although responsibility for generating, storing and providing that association may not directly lie with ZEVI, given the centrality of the dyad to AFIR implementation and Ireland's interests, it is important to ensure that the requirement is considered, and facilitated if possible. In this regard, an option is being considered to facilitate the CPO in notifying the MPRN to the ESBN at the same time as providing static data to the data platform.

The argument for doing so rests on recognising the tangible benefits delivered by the recharging point-MPRN dyad. Providing knowledge of this dyad to ESBN will enable delivery of a range of tangible benefits for all parties, including CPO customers, as follows:

- MPRN collection will enable ESBN to associate EV recharging point data to the distribution network. This will help to understand EV charging capacity utilisation at a local transformer level and understand the trend of EV charging roll-out in aggregate at substation level. This would enable accurate insights to understand and proactively plan for the additional capacity needed on the distribution network over time. In turn, ESBN would be able to strategically and optimally deploy investments for network upgrades and development of the distribution network in support of electrification of transport.
- By understanding the EV recharging assets and configuration at an MPRN level, ESBN will be positioned to take this specific information into account when designing optimised flexibility schemes for those specific locations on the network and electrical loads. This will safeguard the delivery of the defined obligations under paragraph 58 of AFIR, i.e., enabling the CPOs and their individual recharging points to participate and contribute to energy flexibility services.
- Collecting recharging point information at MPRN level will better facilitate the completion of detailed technical assessments, by ESBN's network planning team and engineering officers, of new requests for additional public EV recharging infrastructure and the associated capacity requirement at those same or contiguous locations. This will often be linked to the same feeding transformers and substations on the distribution network where EV recharging infrastructure is already connected.
- Knowing the EV recharging point detail at an MPRN level will enable ESBN to directly associate this information with the feeding transformer and substation, utilising it to more effectively

assess and analyse the impact of this EV recharging demand profile on the distribution network.

- Demand modelling by ESBN will be critical to ensure an integrated and planned approach to infrastructure deployment. This will help to minimise the risk of developing stranded assets. It will also assist in ensuring that our energy grid has the capacity to accept planned renewables and will also minimise delays in providing required connections for the multiple new high-power recharging and refuelling points that will be required to meet the mandatory AFIR targets.

Identifying the MPRNs of publicly-accessible EV recharging infrastructure will ensure that this RED III data requirement can be accurately reported, contributing towards fulfilling these obligations.

Lastly, in addition to the AFIR, there are known (as well as potential for further) national and EU reporting requirements relating to the operation of EV charging point infrastructure. For example, RED III Directive requires that the percentage of green energy together with the annual progress in utilising green energy in transport is reported by Member States. Identifying the MPRNs of publicly-accessible EV recharging infrastructure will ensure that this RED III data requirement can be accurately reported, contributing towards fulfilling these obligations. Shortcomings would still remain, however, MPRNs serving charge points often serve other business requirements such as a forecourt and it is not possible to separate the electricity usage of the business from the EV recharging infrastructure. This could only be fully addressed if MPRNs serving charge points were obliged to serve them exclusively, or if the electricity usage per session was reported by CPOs and could be associated with a specific MPRN.

3.3.1 Potential MPRN Solution

After consulting with ESBN, the following solution is being considered.

Description

Given that CPOs will be providing static data on recharging points to the EV recharging infrastructure data systems, the workflow could include a mechanism that supports the notification by the CPO of the recharging-point-identifier and MPRN dyad directly to ESBN, although never handling or storing the MPRN.

In one possible implementation, this would be similar to that of a customer buying online with a credit card whereby the supplier often redirects the purchase activity to an external credit card handling service, thus providing a seamless purchasing experience for the customer (the equivalent here of the CPO). An alternative implementation would provide a bulk-notification facility whereby the CPOs were provided with a list of their known recharging points for validation, and would be enabled to notify their associated MPRNs to the ESBN directly.

Benefits

Under the above process, CPOs would go through a single process for each recharging point whereby both the static data (including recharging-point-id) and the MPRN were confirmed. This should reduce the overhead for CPOs that might be found if two separate processes with two different data systems are required (one to submit the static data, and another, completely separate

process for notifying ESBN of the recharging-point-identifier and MPRN dyad). For the CPOs, provided the MPRN is already known to them, the additional cost, over and above that associated with supplying all the rest of the AFIR-mandated raw data, should be minimal.

There would be no risk introduced related to storing and processing personally identifiable information on the IDRO and associated data exchange systems because the redirection to ESB Networks systems ensures that the IDRO and its data platforms are not in contact with the MPRN. ESB Networks already hosts the raw MPRN data and thus its risk profile would not be changed fundamentally were it to also host the MPRN-charge point dyad.

Drawbacks and Risks

There would be additional technical costs for the State associated with designing, building and running such a solution.

Depending on the complexity of the agreed solution, ZEVI and ESB Networks may have to work together to deliver suitable IT infrastructure to facilitate this arrangement which may not align with the timelines mandated under AFIR, depending on complexity and available resources. This creates a risk that there may be some delay to the delivery of the AFIR-mandated data infrastructure. Actions to mitigate this risk include the specification of a modular and encapsulated design process, removing dependencies across organisations, to safeguard the timelines for the delivery of the State's data ecosystem in support of the handling of the raw data mandated by AFIR.

3.4 Consultation on Proposed Raw Data Points

We are inviting your feedback on the following questions specifically relating to the collection of raw data points.

1. Are you satisfied that all the AFIR-mandated static and dynamic data are the correct data points to gather in support of Ireland's AFIR obligations and national data user requirements? If there are any datapoints that you believe could additionally support data user requirements, please set these out.
2. Do you believe there is a better way than the outlined Potential MPRN Solution above to address this need for raw data to support grid operator and EV infrastructure planning insight? If so, please describe it, including its benefits and drawbacks when compared to the Potential MPRN Solution outlined above.
3. The need to comply with AFIR in supplying the raw data points creates expected and foreseeable operational challenges for CPOs. Are there other significant challenges facing CPOs regarding the supply of this data of which we may be unaware? If so, please describe.

3.5 AFIR Information Derogations

Information goes beyond raw data. Information is often understood to be 'data in context'. In AFIR, there is a clear expectation that the information and insight needs of actors within the EV ecosystem will be facilitated by the provision of the foundational raw data ecosystem. Specifically, it addresses the need of drivers to make informed decisions on their recharging sessions, envisaging that those information services will be developed by market actors.

(68) This Regulation addresses data types that are necessary for the functioning of a competitive and open market, and essential for end users to make informed decisions on their recharging and refuelling sessions including through high-quality information services developed by relevant market actors. The data types requirements laid down in this Regulation should apply only to the data that are available in a digital machine-readable format.

