



Hyper-**N**etwork for **e**lectro**M**obility

NeMo D1.3 Interoperability and Regulatory Requirements

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Glossary of terms

Term	Description
Electromobility or e-mobility	The use of electric-powered drivetrains for road vehicles designed to shift vehicle design away from the use of fossil fuels and carbon gas emissions.
e-roaming or eRoaming	A market model in electromobility whereby EV drivers may charge their vehicles at all charging stations, regardless of any contracts concluded with operators. The billing then takes place via the customer's own contractual partner.
Hyper-Network	A distributed environment with open architecture based on standardised interfaces, in which actors (physical or digital) can connect and interact seamlessly, exchange data and provide integrated and interoperable ICT services.



List of abbreviations and acronyms

Abbreviation	Meaning
API	Application Programming Interface
CP	Charge Point
CPO	Charge Point Operator
DSO	Distribution System Operator
EMP	ElectroMobility (service) Provider
EV	Electric Vehicle
EVSE ID	Electric Vehicle Supply Equipment Identity
ICE	Internal Combustion Engine
ICT	Information and Communication technologies
NeMo	Hyper-Network for electroMobility
OEM	Original Equipment Manufacturer (automotive industry)
RES	Renewable Energy Sources
RFID	Radio-Frequency Identification
SME	Small and Medium-sized Enterprises



Executive Summary

This deliverable presents the results of the work conducted within Task 1.5 of the NeMo project. The aim was to analyse the current regulatory frameworks relevant to electromobility, identify barriers and propose regulatory measures at national and European level, and extract interoperability and regulatory requirements for electromobility in general and specifically for the NeMo Hyper-Network.

The work was based on an analysis of the regulatory frameworks for electromobility on national as well as on international level. Using a structured form, data on the current regulatory frameworks from 31 European countries have been collected. The dynamic development of the electromobility sector has a great impact in the development of the regulatory frameworks, which is reflected in uncoordinated actions from different regulatory bodies and agencies with limited interaction among them. Various barriers to interoperable electromobility services provision have been identified. These are relevant to the electromobility domain per se, but also relevant to the energy and electricity domains, and to the ICT domain. Therewith, high-level interoperability requirements have been extracted, grouped in the following groups:

- Requirement #1: Interoperability between the regulatory bodies
- Requirement #2: Interoperability between the regulatory and contractual frameworks
- Requirement #3: Interoperability between the Business Models of the involved players
- Requirement #4: Semantic Interoperability

Recommendations have been formulated for each of the above areas, based on the country analysis and based on experts' discussions. Regulatory requirements for the NeMo Hyper-Network have been outlined. Suggestions for standardisation and regulatory activities have been collected per country and they will be used as input in WP2, to define the proposals for standardisation within T2.4 of NeMo.

According to the Description of Work, this Task also includes analyses of the communication protocols and standards. However, in parallel to WP1, an analysis of the standardisation efforts and communication protocol is being performed in Task 2.4, which will result in a list of standards and protocols that need to be considered. In the future, this list will be analysed in detail, specifying the standardisation requirements per NeMo business scenario and per category of electromobility actors.



1. Introduction

Electromobility is widely promoted by regulatory bodies aiming to contribute to the environment protection and to enhance the citizen's quality of life. More and more electric vehicles (EVs) models are entering the market and the quantity as well as the quality of the charging infrastructure is being improved.

Still, finding an appropriate and available charging point is currently not as simple as refuelling an ICE vehicle. Owners of electric vehicles are often in contractual agreement with specific charge point operators (CPOs) and it is not always possible for them to charge their vehicle at a charging point, if this is operated by a different provider. Existing electromobility services, aiming to help the electric vehicle owner to locate and book a charging session, are not interoperable at a national and cross-country level. Not even the information about charging points, charging operators and services is available at the same level of detail in each European country.

The main aim of the NeMo project is to create a Hyper-Network of tools and services to ensure interoperability of electromobility services and to establish an open, distributed and widely accepted ecosystem for electromobility. The NeMo vision is to bring the successful interoperability paradigm of seamless roaming (as in mobile communications) into the domain of electromobility services, paving the way for a Pan-European Inter-Roaming framework.

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2. Methodology

The work within Task 1.5 of NeMo was based on analysing the current regulatory frameworks in the various European countries. A structured form was used to collect data about the regulatory framework relevant to electromobility, electric energy supply, provision of ICT services and supporting roadmaps and strategies in the various European countries. Data have been collected from the following 31 countries in Europe:

- Focus countries: Austria, France, Germany, Greece, Italy and Spain
- Other EU countries: Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom

The collected data are included in an annex to this document.

A comparative analysis of the current frameworks and discussions with experts during the first NeMo Stakeholder Forum Conference, which was held in October 2017 in Stuttgart, have resulted in the identification of barriers to interoperable electromobility, which are presented in Section 3, and in the extraction of high-level interoperability and regulatory requirements, which are presented in Section 4.

Suggestions for standardisation and regulatory activities have been listed in the annex for each country surveyed and will serve as input for Task 2.4, to derive the NeMo proposals for standardisation.



3. Electromobility barriers

The electromobility market is highly dynamic and is expected to change the mobility and transport sector tremendously. Therefore, as shown in Annex 1, a lot of initiatives, projects and national regulations have formed throughout Europe, to increase the accessibility and customer friendliness in this area of business

Interoperability is the ability of various systems to work together. Regarding electromobility, interoperability means that a driver of an electric vehicle should be able to book, charge and pay for charging at any available charging station, using his/her usual authorisation and payment means. Additionally, if the driver uses a supplementary service, for example to locate a charging station, he/she should be able to seamlessly use this service at any region or country.

The above require as a basis interoperable data and roaming agreements between charging points operators.

3.1 Electromobility domain

The interoperability between charging point operators and charging infrastructure networks has to be ensured in order to avoid regional or national borders becoming “technical” borders for electric vehicles. This requires common payment platforms, harmonized legislation and international collaboration on installation of infrastructure. One solution for that throughout Europe, is the establishment of standards and interoperable protocols regarding technical, legal and businesswise issues, which requires cooperation between authorities and initiatives across countries. Electromobility also heavily affects the broad fields of energy and electricity as well as ICT. By joining forces and initiatives, authorities can foster electromobility across borders and fields.

There are huge differences among countries as regards electromobility. Cross-operator interoperability is mainly a matter of market development and in most European countries there is a different state of maturity. In most of the countries, there are no governmental activities specifically dedicated to cross-operator interoperability and therefore the driving forces in this field are private eRoaming platform providers, such as Hsubject and Gireve, and electromobility service providers, like Plugsurfing.

Also, most of the European countries do not have a national wide interoperability scheme yet, but are based on multiple regional standards.

Despite this diversity, there are some interoperability examples in the field of electromobility. For example, a governmental initiative in Norway provides each newly registered EV owner with a RFID tag that can be registered into all Norwegian operators’ networks. Another example are the operational eRoaming platform providers, who ensure the interoperability between the charge point operators and electromobility service providers. Specifically,



eRoaming platforms are not bound by national borders and they play a key role especially in areas with large numbers of EVs.

As regards to technical interoperability in Europe, the collected data show that there are already few standards in place. One crucial aspect is the need for protocols regulating communication between different electromobility actors. Although there are proprietary protocols in use, a lot of charge points operators and central systems all over Europe use the Open Charge Point Protocol (OCPP), which is a unified standard eliminating all kinds of coordination problems.

The communication via eRoaming is described through eRoaming platform protocols. These protocols aim to connect market actors in the field of charging infrastructure. They are designed to enable boundless EV charging across charging infrastructure networks. Various eRoaming protocols have been developed by eRoaming platform providers such as OICP (Hubject), eMIP (Gireve), OCPI (Dutch initiative by NKL), OCHP (e-clearing.net) and OIOI (Plugsurfing). The Pan European Inter-Roaming framework to be developed within NeMo will cover this need, by proposing and establishing an interoperable eRoaming protocol.

In summary, the main barriers related to electromobility are:

- National and regional borders becoming technological borders as there is:
 - Lack of common payment methods
 - Lack of harmonized legislation
 - Lack of international collaboration on the installation of infrastructure
- There are no governmental activities specifically dedicated to cross-operator interoperability of electromobility services
- There are many regional practices, but few nationwide or Europe-wide interoperability schemes

3.2 Energy and Electricity domains

Important stakeholders active in both the energy and the electromobility market are the Distribution System Operators (DSO), the Meter Data Managers and the Meter Operators. The Energy Suppliers ensure the electricity production, balance the produced energy and provide wholesale contracts to EMPs and/or CPOs¹. In some countries DSOs are in the responsibility of being the owner and operator of charging infrastructure as an extension of their regular role. This is the case in Austria, Luxembourg, Slovenia (only on highways) and Ireland. Furthermore, in several Member States, municipalities can also oversee the deployment of public chargers².

¹ <http://cotevos.eu/wp-content/uploads/2016/03/Reference-Architecture-for-Interoperability-Testing-of-Electric-Vehicle-Charging.pdf>

² http://www.eurelectric.org/media/285584/ev_and_charging_infrastructure_final-2016-2310-0001-01-e.pdf



In comparison, all markets in Europe rely on the same market roles and actors. Depending on the regulatory scheme, in some countries (e.g. Italy and Luxembourg) the role of a DSO acting as a CPO is strongly limited. Also, the integration of energy market related roles is very strongly depending on the legal and regulatory framework of each country.

In summary, the main barriers to interoperable electromobility related to the energy and electricity domains are:

- There are several stakeholders which are involved in the energy and electromobility market and their activities are not coordinated:
 - Distribution System Operator (DSO)
 - Meter Data Manager (MDM)
 - Meter Operator (MO)
- In several countries, the DSOs are responsible for owning and operating the charging infrastructure
- All markets in Europe rely on the same actors, however the existing legal and regulatory frameworks relevant to electromobility are diverse.

3.3 ICT domain

Several regulatory requirements relevant to information and communication technologies are necessary for the deployment of the NeMo Hyper-Network. As concluded from the questionnaire survey, there are enormous differences between the current ICT standards in European countries. This topic is often not overviewed by a central authority, like the regulations for the energy and electricity market, and this could hinder the development of a cross European standard in agreement with the NeMo Hyper-Network.

Still, there is a digital agenda in most of the countries towards the expansion of the ICT infrastructure, which is deemed necessary to keep pace with technical progress. At least, in all European countries the requirements for the use of data in a digital Hyper-Network is established through European standards.

In summary, the main barriers for the interoperable electromobility related to ICT are:

- ICT standards in the several European countries are different
- ICT standards are not under the overview of central authorities
- There is a need for a digital agenda in all countries, for the expansion of the ICT infrastructure as necessary to keep pace with technical progress



4. Interoperability and regulatory requirements

Interoperable electromobility services, like eRoaming, need real-time exchange of information. Therefore, innovative solutions should be established as real time solutions. Today's existing protocols rely mostly on the same ID's, which makes a central solution less complicated.

The technological interoperability is continuously improving via interfaces, protocols or application of service architecture. Those often rely on nearly similar structures, which averts technological lock-in situations. However, in some cases, commercial barriers may arise. Even when technologically compatible, strategic considerations sometimes lead market players into limiting interoperability on purpose.

In general, cross-operator interoperability is an increasing problem in electromobility. Although, strict standardization could hinder the development of innovative, more efficient solutions and reduce the benefit to customers, interoperability requires harmonized standards and test procedures as well as compatible enabling technologies including communication controllers and messaging protocols, metering, plugs and interfaces. National authorities, regulation bodies, automakers, EVSE producers, operators, IT service providers, consumers, utilities etc. should be all involved in such activities.

4.1 High-level interoperability requirements

Based on the data collected via the questionnaire survey, the following high-level non-technical requirements for interoperability have been identified, classified in the following categories:

- **Requirement #1: Interoperability between the regulatory bodies**
- **Requirement #2: Interoperability between the regulatory and contractual frameworks**
- **Requirement #3: Interoperability between the Business Models of the involved players**
- **Requirement #4: Semantic Interoperability**

Below there is a list of recommendations for each of the four main areas of high-level interoperability requirements.

Requirement #1: Interoperability between the regulatory bodies

1. The close connection between research and development and the regulatory and legislative bodies and frameworks is necessary.
2. National standardization and regulation carried out by certain countries must not impede harmonization on an international level.
3. Efforts should aim towards developing international standards from the beginning. The same applies to interfaces between electric vehicles and the infrastructure.



4. A mutual understanding, increased Member States' coordination as well as timely and appropriate implementation of the AFI Directive 2014/94/EU Europe-wide will be crucial to ensure the creation of an EU Single Market for electromobility.
5. The deployment of normal power charging points should be facilitated through simplified regulations and approval procedures.
6. National authorities should cooperate to establish guidelines for a reduced electric charging tariff and standard regulatory oversight.

Requirement #2: Interoperability between the regulatory and contractual frameworks

1. Authorities should allow the co-existence of different standards to allow natural market selection to take place and thus encourage further technological innovation.
2. Authorities should support the establishment of charging points in areas with a high demand, for example along major European transport corridors, to enable seamless inter-city travel.
3. The allowance of non-standardized private charging solutions could avoid the need for premature revision of mandated standards as well as unnecessary investments for retrofitting of immediately obsolete stations.
4. EV charging services need to be affordable, reasonable and proportionately priced compared to the overall cost level in each Member State.
5. The legal framework must adopt electromobility issues besides the classical stationary market, since EV and EVSE are part of this strictly regulated market.
6. Legal harmonization of charging and plug systems across Europe should be regulated to enable cross border use.

Requirement #3: Interoperability between the Business Models of the involved players

1. There should be a harmonized way of how required data incurred by charging processes can be exchanged among actors. There should be a unified way of how metering data are collected.
2. Especially for international charging processes, it is necessary to harmonize the handling of meter data because the billing of the contractual partner towards the customer and the billing between the involved companies will be based on those data values.
3. There should exist a sustainable and standardized payment method, access options and services across Europe. The use patterns and charging behaviour in Member States are important determinants to decide which payment method is the most suitable.
4. Pay – as – you - go solutions should be made available for public charging infrastructure in addition to the subscription-based payment.
5. Adherence to existing specifications about web-based payment (relating to payment transactions, but not to meter readings/data communication) is advisable.