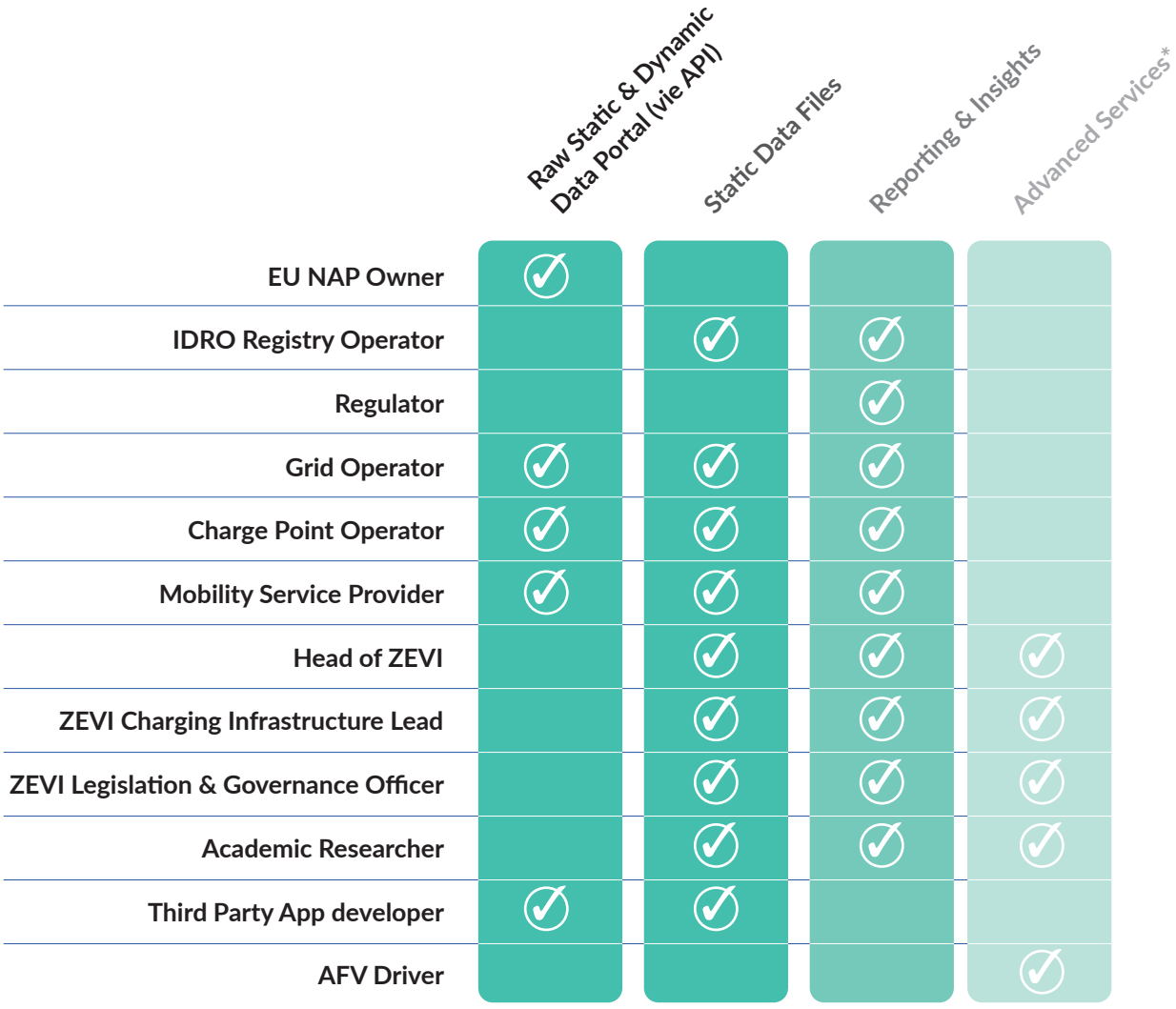
AFIR also talks about broader user needs and the requirement that data users (including public authorities, research organisations, road authorities, and others) be able to access information about the EV recharging infrastructure including, but not limited to, accessibility, availability or power capacity.

(69) Data should play a fundamental role in the adequate functioning of recharging and refuelling infrastructure. The format, the frequency and the quality in which those data should be made available and accessible determine the overall quality of an alternative fuels infrastructure that meets user needs. Moreover, those data should be accessible in a coherent manner in all Member States. Member States should make the data concerning alternative fuels infrastructure available as open data through their national access point in accordance with Commission Delegated Regulation (EU) 2022/670 (20) and in compliance with the additional specifications that are complementary to those set out in that Delegated Regulation. It should also be possible for such data to be provided to a common European access point that the Commission should establish, which should function as a single Union data gateway for the data made available by operators in the national access points. The common European access point should, where possible, build on the existing structures and functions of the European Alternative Fuels Observatory ('EAFO') in conjunction with the TENtec Information System or, for example, be made accessible through a dedicated web portal. The common European access point should enable data users to easily access data, to compare information on price and to obtain information on the characteristics of the alternative fuels infrastructure, such as accessibility, availability or power capacity.

AFIR also envisages that the data ecosystem it describes will enable those data users "to provide information, create services or perform research or analysis on alternative fuels infrastructure".

3.6 User Needs and Information Requirements

We explored potential digital solutions to support prioritised User Stories and related data access needs, identifying access to raw data through the provision of the IDRO and a Data Exchange Platform (DXP) as the foundation underpinning information services that data users may go on to provide. This corresponds to the first column in Figure 1 below.



* Advanced services includes on-screen interactive maps, booking functionalities, payment functionalities, etc.

Figure 1. *How various user types might wish to access and interact with recharging and refuelling charge point data*

Those data users who are seeking information, or performing research and analysis will most likely be indirect users of the raw data. Most would also require that additional services be built upon the data as it is unlikely that they possess the resources required to access, query and generate insight and information themselves from raw data and API access. The approach to providing data access mechanisms to serve these user needs, as well as the information services required for EV Drivers, is outlined in detail in the Proposed Additional Data Access section.