- Secure and transparent information regarding pricing, level of service, origin of electricity and the ability of consumers to easily choose/change between different charging services/ providers should be ensured.

Requirement #4: Semantic Interoperability

- Technical solutions must ensure the required interoperability for interface related standards (e.g. between vehicle and grid infrastructure).
- Common information models for electromobility entities and data structures should be agreed to, so that data exchange between actors is facilitated and interoperable services can be provided.
- There should be a unified way of identification and authentication like the Radio Frequency Identification (RFID) cards in Berlin.
- An interoperable electromobility service market in Europe requires a roaming system, which is established between charging point operators and which allows electricity roaming, i.e. allowing customers to freely choose a (renewable) energy supplier.
- The establishment of an EU-wide charging station database and mobile tools, which are capable of providing real time updates on EV parking and charging availability (e.g. Nobil in Norway), would, on the one hand, help to minimize average time spent on looking for parking and charging and at the other hand decrease excessive queuing at fast-charging stations.

As an example, the authentication methods and payment systems vary significantly among countries, as depicted below. For example, in Poland one can authenticate only with an RFID card while in France there are different possibilities like RFID-card, mobile app, SMS, bar code scans, mobile websites and partly also plug & charge. The NeMo Hyper-Network should incorporate all these authentication methods and payment systems in its models and developments.

Table 1: Authentication and Payment means in Europe

County	Authentication methods	Payment systems
Austria	RFID-card NFC Remote via app Remote via mobile website	Subscription-based (RFID, App, Plug&Charge) Direct access (most common via QR-Code Scan and PayPal payment)
France	RFID-card Mobile app SMS authentication bar code scan mobile websites Plug&Charge	Payment systems: RFID pass, mobile App Direct payment: Credit/payment Card, SMS Billing systems: Free of charge (shopping centres, cars dealers ...), Prepaid (via RFID badge), Monthly bills



County	Authentication methods	Payment systems
Germany	RFID-card Remote via app	Subscription-based (App, RFID, Plug & Charge) Direct (Mobile website, SMS, app, credit card (DC), Paypal)
Greece	RFID-card Mobile app	Pay-per-charge Charge for free
Italy	RFID-card (Mifare Classic/ Mifare Plus standard) Mobile app (credit card based) Coin-based	Subscription-based: RFID-card: monthly or bi-monthly billed Direct based: Credit card via mobile app: transaction billed
Spain	RFID-card Mobile app	Subscription based: RFID-card (prepaid/ per kWh), charge at home/monthly fee, strong regulations concerning Direct commitments (AGB-Acceptance)
Belgium	RFID-card	RFID-card, SMS payment
Bulgaria	RFID-card	Home charging (added to electricity bill), Free charging, Pre-paid RFID
Croatia	RFID-card (Certain number of CP, which do not require authentication)	Currently charging is free
Cyprus	RFID-card	Post payment
Czech Republic	RFID-card	Subscription based (pre-paid, monthly fee/ time-based) via RFID
Denmark	Local (RFID-card) Remote (Smartphone App, Call Centre)	Payment only for charging on E.ON network (call centre, RFID card, direct payment) Billing systems (monthly bill based on product and consumed kWh, Pre-paid RFID card (CLEVER), flat fee for Open Access via call centre)
Estonia	RFID-card, SMS, mobile app	3 monthly service packages, direct payment
Finland	SMS, Remote via App, RFID-card (incl. Key ring)	App (mobile payment), prepaid RFID-card, payment with credit/debit, card, SMS-payment
Hungary	Mobile app	Charge for free, pay per charge



County	Authentication methods	Payment systems
Iceland	Mobile app, RFID card	Charge for free, pay per charge
Ireland	RFID-card Future: PAYG via mobile shortcodes/ NFC	Direct debit subscription (Elvon/Realex)
Latvia	RFID-card, mobile app	None
Lithuania	Just testing	Free of charge
Luxembourg	RFID-card	RFID-card
Malta	RFID-card, mobile app	Post payment
The Netherlands	RFID-card, mobile app	CDR payment
Norway	RFID-card, mobile app	RFID (flat fee, pay per charge, pay per minute), Mobile app, PAYG (Prepaid RFID-cards in stores, Mobile app)
Poland	RFID-card	None
Portugal	RFID-card, Support to app based authentication	Pre-paid and post-paid schemes (via different payment platforms) Direct solutions are planned
Romania	None	Free of charge
Slovakia	Mainly RFID-card Future: mobile app based authentication will be dominant	Currently charging is free Exception: combined AC/DC charging stations on highway rest and service areas
Slovenia	RFID-card, SMS, QR-Code, mobile apps	Currently charging on Slovenian public charging stations is free Exception: combined AC/DC charging stations on highway rest and service areas
Sweden	RFID-card, Mobile app, SMS, Web pages, Payment terminals	RFID-card, Mobile app, Pay-As-You-Go (Prepaid RFID-cards in store, Payment terminals with credit card)



County	Authentication methods	Payment systems
Switzerland	RFID-card, Remote via mobile app, Remote via mobile website, SMS	RFID-card, Mobile app, SMS-access, Park&Charge, Data trans, direct payment (QR-Code/ NFC/ Website)
United Kingdom	RFID-card, Open Charge App, Smartphone App, Interactive Voice Recognition	RFID-card, mobile app, IVR PAYG

4.2 Regulatory requirements for the NeMo Hyper-Network

The definition of a contractual framework for the NeMo Hyper-Network is crucial for the achievement of the project goals. The regulatory interactions between the project stakeholders must be defined in a contractual and governmental framework. For example, a contractual framework between the eRoaming platforms is necessary to ensure the value proposition of the project. To realize interoperability between the eRoaming platforms in the productive environment, the regulatory requirements of the project stakeholders must be taken into consideration. After its implementation, the Hyper-Network will need a continuous development, which should be managed in a predefined governance structure. These are the reasons why the NeMo partners envisage the establishment in WP7 of the Business Alliance for Electromobility, which will take care of all the contractual arrangements needed to meet the dynamic market trends and regulation changes.

The regulatory framework for the NeMo Hyper-Network should cover the following aspects:

- Agree and establish contracts for Inter-Roaming between the connected platforms and the Hyper-Network considering all electromobility actors
- Produce a requirements whitepaper for a European wide contractual framework for the Hyper-Network including the eRoaming
- Define the governance structure of the Business Alliance for Electromobility, aligned with the requirements of the project stakeholders



5. Conclusions

This deliverable presents the results of the work conducted within Task 1.5 of the NeMo project. The aim was to analyse the current regulatory frameworks relevant to electromobility, identify barriers and extract interoperability and regulatory requirements for electromobility in general and specifically for the NeMo Hyper-Network.

The work was based on an analysis of the regulatory frameworks for electromobility on national as well as on international level. Using a structured form, data on the current regulatory frameworks from 31 European countries have been collected. The analysis of the regulatory landscape and experts' discussions revealed various barriers to interoperable electromobility services provision, barriers relevant to the electromobility domain per se, but also relevant to the energy and electricity domains and to the ICT domain. The analysis also revealed the variety of technical and non-technical initiatives undertaken in order to boost electromobility. Most of the initiatives are based on the country specific situation and are promoted by different agencies, ministries, etc. In most cases, those activities are performed in parallel, in an uncoordinated way, with a limited exchange of information between different stakeholders.