3.7 AFIR Data Standards and Data Exchange Standards Requirements

AFIR reserves the power to adopt delegated and implementing acts regarding the data types (i.e. the raw data points) and the technical requirements for a common data exchange format. It also reserves the power to adopt acts laying down specifications for data quality, frequency and format. The pertinent text from AFIR is as follows:

> *6. The Commission shall be empowered to adopt delegated acts in accordance with Article 22 to: (a) amend paragraph 2 of this Article to include additional data types concerning publicly accessible recharging points and refuelling points for alternative fuels or services inherently linked to such infrastructure that the operators of that infrastructure provide or outsource in view of technological developments or new services made available on the market; and (b) supplement this Regulation by laying down common technical requirements for a common application programme interface to enable an automated and uniform data exchange between the operators of publicly accessible recharging points and refuelling points for alternative fuels and data users.*
>
> *7. The Commission may adopt implementing acts laying down: (a) specifications that are complementary to those set out in Delegated Regulation (EU) 2022/670, related to the data format, frequency and quality in which the data referred to in paragraph 2 of this Article and in the delegated acts adopted on the basis of paragraph 6 of this Article shall be made available; (b) detailed procedures enabling the availability and accessibility of data required pursuant to this Article.*

3.8 Proposed Data Standards and Data Exchange Standards

Ireland has proactively engaged with the EU Commission through the Sustainable Transport Forum Implementation Sub-group, which met to provide feedback on the draft implementing and delegated regulations over the last number of months. Consequently, Ireland has obtained additional clarity regarding the interpretation of AFIR as it currently stands, and how it will evolve under these additional regulations. It must be understood that these will add significant complexity to the data standards and data exchange standards to be applied under AFIR. The insight regarding this anticipated additional complexity has shaped the strategy for the Data above, and also informs the strategy for the data ecosystem outlined below.

CHAPTER 4

Data Ecosystem

As well as setting out requirements and standards in relation to the raw data that needs to be shared by CPOs, AFIR also sets out minimum requirements for the processes and implementation of a data ecosystem to underpin that raw data.

4.1 AFIR Data Ecosystem Requirements

AFIR outlines three primary components that it requires in the data ecosystem; 1. that Member States provide an IDRO, 2. that CPOs make available the specified data points on an open API, and 3. that Member States ensure the data are made discoverable on an open and non-discriminatory basis to all data users through their NAP. The detail of each as described under AFIR is provided below.

1. AFIR's Article 20 describes the requirement for an Identification Registration Organisation as follows:

> *1. Member States shall appoint an Identification Registration Organisation ('IDRO'). The IDRO shall issue and manage unique identification ('ID') codes to identify at least operators of recharging points and mobility service providers, by 14 April 2025.*

The strategy for delivering on this State obligation is outlined in the IDRO section.

2. AFIR's Article 20 describes the obligation on the CPOs to provide data as follows:

> *2. By 14 April 2025, operators of publicly accessible recharging points and refuelling points for alternative fuels, or, in accordance with the arrangements between them, the owners of those points, shall ensure the availability of static data and dynamic data concerning alternative fuels infrastructure operated by them, or services inherently linked to such infrastructure that they provide or they outsource, at no cost.*
>
> [It then describes the specific data, as outlined above in 'AFIR Data Requirements']

The strategy for this data is outlined in the Data section, and depends on CPO-compliance with their obligations as outlined in AFIR's Article 20(2) here.

AFIR's Article 20 describes the mechanism by which the raw data must be supplied openly by the CPOs as follows:

> *3. Each operator of publicly accessible recharging and refuelling points for alternative fuels, or, in accordance with the arrangements between them, the owner of those points, shall set up an Application Programme Interface (API) that provides free and unrestricted access to the data referred to in paragraph 2, and shall submit information on that API to the national access points.*
>
> *The API of each operator of recharging and refuelling points, or, in accordance with the arrangements between them, the API of the owner of those points, shall comply with common*

> *technical requirements established by the Commission in the delegated acts referred to in paragraph 6 to enable an automated and uniform data exchange between the operators of publicly accessible recharging and refuelling points and data users.*

The Data Provision Format section describes the mechanism by which the State expects to be able to ingest the data provided by the CPOs. This mechanism has been designed in such a way as to ensure that if CPOs can provide data for ingestion into this mechanism, then they are compliant with this obligation.

3. AFIR describes the obligation and mechanism by which the Member States ensure that raw data is openly available as follows:

> *4. By 31 December 2024, Member States shall ensure that the data referred to in paragraph 2 of this Article are made accessible on an open and non-discriminatory basis to all data users through their national access points in accordance with the relevant provisions related to such data in Delegated Regulation (EU) 2022/670 and in compliance with the additional complementary specifications that may be adopted in accordance with paragraph 7 of this Article. Where Member States aggregate data under their national access points, they may provide those data to a common European access point by means of an API.*

While at first reading it may seem that the data itself must be ingested by the State's NAP and made available by the 31 December 2024, in fact a close reading of the Delegated Regulation (EU) 2022/670 enables the understanding that the State's NAP must provide the means for data users to discover the data that is made openly available by the CPOs. The EU Commission have clarified that this is indeed the correct interpretation. This discovery mechanism is already in place in the NAP. This is discussed in further detail under the NAP section.

4.2 Data Infrastructure Additional Implementation Considerations

Although the main components of the data infrastructure are outlined in AFIR, there are several other key considerations regarding the technical infrastructure and organisational structures that can be used to house those components designing the data infrastructure to provide the best fit for the environment extant in each member state. Central to this is whether or not Ireland should opt to develop and maintain a central platform for collecting, managing and disseminating EV infrastructure data. This would often be described as a data exchange platform.

In Ireland, a National Access Point already exists, but it functions as a data discovery portal rather than as a data exchange platform (this is permitted under the ITS Regulation describing the function of the NAPs).

Further, the technical specifications in the current draft implementing and delegated data regulations place obligations on the Member States around data quality control which mean that the NAP is expected to be capable of monitoring the quality of the data, which it could not do were it to continue to act only as a data discovery portal in this regard.

Given that there are no plans to change the nature of the NAP from data discovery to data exchange, there is therefore a need to develop an active data quality management capability.

Apart from data quality obligations placed on each Member State, AFIR enables Member States to decide whether they will take a proactive role in the collection and provision of the data in question, or take a passive approach: relying completely on the CPO-mandated obligations with regard to data provision to service the data users. This would make all data users reliant solely on CPOs for their data, and would mean that they had to connect to multiple CPO data sources in order to build information services.

Given the imperatives and purpose of AFIR as described here, the preference in Ireland is to adopt a relatively proactive pathway so that it is possible for it to ensure that access to high-quality data is provided here.

It would also make data quality management obligations on the State under AFIR very difficult in Ireland because the State would have limited visibility. Further, if data users were encountering difficulties in gaining access to data, or in the quality of the data provided, they would find it difficult to resolve those issues as there would be no central, State-provided platform where these difficulties could be monitored or proactively resolved.

Given the imperatives and purpose of AFIR as described here, the preference in Ireland is to adopt a relatively proactive pathway so that it is possible for it to ensure that access to high-quality data is provided here. Taking the proactive approach will enable the State to ensure that data access from CPOs is forthcoming, to ensure that the data provision mechanism is appropriate, to ensure that the data is of high quality, and to ensure that the data is made centrally available for data users to build information services.

For all of the above reasons, it is therefore proposed to build a Data Exchange Platform (DXP) to house the data management and exchange functionality as outlined by AFIR.

This will create long-term data management resource requirements, but it is felt that these are justified given the fundamental importance of this data to the proper functioning of the EV recharging market in Ireland. We consult on taking this approach in Consultation on Data Exchange Platform (and NAP) Implementation.

Whether to house that function together with the IDRO, and how to integrate it into the NAP are other key questions considered in the development of this strategy.

4.2.1 International Research

To assist in identifying the potential structures for implementation, international research was conducted over several weeks, comprising desktop research, written communication with other members of the Identification Registration Repository (IDRR) Steering Committee, and one-to-one interviews with colleagues representing the offices concerned in delivering EV data architecture in nine other EU member states. The findings are presented hereunder.

4.2.2 IDRO and NAP: Centralised or Decentralised Organisations and Technical Infrastructure

Prior to the publication of the recent AFIR requirements, several EU member states already had various approaches to the sharing and consolidation of data generated from recharging infrastructure with the aim of facilitating access to information for EV drivers (Table 2). The

approach to the Identification Registration Organisation (IDRO), the data exchange platform (DXP)[1] setup, the role of the NAP, and the organisational structure and responsibilities can be categorised into one of two predominant approaches: centralised and decentralised.

4.2.3 Organisation

In the case of a centralised approach, the IDRO and DXP are the responsibility of a single entity. Examples of countries that have adopted a centralised approach include Austria and Portugal.

Conversely, in a decentralised approach the IDRO and DXP are the responsibility of more than one entity. The IDRO function may lie with an industry association – in the case of Norway, the EV Drivers, but in the case of Germany, it is the EV manufacturers and businesses – or within another government office. Similarly, the DXP may sit apart from the IDRO in, for instance, an existing organisation responsible for complementary national databases, as in France.

In BeNeLux the IDRO operation for those three States has been centralised into a single office, whilst they continue operating three separate DXPs – one for each country.

The decision to centralise or decentralise seems to be largely driven by the existing organisational structures available within each state, and whether or not efficiencies can be wrought from centralising.

4.2.4 Technical Infrastructure

Whether or not the functions of the IDRO and NAP/DXP sit within a single technical infrastructure largely depends on their organisational structures. In discussion with BeNeLux it became apparent that their IDRO function does not require significant technical infrastructure, and that the organisational efficiencies available from centralising only the three states' IDRO office function outweighed any efficiencies that could be gained from gathering all three IDRO and data-solution infrastructures together at national level. As such, there is a single IDRO for Belgium, Netherlands and Luxembourg, but three separate NAP/DXP solutions.

Separately, the drivers for states' decisions to house a data exchange platform within an existing NAP were considered. A state NAP is a requirement of Directive 2010/40/EU, also known as the Intelligent Transport Services Directive. However, that NAP can take many forms. Most function as a registry, essentially providing information on how to access various sources of open transport data. France is the only EU Member State where the existing NAP already provided data exchange functionality. The UK has a similar operational arrangement and both these countries have opted to house the DXP functions within their NAP.

In Portugal, Netherlands, Greece and Norway, a separate DXP has been set up to ensure data regarding EV recharging infrastructure is collected, managed and published by the State. In these states, the DXPs have effectively assumed the AFIR-mandated role of the CPOs as described in AFIR, accepting the data in from the CPOs or their agents, often through OCPI, and then ensuring it is made openly available in a standard open format. These DXPs are referenced by their respective NAPs as the source for data on the publicly-accessible EV recharging infrastructure.

[1] Across the countries considered, the DXP took different forms, but can be characterised as a structure that functions as a central, integrated source of disparate sources of data.

4.2.5 Public or Private

This NAP/DXP is not necessarily under the remit of a government body but might be outsourced to another organisation, for instance, NOBIL in Norway was set-up originally between industry actors. In Flanders, Belgium, the DXP is the responsibility of a private company and was set up prior to the AFIR regulations and before open data sharing was required – the regional government believes that collecting, integrating and providing recharging infrastructure data should be a market driven process.

The decision to house the functionalities privately or publicly seems to stem from both a will to leverage existing structures, and, in some cases, a belief that having private or industry associations involved can lessen the burden on the State whilst increasing buy-in from stakeholders such as CPOs and therefore increasing the likelihood that they will volunteer to share the data. However, it is worth noting that the decision to support industry-led data management and sharing were made by these states prior to the introduction of a legal obligation on the CPOs to share open data.

Table 2. *Summary of international precedents*

Country	In place	Owner	IDRO/DXP Centralisation	DXP/NAP Integration	Interface
Austria	✓ IDRO	Government regulator	Centralised	The NAP links to the DXP.	Web
	✓ DXP	Government regulator			
Benelux	✓ IDRO	Government	Decentralised	The NAP links to the DXP.	None
	✓ DXP	Private company			
Estonia	✗ IDRO	NA	NA	NA	NA
	✗ DXP	NA			
France	✓ IDRO	Industry association	Decentralised	The NAP functions as the DXP.	None
	✓ DXP	Government			
Germany	✓ IDRO	Industry Association	Decentralised	The NAP links to the DXP.	None
	✓ DXP	Private company			
Greece	✓ IDRO	Government	Centralised	The NAP links to the DXP.	Web
	✓ DXP	Government			
Norway	✗ IDRO	NA	NA	The NAP links to the DXP.	None
	✓ DXP	Industry Association			
Poland	✓ IDRO	Government	Centralised	The NAP links to the DXP.	Web
	✓ DXP	Government			
Portugal	✓ IDRO	State-owned enterprise	Centralised	Not linked or integrated.	Web
	✓ DXP	State-owned enterprise			
Switzerland (non-EU)	✗ IDRO	NA	NA	The NAP links to the DXP.	Web
	✓ DXP	Government			
UK (non-EU)	✗ IDRO	NA	NA	The NAP functions as the DXP.	None
	✓ DXP	Non-profit research and consultancy			