Interoperability between regulatory bodies, frameworks and contracting frameworks, as well as semantic interoperability (i.e. introducing common information models for electromobility services), and interoperability between business models of the involved partners, should be promoted. Therewith, high-level interoperability requirements have been extracted, grouped in the following groups:

- Requirement #1: Interoperability between the regulatory bodies
- Requirement #2: Interoperability between the regulatory and contractual frameworks
- Requirement #3: Interoperability between the Business Models of the involved players
- Requirement #4: Semantic Interoperability

Recommendations have been formulated for each of the above areas and regulatory requirements for the NeMo Hyper-Network have been outlined.

According to the Description of Work, this Task also included analyses of the communication protocols and standards. However, in parallel to WP1, an analysis of the standardisation efforts and communication protocol is ongoing under Task 2.4, resulting in a collection of standards and protocols, which needs to be considered. The suggestions for standardisation and regulatory activities per country, described in the annex of the present deliverable, will be used as further input in Task 2.4, to define the NeMo proposals for standardisation. In the future, this list will be analysed in detail, specifying the standardisation requirements per NeMo business scenario and per category of electromobility actors.



References

Green eMotion, <http://www.greenemotion-project.eu/>

ePID, eRoaming Plattformvernetzung in Deutschland

White Book “Business Opportunities for Interoperability Assessment of EV Integration” by COTEVOS

ERA-NET Cofund Electric Mobility Europe (2016-2021), http://electromobility-plus.eu/?page_id=1088



ANNEX: Status Quo as regards electromobility regulations in EU Member States and other countries

Table 2: Interoperability in Austria - Status Quo

Electromobility
<ul style="list-style-type: none">• Electric vehicles Authorities<ul style="list-style-type: none">– Austrian Federal Ministry for Transport, Innovation and Technology (The BMVIT provides general framework for infrastructure from rail to road, water and air to telecommunications and technology development in Austria.)– Austrian Federal Ministry of Science, Research and Economics (The BMWFV provides the framework for universities, research institutes and companies and represents the interests of Austria as a business location on an international level.)– Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (The BMLFUW is responsible for key quality-of-life issues and for questions which are essential in creating a liveable future for our children. Make use of the information on this page and learn more about the Ministry's wide range of competencies.)– Federal Environment Agency (an organization of the Ministry of Environment, supports the e-mobility market with scientific studies)Associations and Companies<ul style="list-style-type: none">– Austrian Mobile Power (AMP develops the implementation of the electromobility)– Austrian automobile, motorbike and touring club (ÖAMTC supports and represents mobile people)– National Initiative e-Mobility Austria (BIEM is an independent electromobility cluster for companies and experts)– Austria Tech (an agency of the Ministry of Transport, supports the development of regulatory frameworks and supports the Transport Ministry in implementing the Directive 2014/94)Regulations<ul style="list-style-type: none">– National strategic framework (national implementation EU-RL 2014/94 Alternative Fuels Directive)– Package of measures by BMVIT (Purchase incentives for EVs, marking for zero emission vehicles) <p>1. EV-specific infrastructure</p> <p>Authorities</p>



- Austrian Federal Ministry for Transport, Innovation and Technology (The BMVIT provides general framework for infrastructure from rail to road, water and air to telecommunications and technology development in Austria.)
- Austrian Federal Ministry of Science, Research and Economics (The BMWFV provides the framework for universities, research institutes and companies and represents the interests of Austria as a business location on an international level.)
- Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (The BMLFUW is responsible for key quality-of-life issues and for questions which are essential in creating a liveable future for our children. Make use of the information on this page and learn more about the Ministry's wide range of competencies.)

Associations and Companies

- Oesterreichs Energie (formerly the Association of Austrian Electricity Companies VEÖ)
- Austrian Electrotechnical Association OVE (The Association promotes the reputation of the entire line of business, the development of the profession as well as the progress of technology and science and deals with current challenges of electrical engineering and information technology.)
- E-Control (the regulator of the Austrian energy market, supports the Ministry of Science, Research and Economy to discuss the implementation of a national wide charge point register)
- Federal association E-Mobility Austria (BEÖ is the Austrian Federal E-Mobility Association which promotes a covering charging infrastructure)

Regulations

- Energy related laws (system utilization decree, network service regulation, power labelling regulation)
- Diverse building regulations (Lower Austria, Upper Austria, Styria)
- Package of measures by BMVIT
- Main aspects:
 - Expansion plan, publicly accessible infrastructure, incentives for acquisition of privately used infrastructure, network provisioning, reduction of grid connection costs, electricity labelling, green electricity, national register of charge points, mandatory interoperability for public charge points, investment campaign, electromobility management for fleets of communities

- Use of general infrastructure by EVs

Authorities

- Austrian Federal Ministry for Transport, Innovation and Technology (The BMVIT provides general framework for infrastructure from rail to road, water and air to telecommunications and technology development in Austria.)
- Magistrale department (Deals with the business of Vienna, i.e. parking management)

Associations and Companies



- ASFiNAG - Autobahnen- und Schnellstraßen-Finanzierungs-Aktiengesellschaft (national highway and expressway operator)

Regulations

- Regulations about parking management and use of roads (i.e. new hint for waiting and parking restrictions „Except EVs for loading process“)

Energy & Electricity

Authorities

- Austrian Federal Ministry for Transport, Innovation and Technology (The BMVIT provides general framework for infrastructure from rail to road, water and air to telecommunications and technology development in Austria.)
- Austrian Federal Ministry of Science, Research and Economics (The BMWFW provides the framework for universities, research institutes and companies and represents the interests of Austria as a business location on an international level.)
- Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (The BMLFUW is responsible for key quality-of-life issues and for questions which are essential in creating a liveable future for our children. Make use of the information on this page and learn more about the Ministry's wide range of competencies.)
- Federal Environment Agency (an organization of the Ministry of Environment, supports the e-mobility market with scientific studies)

Associations and Companies

- Austria Tech (an agency of the Ministry of Transport, supports the development of regulatory frameworks and supports the Transport Ministry in implementing the Directive 2014/94)
- Oesterreichs Energie (formerly the Association of Austrian Electricity Companies VEÖ)
- Austria Standards
- Austrian Electrotechnical Association OVE (The Association promotes the reputation of the entire line of business, the development of the profession as well as the progress of technology and science and deals with current challenges of electrical engineering and information technology.)
- Austrian Economic Chambers WKO (As the voice of Austrian business, we are committed to forward-looking policies which benefit the economy e.g. tax relief, cutting red tape, subsidies.)
- Austrian Chamber of Labour (Tasks are Fundamental research for the benefit of workers and consumers, Participation in and control of legislation, Services)
- Federation of Austrian Industries (As a lobby, IV aims to strengthen industry and secure employment. It represents the concerns of its members both in Austria and on the wider European stage.)
- E-Control
- Austrian Energy Agency (AEA does scientific investigation, preparation, implementation and support of measures which lead to an economically use of energy)



Regulations

- Electricity Industry and Organization Act EIWOG (Federal law governing the organization of the electricity industry)
 - System charges regulation (This Regulation determines the procedure for cost rollups and other requirements)
 - Electricity disclosure regulation (This Regulation describes the electricity disclosure for electricity traders)
 - Network service regulation power (This Regulation determines standards for distribution system operator regarding security and other points)
- Main aspects:
 - Grid usage and connection fees, definition of energy market roles clearing/ settlement/ invoicing, guarantee of origin for electricity from renewable sources, B2C market regulation (T&C), physical and technical requirements related to the electricity grid

ICT

Authorities

- Austrian Federal Ministry for Transport, Innovation and Technology (The BMVIT provides general framework for infrastructure from rail to road, water and air to telecommunications and technology development in Austria.)
- Austrian Data Protection Authority (The data protection authority is the Austrian supervisory authority for data protection, the equivalent of a national data protection commissioner in other countries.)