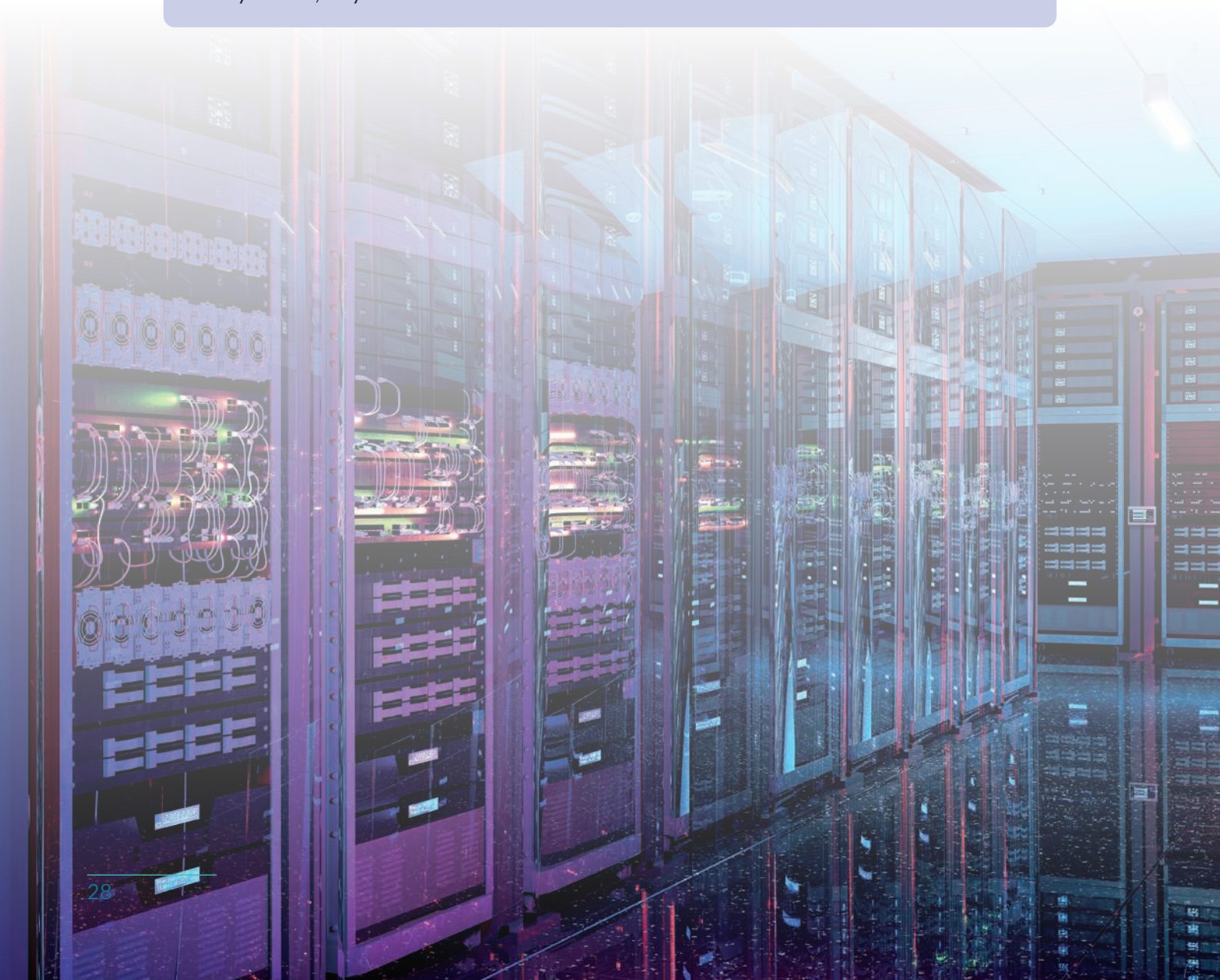
4.3 IDRO, DXP, NAP: Organisation and Technical Infrastructure Implementation

The IDRO and DXP functions will be co-located within Transport Infrastructure Ireland. Technical and management efficiencies will be provided by centralising the functions of the organisation issuing unique IDs to charge point operators, e-mobility service providers and charge points, together with the data exchange platform that hosts the EV Infrastructure data.

4.4 Consultation on Data Ecosystem Organisation and Technical Infrastructure

To help to structure feedback, we ask the following question:

1. Do you consider it appropriate that Ireland adopts the relatively proactive approach outlined above with regard to ensuring the provision of high-quality data on the publicly-accessible EV recharging infrastructure? If so, why? If not, why not?
2. Do you consider that the data ecosystem as described above will enable Ireland to comply with its obligations for providing open data as described under AFIR and the ITS? If so, why? If not, why not?



4.5 Implementation Plan for Data Ecosystem

4.5.1 IDRO

AFIR describes the functions of the IDRO in further details as follows:

> *It is crucial that all actors in the electric mobility sector can interact easily through digital means to provide the best service quality to end users. Such interaction requires unique identifiers for the actors in the value chain. To that end, all Member States should establish an Identification Registration Organisation ('IDRO') for issuing and managing unique identification ('ID') codes to identify, as a minimum, operators of recharging points and mobility service providers. Each IDRO should collect information on e-mobility ID codes that are already in use in its Member State, issue new e-mobility ID codes, where needed, to recharging point operators and mobility service providers under an Union-wide common agreed logic in which e-mobility ID codes are formatted, and enable the exchange of those e-mobility codes and the verification of their uniqueness via a potential future common Identification Registration Repository ('IDRR'). The Commission should issue technical guidance on the set up of such organisations, drawing on the outcome of IDACS*

The IDRO functions will be built to facilitate AFIR's above description of this component. The role of IDACS has now been subsumed into the IDRR steering committee.

Through our consultation with the IDRR steering committee and our international research, it has emerged that there are some differences between Member States in the approach to issuing unique identification codes.

It is our intention to ensure that the IDRO facilitates the identification of recharging points, CPOs and eMSPs on a unique basis, that remains persistent over time. This means that we intend that even if a recharging point owner engages the services of a recharging point operator for the first year of operation, and switches to a different recharging point operator for the second year of operation, the recharging point itself will maintain a persistent ID. This recharging point persistent ID will be associated with the CPO-generated recharging point ID so that the IDRO can provide a registry of the CPO associated with every physical recharging point in the State. CPOs will remain free to use their existing identifiers in their day-to-day operations.

It is also intended that every CPO and eMSP active in the State must be registered with our IDRO, even if the Irish IDRO it is not the issuer of their first European IDRO ID.

Lastly, it is intended that an ID will be issued (or registered if already previously issued legitimately by another IDRO in line with the conditions outlined here) on a unique basis for each verified legal entity operating in Ireland – one and only one IDRO-issued ID per verified legal entity.

Further, that this registration will be reviewed for continuation quarterly whereby appropriate checks will be made on the data quality supplied to the DXP under that registration before it is agreed to continue the registration.

A register of the entities managed in the Irish IDRO will be made public and eventually contribute to a future EU Identification Registration Repository.

4.5.2 Consultation on Proposed IDRO Implementation

We are inviting feedback in response to the following questions:

1. Do you consider it appropriate that the IDRO should enable the unique identification of recharging point operators – one operator, one ID? If so, why? If not, why not?
2. Do you consider it appropriate that the IDRO should enable the unique and persistent identification of recharging points – one persistent ID for a recharging point, even if the operator changes? If so, why? If not, why not?
3. Do you consider it appropriate that the IDRO should only continue registrations where appropriate data quality has been maintained during the previous quarter? If so, why? If not, why not?

4.5.3 Data Exchange Platform (and NAP)

A DXP will be provided to make available the integrated data on publicly accessible EV recharging infrastructure. The DXP will support the provision and integration of the specified static and dynamic data, which must be provided by all CPOs. It will also be referenced by the existing Open Data Portal, which is operated by the Department of Public Expenditure, NDP Delivery and Reform and hosted at data.gov.ie. The Open Data Portal will function as the NAP referred to in AFIR, and will provide data discovery services in satisfaction of Article 20(4).

It is envisaged that accepting the data into the DXP may include implementing some or all of the following:

- Open Charge Point Interface (OCPI) peer-to-peer direct connection with CPOs or a data-service provider appointed by CPOs
- Open API solution, which must be DATEX-II-compatible or AFIR-Data-Annex-compatible, yet to be specified

It is envisaged that making the data available may include implementing some or all of the following:

- Closed API solution, which must be DATEX-II-compatible or AFIR-Data-Annex-compatible, yet to be specified, and made available to pre-screened users
- Open API solution, which must be DATEX-II-compatible or AFIR-Data-Annex-compatible, yet to be specified, and made available to pre-registered users
- Open publication

The strategy for the DXP will be implemented by TII.

4.5.3.1 Data Protection

No information pertaining to vehicle or driver identification will be gathered. The recharging point data to be gathered does not include any reference to a vehicle or driver (see Table 1 above).

Although we are considering facilitating CPOs in notifying the ESB Networks of the MPRN associated with each recharging point, it is intended that neither the DXP nor the IDRO would handle that MPRN. For that reason, it does not require data protection evaluation for this data infrastructure. ESB Networks will conduct their own data protection examination in this regard.

Any personal or personally identifiable data that is gathered, for instance, for account administration or other reasons, will be subject to standard GDPR principles and will be kept and processed in line with same.

4.5.3.2 Security

EU laws on the security and resilience of critical infrastructure apply to the entities with responsibility for providing essential services in upholding key societal functions, supporting the economy, ensuring public health and safety, and preserving the environment. This includes the entities delivering services that provide availability and access to road data as defined by the ITS Directive, which includes data on infrastructure for recharging and for refuelling with alternative fuels and the essential interoperability services for that data.

In accordance with the following list of EU Regulations and Directives, the DXP will have to be designed, implemented and managed in full compliance with the CER Directive, NIS2 Directive, and AFIR:

- Article 4 of the ITS Directive 2010/40/EU as amended by ITS Directive 2023/2661.
- Article 2 and Annex of the Critical Entities Resilience (CER) Directive, which includes ITS entities. CER defers to the provisions of the NIS2 Directive with respect to cybersecurity requirements for compliance with CER, and adds physical risk and resilience requirements. CER must be transposed into Irish law by 18 October 2024.
- Article 2 and Annex I of the Network and Information Security (NIS2) Directive EU 2022/2555, which includes all CER entities. NIS2 must be transposed into Irish law by 18 October 2024.
- Para. 75 of the AFIR preamble.

In summary, the DXP must be implemented to be fully compliant with the requirements of the NIS2 Directive, which will cover the cybersecurity compliance requirements of AFIR and CER.

4.5.3.3 Governance and Oversight for the DXP and IDRO

All components of this data ecosystem will have appropriate internal governance policies and procedures documented and enacted. The AFIR Implementing Regulation on Data will outline guidance on the format, frequency and quality of the data.

Under AFIR, the CPOs generate the data supplied to the DXP, and they have the obligation to ensure its quality, and to define a quality control mechanism. 'Quality' will be further defined under AFIR Implementing Regulation as comprising completeness, correctness, consistency, timeliness and integrity. Under AFIR, the NAP (in this case the DXP) has an obligation to monitor the quality of the data provided to it.

All these obligations will be incorporated into the governance policies for the platforms. The Department of Transport's Data and Analytics Division (DAAD) has been consulted and it will also provide some assurance in this regard in due course.

4.5.3.4 EU Access Point

By 2026, the European Commission endeavours to establish an EU-wide access point portal to link the various national data sets under one interface. Ireland may supply information to this portal via API (the format of which has not yet been specified by the Commission). This may necessitate further design and delivery. We will evaluate and address this requirement once it is triggered.

4.5.4 Engagement

Workshops and one-to-one meetings have been conducted with several CPOs in Ireland to ascertain their data management practices, and the data-related challenges and opportunities they feel that AFIR provides.

Upon publication of this strategy, submissions responding to the consultation questions herein will be accepted on a written basis. After this, a further opportunity for group-based as well as one to one consultations will be organised prior to the publication of the final strategy.

Additionally, it is desirable to involve at least two voluntary CPOs to assist in the design and implementation for the IDRO and DXP, which has been running from summer 2024 and will continue, iteratively, until summer 2025. To that end, CPOs were invited in July 2024 to volunteer to participate. Several have volunteered and are now actively involved.

4.6 Consultation on Data Exchange Platform (and NAP) Implementation

We are inviting feedback in response to the following questions:

1. It is planned that a DXP will amalgamate disparate CPO-provided data and make it openly available. Is this an appropriate proposal? If so, why? If not, why not?
2. The three forms of data provision into the DXP under consideration have been outlined above.
   a. Are these appropriate forms of data provision from CPO to DXP? If so, why? If not, why not?
   b. Should we consider other forms of data provision? If so, please describe.
3. The three forms of making data available directly from the DXP under consideration have been outlined above. Are these appropriate forms for making this data available? If so, why? If not, why not?

4.7 Proposed Additional Data Access

Ireland accepts AFIR's description of data users as including those who also provide information and insight. The provision of information and insight is beyond the immediate scope of this strategy: our primary concern is to meet the raw data and infrastructure requirements under AFIR in support of data users.

Nonetheless, how to provide different data access methods will also be considered. This would enable some data users to more easily obtain the data that they could then use to conduct the analysis that would serve their information needs.

It is anticipated that this may involve:

- providing a digital interface for querying and downloading raw recharging point data;
- collaborating with the Central Statistics Office regarding the publication of periodic summary tables designed to support the most frequently asked questions of the data;
- collaborating with NAP regarding the publication of the data;
- collaborating with Department of Transport Analytics Office on the generation of reports covering AFIR-related reporting obligations on Zero Emission Vehicles and Infrastructure

This project will commence once resources become available from the implementation of the Data Ecosystem. The estimated timeline is May 2025 for commencement with a delivery date of November 2025.

The first step within the project will be to undertake a review of the user stories already gathered as they may need to be refreshed or updated considering latest information. They will then be assessed and their pathways decided. At this time, a formal project planning phase will occur, and the concrete deliverables, timelines, dependencies, stakeholders, constraints and resources will be identified or assigned.

4.8 Data Access for EV Driver Information Needs

Recognising the importance of an information-based service for EV Drivers, we acknowledge that, as envisaged by AFIR, it would be best provided by the market. International research on other EU countries has shown that when open static and dynamic recharging infrastructure data is provided, the private market steps in to provide public-facing solutions, such as journey planning, reservation, and payment applications. It is our intention to provide the data ecosystem and access required as a foundation for the market to provide EV Driver information services.