Associations and Companies

- Austrian Mobile Power

Regulations

- Electricity Industry and Organization Act EIWOG (Federal law governing the organization of the electricity industry)
 - Federal Act concerning the Protection of Personal Data DSG 2000 (DSG is about protection of personal data in Austria)
 - Implementation plan: Electromobility in and from Austria
- Main aspects:
 - Data security, national charge point register, ID assignment, authentication, barrier-free access to public charging infrastructure

Strategy, Roadmaps, Initiatives

- Implementation plan: Electromobility in and from Austria (“Everyone is talking of electromobility. Austria is pushing it. That is the declared objective of our common initiative for the implementation plan for electromobility in and from Austria.”)
- Package of measures by BMVIT (Purchase incentives for EVs, marking for zero emission vehicles)
- Funding programs of BMVIT and BMLFUW
- Position paper of Austrian Mobile Power (AMP develops the implementation of the electromobility)



- Oesterreichs Energie (formerly the Association of Austrian Electricity Companies VEÖ)
- Working group electromobility
- Austria Tech (an agency of the Ministry of Transport, supports the development of regulatory frameworks and supports the Transport Ministry in implementing the Directive 2014/94)
- Evaluation reports for nation implementation

Table 3: Interoperability in France - Status Quo

Electromobility

Authorities

- Ministry of Economy & Industry (The Ministry of the Economy, Industry and the Digital Sector is responsible for industrial research and plays a specific role in relation to private sector research.)
- Ministry of Energy and Ecology (Organization on the territory and public establishments, official bulletin, public contracts, law of finance, central directorates.)
- Ministry of the Interior and Security (The Ministry of the Interior and Security is one of the most important French government cabinet positions with several responsibilities.)

Associations and Companies

- GIREVE (National roaming platform)
- L'Association Française pour l'Itinérance de la Recharge Électrique des Véhicules AFIREV (French Association for roaming of EV charging services)
- Federation Nationale des Collectivités Concédantes et Régies (FNCCR)
- National union for the development of electromobility (AVERE)

Regulations

- Law on energy transition for green growth 2015-08-17 (Energy Transition Law)
 - Are designed to give France the means to diversify its energy mix and enhance its actions contributing to tackling climate change. It covers a large scope of economic activities and brings in binding energy targets for transport, housing sector and renewable energy. In its 215 articles, the law sets the following ambitious national targets.
 - Decree for IRVE deployment 2017-01-12 (Application of EU directive 2014/94 "AFI", definition of publicly accessible infrastructure and prescription for their access (interoperability, open data, smart charging), prescription for infrastructure equipment in professional and residential buildings, security conditions.)
 - Decree for IRVE in new buildings 2016-07-13 (Application of EU directive 2014/94 "AFI", definition of publicly accessible infrastructure and prescription for their access (interoperability, open data, smart charging), prescription for infrastructure equipment in professional and residential buildings, security conditions.)
 - Decree for IRVE in buildings 2011-07-25 (Application of EU directive 2014/94 "AFI", definition of publicly accessible infrastructure and prescription for their access



(interoperability, open data, smart charging), prescription for infrastructure equipment in professional and residential buildings, security conditions.)

- Main aspects:
 - Application of EU directive 2014/94 "AFI", definition of publicly accessible infrastructure and prescription for their access (interoperability, open data, smart charging), prescription for infrastructure equipment in professional and residential buildings, security conditions.

Energy & Electricity

Authorities

- Ministry of Energy and Ecology (Organization on the territory and public establishments, official bulletin, public contracts, law of finance, central directorates.)

Associations and Companies

- Commission for Regulation of Energy (CRE contributes to the smooth operation of energy markets for the benefit of the consumer)

Regulations

- Energy code (Especially Art. L 331-1 on electricity suppliers states that charging service is not submitted to electricity supply code, being a service.)

ICT

Authorities

- Electronic communications and postal regulatory authority (ARCEP)
- Committee for industry, energy and technologies (CGIET)

Associations and Companies

- National Commission for IT and Liberty (CNILs missions are about Informing & Educating, Protecting the Rights of Citizens, Regulating & Advising and more)

Regulations

- Laws for IT, files and liberty 1978-01-06 & 2004-08-06 (application of EU directive 95/46/CE) (Main aspect is the security and confidentiality of personal data in IT systems.)

Strategy, Roadmaps, Initiatives

- National plan for EV development 2009-10-01 (Contains a national 14-point plan designed to accelerate the development and subsequent commercialization of electric vehicles and plug-in hybrids in France.)
- Law on energy transition for green growth 2015-08-17 (Law is designed to give France the means to diversify its energy mix and enhance its actions contributing to tackling climate change. It covers a large scope of economic activities and brings in binding energy targets for transport, housing sector and renewable energy. In its 215 articles, the law sets the following ambitious national targets.)
- Decree for IRVE deployment 2017-01-12 (Application of EU directive 2014/94 "AFI", definition of publicly accessible infrastructure and prescription for their access



(interoperability, open data, smart charging), prescription for infrastructure equipment in professional and residential buildings, security conditions.)

Table 4: Interoperability in Germany - Status Quo

Electromobility

Authorities

- Federal Government (The Federal Government is the chief executive body of the Federal Republic of Germany. It consists of the Chancellor and the cabinet ministers.)
 - Federal Ministry for Economic Affairs and Energy (BMWi) (The central task of the Ministry for Economic Affairs and Energy is to reinvigorate the social market economy, stay innovative in the long term and strengthen the social fabric in Germany.)
 - Federal Ministry of Finance (BMF) (The BMF adopts laws like tax incentives for electromobility.)
 - Federal Ministry of Education and Research (BMBF) (Renewable energy, sustainable mobility, demographic change: the BMBF is supporting sustainable development in the economy and society with a framework programme and a number of funding measures.)
 - Federal Ministry of Transport and Digital Infrastructure (BMVI) (The Federal Ministry of Transport and Digital Infrastructure provides financial assistance for applied research and development of alternative drivetrains covering a wide range of technologies. Therefore, funding is provided for battery-only electric vehicles, plug-in hybrids as well as for hydrogen-powered fuel cells across all modes of transport and segments, including not only road vehicles but rail, shipping and aviation, too.)
 - Federal Environment Ministry (BMUB) (BMUB is working to strengthen support for electric mobility and to develop a number of model projects and research projects, among other activities.)
 - Federal Office for Economic Affairs and Export Control (The Federal Office for Economic Affairs and Export Control is part of BMWi entrusted with important administrative tasks of the federal government in the sectors Foreign Trade, Promotion of Economic Development and of Small and Medium-sized Enterprises, Energy and Auditor's Oversight.)
 - The Federal Ministry of Justice and Consumer Protection BMJV (The Federal Ministry of Justice and Consumer Protection is primarily a ministry of legislation, also advising the other Federal Ministries in the preparation of legislative proposals.)

Associations and Companies

- BerlinBrandenburg Energy Network e.V. (Network and the advocacy of the renewable energy industry in Berlin-Brandenburg)
- bsm (The federal association of solar mobility has been working for the use of solar energy on land)



- Bundesverband der Energie- und Wasserwirtschaft e.V. (BDEW is the central contact for all questions relating to natural gas, electricity, and sewage)
- Bundesverband Deutsche Startups e.V. (Promote innovative entrepreneurship and support the start-up mentality in Germany)
- Bundesverband eMobilität e.V. (Association to switch the mobility in Germany with the use of renewable energies to electric mobility)
- German Partnership for Sustainable Mobility (GPSM serving as a guide for sustainable mobility and green logistics solution from Germany)
- Nationale Plattform Elektromobilität NPE (Advisory panel to the Government to monitor and analyse the developments in the field of e-Mobility)
- Verkehr Mobilität Zukunft (VMZ's core businesses are urban mobility and traffic management)

Regulations

- Elektromobilitätsgesetz – EmoG (Law on the use of electrically operated vehicles)
- Ladesäulenverordnung LSV (Regulation by Federal Ministry for Economic Affairs and Energy, about requirements for the expansion of charging station)
- MessEG (measurement and calibration law)
- VDI 2166 (planning of electrical installations in buildings)

Energy & Electricity

Authorities

- Federal Government (The Federal Government is the chief executive body of the Federal Republic of Germany. It consists of the Chancellor and the cabinet ministers.)
- Federal Ministry for Economic Affairs and Energy (BMWi) (The central task of the Ministry for Economic Affairs and Energy is to reinvigorate the social market economy, stay innovative in the long term and strengthen the social fabric in Germany.)
 - Federal Network Agency³ (The Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway is a separate higher federal authority within the scope of business of the Federal Ministry of Economics and Energy. The task of regulating Germany's electricity and gas markets has primarily been assigned to the Agency.)
- Federal Ministry of Finance (BMF) (The BMF adopts laws like tax incentives for electromobility.)
- Federal Ministry of Education and Research (BMBF) (Renewable energy, sustainable mobility, demographic change: the BMBF is supporting sustainable development in the economy and society with a framework programme and a number of funding measures.)
- Federal Ministry of Transport and Digital Infrastructure (BMVI) (The Federal Ministry of Transport and Digital Infrastructure provides financial assistance for applied research and development of alternative drivetrains covering a wide range of technologies. Therefore, funding is provided for battery-only electric vehicles, plug-in hybrids as well as for

³ In German: Bundesnetzagentur
NeMo D1.3 Interoperability and
Regulatory Requirements



hydrogen-powered fuel cells across all modes of transport and segments, including not only road vehicles but rail, shipping and aviation, too.)

- Federal Environment Ministry (BMUB) (BMUB is working to strengthen support for electric mobility and to develop a number of model projects and research projects, among other activities.)
- Federal Office for Economic Affairs and Export Control (The Federal Office for Economic Affairs and Export Control is part of BMWi entrusted with important administrative tasks of the federal government in the sectors Foreign Trade, Promotion of Economic Development and of Small and Medium-sized Enterprises, Energy and Auditor’s Oversight.)
- The Federal Ministry of Justice and Consumer Protection BMJV (The Federal Ministry of Justice and Consumer Protection is primarily a ministry of legislation, also advising the other Federal Ministries in the preparation of legislative proposals.)

Associations and Companies

- German Renewable Energy Federation BEE (BEE’s long-term goal is the transition to a system based on 100 per cent renewable energy. The tasks include the improvement of basic legal conditions for renewable energy, for example prioritizing renewable energy over other energy sources.)

Regulations

- Energy Industry Act EIA (A framework policy to enhance competition, security of supply and sustainable energy production. Germany’s Energy Industry Act requires electricity labelling according to type of energy source.)
- Law on installation and operation of smart metering systems⁴
- Renewable Energy Sources Act⁵ (The law aims at ensuring a safe, cost-effective, consumer-friendly, efficient and environmentally-friendly supply of power and gas as well as efficient and unrestricted competition and the safeguarding of an effective and reliable operation of power grids.)
- Electricity Tax Act⁶ (Law on taxation of electricity.)

ICT

Authorities

- Federal Government (The Federal Government is the chief executive body of the Federal Republic of Germany. It consists of the Chancellor and the cabinet ministers.)
- Federal Ministry for Economic Affairs and Energy (BMWi) (The central task of the Ministry for Economic Affairs and Energy is to reinvigorate the social market economy, stay innovative in the long term and strengthen the social fabric in Germany.)

⁴ In German: Gesetz über den Messstellenbetrieb und die Datenkommunikation in intelligenten Energienetzen

⁵ In German: Erneuerbare-Energien-Gesetz – EEG

⁶ In German: StromStG



- Federal Ministry of Finance (BMF) (The BMF adopts laws like tax incentives for electromobility.)
- Federal Ministry of Education and Research (BMBF) (Renewable energy, sustainable mobility, demographic change: the BMBF is supporting sustainable development in the economy and society with a framework programme and a number of funding measures.)
- Federal Ministry of Transport and Digital Infrastructure (BMVI) (The Federal Ministry of Transport and Digital Infrastructure provides financial assistance for applied research and development of alternative drivetrains covering a wide range of technologies. Therefore, funding is provided for battery-only electric vehicles, plug-in hybrids as well as for hydrogen-powered fuel cells across all modes of transport and segments, including not only road vehicles but rail, shipping and aviation, too.)
- Federal Environment Ministry (BMUB) (BMUB is working to strengthen support for electric mobility and to develop a number of model projects and research projects, among other activities.)
- Federal Office for Economic Affairs and Export Control (The Federal Office for Economic Affairs and Export Control is part of BMWi entrusted with important administrative tasks of the federal government in the sectors Foreign Trade, Promotion of Economic Development and of Small and Medium-sized Enterprises, Energy and Auditor's Oversight.)
- The Federal Ministry of Justice and Consumer Protection BMJV (The Federal Ministry of Justice and Consumer Protection is primarily a ministry of legislation, also advising the other Federal Ministries in the preparation of legislative proposals.)
- The German Federal Office for Information Security (BSI) as the national cyber security authority shapes information security in digitisation through prevention, detection and reaction for government, business and society.

Regulations

- DIN SPEC 91286:2011-11 (German EVSE ID standard)
- DIN SPEC 70121:2014-12 (Digital communication between a DC charging station and an electric vehicle for controlling the DC charge in the combined charging system)

Strategy, Roadmaps, Initiatives

- National Electromobility Development Plan (One million electric vehicles on the road by 2020)



Table 5: Interoperability in Greece - Status Quo

Electromobility

Electric Vehicles

Authorities

- Ministry of Infrastructure, Transport and Networks (The mission of the Ministry of Infrastructure, Transport and Networks is: - to plan and implement national policy and create the appropriate institutional framework at European and international level for the development of top quality transport, mass-transit, telecom and postal services under conditions of healthy competition.)