ZEVI has offered information sessions (regarding the open data that will be made available under AFIR) to market actors who are or may be interested in providing information services in Ireland including those who may provide services to CPOs, eMSPs and EV Drivers.

No later than May 2026, a review will be undertaken to assess whether the information needs of EV Drivers are being appropriately met by the market. This will provide the market with a year in which to develop a solution based on the data provided to the DXP in April 2025. If the solutions on the market at that time do not satisfactorily meet EV driver needs, then additional planning and implementation may be required to address any shortfall.

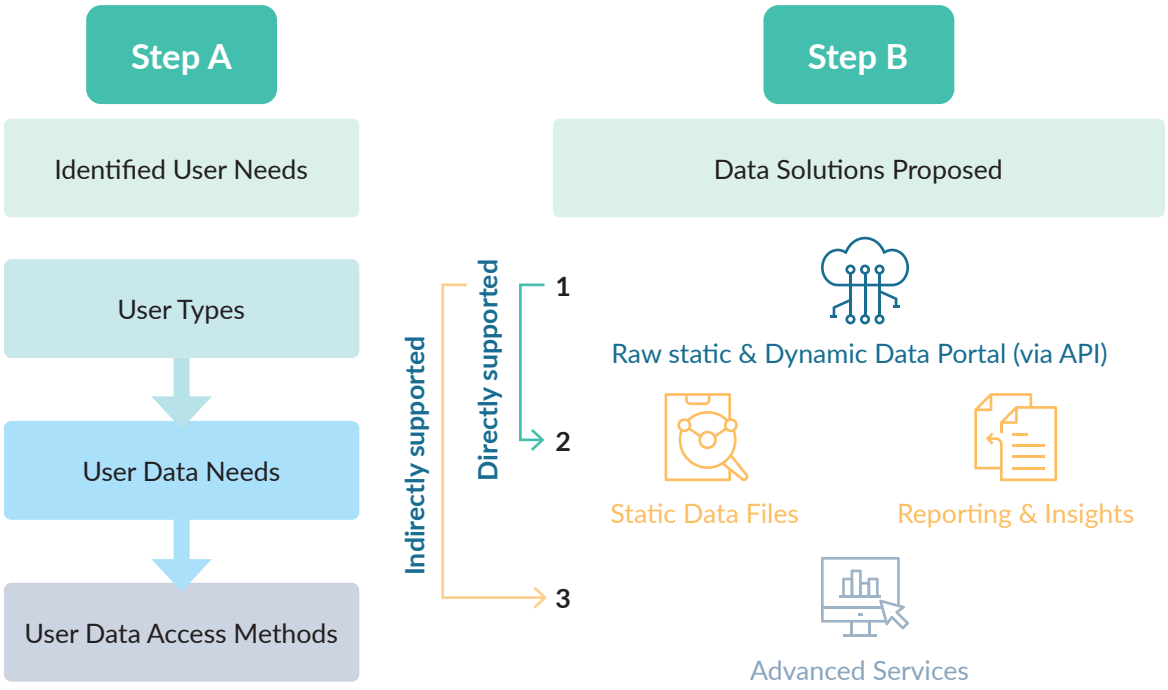


Figure 3. *shows how the user stories were used to clearly communicate the intent behind features and functionality.*

4.9 Consultation on Proposed Additional Data Access, including information for EV Drivers

We are inviting feedback in response to the following question:

1. In order to support data users who wish to generate information and insight, the above data access solutions are being considered in addition to the openly available raw data provided by DXP. Is this an appropriate proposal? If so, why? If not, why not?
2. Do you agree that meeting the obligations for raw data collection, management and dissemination as described under AFIR, along with the provision of the proposed additional data access methods, is the best way to support the information-related needs of EV Drivers? If so, why? If not, why not?

CHAPTER

5

ITS and AFIR – Key Obligations and Responsibilities

The ITS Directive, AFIR and their implementing and delegated regulations introduce many technical requirements that CPOs must meet. In this section we aim to provide an overview of the strategic and technical pathway that is being laid out in Ireland to enable ITS compliance in the first instance, with a transition to AFIR compliance.

5.1 Data

The ITS and its delegated regulation create the obligation on CPOs to supply two kinds of information, specified in its Annex as follows:

> *(1) The types of data on infrastructure: [...]*
>
> *(e) location of recharging points for electric vehicles and the conditions for their use;*
>
> *(6) The types of data on the real-time use of the network: [...]*
>
> *(g) availability of recharging points and stations for electric vehicles;*
>
> *(i) price of ad hoc recharging/refuelling.*

These are quite broad categories – similar to the concept of 'static' data and 'dynamic' data defined in AFIR. The ITS delegated act requires this data to be shared by January 1st 2025. AFIR requires many more specific data points to be shared under these two categories, and they must be shared by 14th April 2025.

5.2 Data Provision Format

The ITS and its delegated acts mandate that the data must be shared in a standardised format and provides examples of same. Article 4.1 states:

> *For the purpose of facilitating the provision of compatible, interoperable and continuous real-time traffic information services across the Union, ... recharging and refuelling-related stakeholders shall provide the data on infrastructure listed in the Annex they collect in a standardised format such as INSPIRE data specification .., TN-ITS (...) or DATEX II.*

This means that data shared using OCPI would be considered to suffice for ITS. However, AFIR mandates that additional data types not already covered by OCPI must be shared. This means that OCPI is not sufficient for compliance with AFIR. It is, however, possible to enhance certain OCPI data types to provide the additional detail demanded by AFIR, and to continue to use the OCPI-provided data exchange mechanism.

Further, the draft delegated and implementing data acts specify that the data must be shared via API in a form compliant with DATEX II and the Commission has clarified definitively in further communication that OCPI is not sufficient for this purpose. However, it has proposed that the date for DATEX II-compliant data exchange would be pushed out to 14 April 2026.

5.3 CPO Responsibility

For CPOs, this means that:

- by January 1st 2025 they must be able to supply the ITS-mandated data types, optionally in OCPI;
- by 14th April 2025 they must be able to supply the AFIR-mandated data types, optionally in structurally-enhanced OCPI; and,
- by 14th April 2026 they must be able to supply the AFIR-mandated data types via a DATEX II-compliant API.

5.4 Exchange and Reuse

Under ITS 4.2, this data, and the corresponding metadata including information on the quality thereof, shall be accessible for exchange and re-use by any data user within the Union:

> *a) on a non-discriminatory basis;*
>
> *b) following minimum quality requirements that Member States shall agree upon in cooperation with relevant stakeholders;*
>
> *c) within a time-frame fitting to the reliable and effective use of the data to create real-time traffic information;*
>
> *d) via the national or common access point referred to in Article 3.*

5.5 CPO Responsibility

For CPOs this means that:

- by January 1st 2025, they must make the data available to any data user that requests it; and
- by January 1st 2025, they must make that data discoverable via the NAP.