Regulations

- Law 2052 – FEK A94/05-06-1992 (Refers to exemption of taxes and duties for electric vehicles.)
- Law 2459 – FEK A17/18-02-1997(Refers to exemption of taxes and duties for electric vehicles.)
- Law 2682 – FEK A16/08-02-1999 (According to Law (2682/99), a differentiation of the registration tax on vehicles (cars, trucks, motorcycles) according to their motor horsepower and their anti-pollution specifications is being provided. Electric cars or hybrid cars with motors satisfying the specifications of the EC Directive 94/12 or more recent directives are exempted from the tax.)
- Law 2960 – FEK A265/22-11-2001 (Tax on the registration of imported second-hand vehicles)
- Law 4211 – FEK 256/28-11-2013 (EU entities without a permanent establishment or VAT registration in Greece, are now allowed to register for VAT in Greece and pay any VAT due without any penalties.)
- Main aspect:
- All laws refer to exemption of taxes and duties for electric vehicles.

EV-specific infrastructure

Associations and Companies

- Hellenic Electricity Distribution Network Operator S.A. (The company tasks include the operation, maintenance and development of the power distribution network in Greece, as well as the assurance of a transparent and impartial access of consumers and of all network users in general.)

Regulations

- Law 4233 – FEK 22/29-01-2014 (Allows the installation of charging stations for passenger cars and two-wheelers in gasoline stations, in repair stores, in technical inspection centres and in public parking places.)
- Use of general infrastructure by EVs



Authorities

- Ministry of Infrastructure, Transport and Networks (The mission of the Ministry of Infrastructure, Transport and Networks is: - to plan and implement national policy and create the appropriate institutional framework at European and international level for the development of top quality transport, mass-transit, telecom and postal services under conditions of healthy competition.)

Energy & Electricity

Associations and Companies

- Hellenic Electricity Distribution Network Operator S.A. (The company tasks include the operation, maintenance and development of the power distribution network in Greece, as well as the assurance of a transparent and impartial access of consumers and of all network users in general.)

Regulation

- Law 4277 – Fek 156/01-08-2014 (Allows the selling or provision of electric energy from non energy providers. This facilitates the installation and operation of charging stations by private persons, private companies and municipal authorities.)

ICT

Authorities

- Ministry of Infrastructure, Transport and Networks (The mission of the Ministry of Infrastructure, Transport and Networks is: - to plan and implement national policy and create the appropriate institutional framework at European and international level for the development of top quality transport, mass-transit, telecom and postal services under conditions of healthy competition.)

Regulation

- Law 2472/1997 (The object of this law is to establish the terms and conditions under which the processing of personal data is to be carried out so as to protect the fundamental rights and freedoms of natural persons and in particular their right to privacy.)
- Law 3471/2006 (Protection of personal data and privacy in the electronic communications sector and amendment of law.)
- Law 3917/2011 (Retention of data generated or processed in connection with the provision of publicly available electronic communications services or of public communications networks, use of surveillance systems with the obtaining or recording of sound or image at public areas and relative provisions.)
- Various Regulations and Decisions by the Data Protection Authority and the Hellenic Authority for Communication Security and Privacy
- The Laws and Regulations provide for the harmonisation of the European regulatory framework (particularly the Directives 94/46/EC, 2002/58/EC, 2009/136/EC, 2006/24/EC) to the National one. In certain cases, particularly the Decisions of the two competent Authorities, particularise specific points, according to the underlying operational needs of



the Hellenic environment. There are no specific issues referring to electromobility. As anticipated by the European Law, the Hellenic Laws require the protection of mobility data, considering them as a sensitive category of data. As regards the recently adopted European Regulations about electronic identification and authentication (eIDAS Regulations), there is no formal decision as regards which Authorities will have the prime e-identification role; however, it is anticipated that the Tax and Social Security Authorities will be devised with this responsibility.

Strategy, Roadmaps, Initiatives

- National Strategy for ITS issued by the Ministry of Infrastructure, Transport and Networks (The National Strategy focuses on the development of a modern network of combined transportations with undisturbed flow and real time information for the whole country. The next step according to the National Strategy is the finalization of the National Architecture of ITS. The public consultation on the National Architecture has just been finalized and it is expected to be published in 2017.)

Table 6: Interoperability in Italy - Status Quo

Electromobility

Electric vehicles

Authorities

- The Ministry of Infrastructures and Transport⁷

Regulations

- Law 4233 – FEK 22/29-01-2014 (Allows the installation of charging stations for passenger cars and two-wheelers in gasoline stations, in repair stores, in technical inspection centres and in public parking places)
- Law n. 2844 (Measures to favour the development of mobility by using vehicles without CO2 emissions)
- Organization rules⁸ (The law describes the division of responsibilities within the Ministry of Infrastructure and Transport, splitting competences between departments.)

Main Aspects:

- Administrative discipline and technique of vehicles and drivers, national approval of EC and UNECE vehicles, devices and separate technical units, national and international harmonized sector regulations with EU legislation
- EV-specific infrastructure

Regulations

- Law n. 3553 (Measure for the realization of infrastructure aimed at assisting the broad introduction of EVs)

⁷ Ministero delle Infrastrutture e dei Trasporti

⁸ Regolamento di organizzazione del Ministero delle infrastrutture e dei trasporti - Decreto del Presidente del Consiglio dei Ministri 11 febbraio 2014, n. 72.



- The National Plan⁹
- The National Plan focuses on the realization of infrastructure networks for charging of EVs, and on recovering of the structures aimed at the development of the network of Charge Points. The National Plan defines the guidelines to ensure development of CPs in the national territory, on the basis of objective criteria which take into account the actual needs present in different territories, assessed on the basis of the profiles competitors of private vehicular traffic congestion, air pollution and the criticality of the development of urban and suburban roads and the highway. Section 17-f shows that in order to guarantee, throughout the national territory the uniform minimum level of accessibility of the charging of EVs, the national infrastructure plan should be drawn up for charging powered vehicles electricity, it's necessary that will provide an:
 - administrative discipline and technique of vehicles and drivers
 - national approval of EC and UNECE vehicles, devices and separate technical units
 - national and international harmonized sector regulations with EU legislation
 - the vehicle charging service
 - the introduction of the charging service management procedures
 - the introduction of subsidies
 - the realization of integrated programs for promoting technological adaptation of existing buildings
 - the promotion of technological research
- The Italian Regulatory Authority for Electricity Gas and Water will be competent on infrastructure networks for charging EVs.¹⁰ (The decree adopts the Directive 2014/94/EU on the deployment of alternative fuels infrastructure.)
- The main provisions are
 - An appropriate number (taking into consideration, inter alia, the forecast on electric vehicles registered) of recharging points accessible to the public are put in place by 31 December 2020
 - Deployment of recharging infrastructure in urban/suburban agglomerations and other densely populated area is prioritized
 - Harmonization of technical specifications for normal power recharging points from 18 November 2017
 - Need for shore-side electricity supply for inland waterway vessels and seagoing ships in maritime and inland ports
 - Use of intelligent metering systems if technically feasible and economically reasonable
 - Operators of recharging points accessible to the public are free to purchase electricity from any Union electricity supplier, subject to the supplier's agreement

⁹ Piano nazionale infrastrutturale per la ricarica dei veicoli alimentati ad energia elettrica - Legge del 7 agosto 2012, n. 134

¹⁰ DECRETO LEGISLATIVO 16 dicembre 2016, n. 257 Disciplina di attuazione della direttiva 2014/94/UE del Parlamento europeo e del Consiglio, del 22 ottobre 2014, sulla realizzazione di una infrastruttura per i combustibili alternativi.