5.6 NAP

In the ITS Directive, the obligation on Member States to provide a NAP is outlined in Article 3 as follows:

> 1. *Each Member State shall set up a national access point. The national access point shall constitute a single point of access for data users to the data listed in the Annex, including data updates, provided by the data holders as referred to in Articles 4 to 11 and concerning the territory of a given Member State.*
> 2. *Existing national or common access points that have been set up to comply with Article 3 of Delegated Regulation (EU) 2015/962 or with the requirements arising from other delegated acts adopted under Directive 2010/40/EU may be used as national access points for the purposes of this Regulation if deemed appropriate by the Member States.*

3. *National access points shall provide discovery services to data users, for example services allowing for the search of the requested data using the contents of the corresponding metadata and displaying such contents.*
4. *Public and private data holders shall ensure that they provide the metadata in order to allow data users to discover and use datasets via national access points.*

5.7 Member State Responsibility

As described, the NAP provides discovery services. Under ITS, it is mandated to supply a search facility enabling data users to find where and how they can access the CPO-supplied service that provides the refuelling infrastructure data, by January 1st 2025. The NAP does indeed supply such a search facility, as well as the means to register as a data provider, and the ability to register the data service. This means that the State is already compliant with its obligations under ITS. It is also compliant with its related obligations under AFIR, Article 20 (4).

5.8 CPO Responsibility

The delegated acts associated with ITS come into force on January 1st 2025. CPOs should therefore register their chosen data-provision service in the NAP by the end of 2024 in order to be compliant with ITS.

CHAPTER

6

Strategy - Implementation Plan

6.1 Planning and Responsibilities

Each project described above will be meticulously planned and executed, with regular reviews and checkpoints to track progress, identify potential risks, and adjust strategies as needed. We have placed a significant focus on cross-organisation collaboration and communication, ensuring alignment between teams, regulation, and end-users to deliver solutions that meet requirements. Detailed planning is in train for the provision of the Data Ecosystem while the remaining requirements are being managed under the Data Strategy Programme.

Public consultation for this draft strategy will enable further detail for the implementation plan to be included. Similarly, while work progresses on the data ecosystem additional implementation needs will become clear. This additional detail will be included in the final strategy document.

6.2 Governance

This strategy is being implemented under the governance of a Data Strategy Programme. This is led by ZEVI, and consists of representatives from ZEVI, TII and the Department of Transport. This strategy will contribute to the governance associated with Ireland's obligations under AFIR, assisting in the monitoring and reporting of same. At minimum, the strategy will provide auditability to the data requirements of Ireland under the AFIR requirements and will also deliver into the reporting at a National and International level for the IDRO and Electric Vehicle Data-related AFIR requirements.

Governance considerations for the data ecosystem has been described above under 4.5.2.3 Governance and Oversight for the DXP and IDRO.

6.3 Constraints

The transition of the ZEVI function into TII and the establishment of the long-term nature of its roles and responsibilities will happen in tandem with the consolidation of plans for the operation of the EV recharging ecosystem in Ireland.

This data strategy is setting out requirements for data infrastructure and policies today that need to serve Ireland in the long term. However, not all the requirements for that system are yet known because the context in which it will operate is not fully established.

6.4 Risks and Mitigation

Potential Risk	Mitigation Strategy
Aligning technical infrastructure to incorrect regulatory environment	Provide evidence-based arguments drawn from international analysis. Collaborate with stakeholders to propose solutions that meet industry needs whilst being tailored to the regulatory environment in Ireland.
Policy challenges	Establish clear policy objectives and priorities aligned with the goals of this strategy. Conduct stakeholder consultations to identify potential policy challenges and develop mitigation strategies accordingly. Advocate for policy changes where necessary to support the implementation of this strategy.

Potential Risk	Mitigation Strategy
Inadequate understanding of user requirements	Conduct comprehensive stakeholder interviews and user research to gather all requirements before deciding which are in scope. Engage stakeholders throughout the development process to validate and prioritise requirements.
Technical delivery challenges	Invest in skilled technical resources and expertise to ensure effective technical delivery of the data strategy. Conduct thorough technical assessments and feasibility studies to identify potential challenges and develop mitigation plans. Implement agile development methodologies to adapt to changing technical requirements and priorities.
Engagement with stakeholders	Foster open communication channels with stakeholders through regular meetings, workshops, and consultation sessions. Provide clear and transparent communication regarding the objectives, benefits, and progress of this strategy. Incorporate stakeholder feedback into the planning and implementation process to ensure alignment with stakeholder needs and expectations.
Vendor lock-in	Adopt open standards and interoperable technologies to minimise dependency on specific vendors. Implement vendor-neutral solutions and avoid proprietary technologies that may lead to vendor lock-in. Conduct thorough vendor evaluations and negotiate vendor contracts with flexibility and exit strategies in mind.
Insufficient Data Exchange Platform Scalability	Perform thorough scalability assessments during the design phase. Implement modular architecture and cloud-based infrastructure to accommodate growth. Regularly review and optimize platform performance.
Absence of Clear Governance Structure for IDRO Delivery	Establish a dedicated governance body comprising relevant stakeholders to oversee IDRO delivery. Define roles, responsibilities, and decision-making processes to ensure effective governance and accountability.
Technical Integration Challenges with AFIR Data Requirements	Conduct comprehensive technical assessments to identify integration challenges upfront. Implement interoperable data standards and protocols to facilitate seamless integration with AFIR data requirements.
Non-provision of data from CPOs	Engage with CPOs to understand their data management infrastructure and policies, and their technical and resource constraints so that the data ecosystem and data policies can be designed while being cognisant of those; meeting our obligations and still delivering the objective for the strategy.

CHAPTER

7

Summary

7.1 Summary

This strategy describes the policy approach to data provision and the proposed data infrastructure that will support the data users of the electric vehicle infrastructure in Ireland and meet Ireland's regulatory obligations as laid out under AFIR. It provides a summary of those under two key pillars:

- Raw Data: describes the raw data standards, the data exchange standards and the data access that will be required to meet AFIR and wider data user needs. Specifically considers whether the information needs of EV Drivers are being satisfactorily served.
- Data Ecosystem: describes the data infrastructure that will enable meeting the existing regulatory obligations and sharing open data on the publicly accessible EV recharging infrastructure in Ireland.

It also describes the pathway for CPOs and the State to transition from compliance with ITS to AFIR. It finishes with the implementation plan for the Data Strategy Programme.

7.2 Strategy – Overall Consultation

To help to structure feedback, we ask the following question:

1. With regard to this strategy in its entirety, is there any substantive area or issue missing from it that you believe should be addressed? If so, what is it?

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