- Main aspects for EV-specific infrastructure:
 - Targets for the deployment of the recharging infrastructure, prioritization of areas (urban, harbours, ...)
- Use of general infrastructure by EVs:
 - Authorities**
 - The Italian Regulatory Authority for Electricity Gas and Water¹¹
 - Regulations**
 - Law n. 3553
 - The National Plan¹²
 - Main Aspects:
 - The vehicle charging service
 - The introduction of the charging service management procedures
 - The introduction of subsidies
 - The realization of integrated programs for promoting technological adaptation of existing buildings
 - The promotion of technological research

Energy & Electricity

Authorities

- The Italian Regulatory Authority for Electricity Gas and Water¹³

Associations and Companies

- CEI - Italian Electrotechnical Committee - (Italian Electrotechnical standardization body)

Regulations

- The National Plan¹⁴ (section 17 and following)
- Delibera AEEGSI¹⁵ (Pilot projects for e-mobility)
- Electricity grid tariffs (2017)¹⁶
- Main aspects:
 - The vehicle charging service
 - The introduction of the charging service management procedures

¹¹ Autorità per l'Energia Elettrica il Gas e il Sistema Idrico

¹² Piano nazionale infrastrutturale per la ricarica dei veicoli alimentati ad energia elettrica - Legge del 7 agosto 2012, n. 134

¹³ Autorità per l'Energia Elettrica il Gas e il Sistema Idrico

¹⁴ Piano nazionale infrastrutturale per la ricarica dei veicoli alimentati ad energia elettrica - Legge del 7 agosto 2012, n. 134

¹⁵ Autorità per l'Energia Elettrica il Gas e il Sistema Idrico - ARG/elt 242/10 Disposizioni speciali per l'erogazione dei servizi di trasmissione, distribuzione e misura e del servizio di dispacciamento ai fini della sperimentazione dei sistemi in bassa tensione di ricarica pubblica dei veicoli elettrici.

¹⁶ Delibera AEEGSI 782/2016/R/eel (22 dicembre 2016)



- The introduction of subsidies
- The realization of integrated programs for promoting technological adaptation of existing buildings
- Electricity tariffs for EV charging
- Spérimentation of vehicle to grid functionalities

ICT

Authorities

- Ministry of Economic Development¹⁷
- Italian Data Protection Authority¹⁸

Associations and Companies

- ISCOM (Institution for ICT)¹⁹

Regulations

None directly related to ICT in e-mobility, but in general on data protection and ICT sector.

- About GRID Communication, read Piano nazionale infrastrutturale per la ricarica dei veicoli alimentati ad energia elettrica - Legge del 7 agosto 2012, n. 134 (section 6.2) Standard IEC 61851-1, by PWM (Pulse width Modulation) ISO / IEC 15118 (BS ISO/IEC 15118-1 Road vehicles - Vehicle to grid communication interface), protocol IEEE 1901 Profile Green PHY on CPLT/PE

Strategy, Roadmaps, Initiatives

- The National Plan²⁰
- Directive 2014/94/EU on the deployment of alternative fuels infrastructure²¹

Missing Standards

- Introduction of the charging service management procedures

¹⁷ Ministro dello Sviluppo Economico

¹⁸ Garante per la protezione dei dati personali -

¹⁹ Istituto Superiore Comunicazioni

²⁰ Piano nazionale infrastrutturale per la ricarica dei veicoli alimentati ad energia elettrica - Legge del 7 agosto 2012, n. 134

²¹ Decreto Legislativo 16 dicembre 2016, n. 257



Table 7: Interoperability in Spain - Status Quo

Electromobility

Authorities

- Spanish government²² (There are three main institutions known as the Cortes Generales, which are legally independent: The Congress of Deputies, the assembly of senators, the judicial branch composed of a hierarchy of law courts)
 - Spanish Ministry of Economy, Industry and Competitiveness (The objective of the Spanish Ministry of Economy, Industry and Competitiveness is to proposal and implementation of the Government's policy on economic issues, and to push for reforms aimed at improving competitiveness, scientific research, technological development and innovation in all sectors. It is also in charge of trade policy and support to companies, as well as other capacities and duties conferred by law.)

Associations and Companies

- AEDIVE²³ (AEDIVE, the Spanish Business Association for the Boosting and Development of the Electric Vehicle Market is a non-profit Innovative Association for the Boosting and Development of the electric vehicle market, independent from the Government and with representatives from all points in the EV value chain which makes the Association the valid intermediary for Public Authorities and the market as a whole regarding this issue.)
- Green Cars Initiative (The European Green Cars Initiative is one of the three public private partnerships (PPP) included in the Economic Recovery Plan, which were announced by the European Commission and endorsed by the Member States at the end of 2008. It aims at supporting smart investments in research in the automotive sector, which is one of the main pillars of the European economy.)
- Move2Future (Spanish technology platform for the automotive industry)
- Alianza INERCIA (Alianza INERCIA is an alliance of industry associations representing different sectors but with common goals in the drive for Smart Cities.)
- Centre for the Development of Industrial Technology (The Centre for the Development of Industrial Technology (CDTI) is a Public Business Entity, answering to the Ministry of Economy and Competitiveness, which fosters the technological development and innovation of Spanish companies. It is the entity that channels the funding and support applications for national and international R&D&i projects of Spanish companies.)

Regulations

- Efficient Vehicle Incentives Programme PIVE²⁴ (The PIVE aims to support the continued modernisation of the nation's motor vehicle stock.)

Energy & Electricity

²² Gobierno de españa

²³ Asociación Empresarial para el Desarrollo e Impulso del Vehículo Eléctrico

²⁴ Programa De Incentivos Al Vehículo Eficiente



Authorities

- Spanish government²⁵ (There are three main institutions known as the Cortes Generales, which are legally independent: The Congress of Deputies, the assembly of senators, the judicial branch composed of a hierarchy of law courts)
 - Spanish Ministry of Energy, Tourism and the Digital Agenda²⁶ (The Ministry of Energy, Tourism and Digital Agenda is responsible for the proposal and execution of the Government's policy on energy, tourism, telecommunications and the information society, as well as the development of the Digital Agenda.)

Associations and Companies

- The Institute for the Diversification and Saving of Energy IDAE (The IDAE is an agency attached to the Ministry of Energy, Tourism and Digital Agenda, through the Secretary of State for Energy, on which it depends organically.)

Regulations

- Electricity sector regulation - Electricity Law (Law 24/2013, of the electricity sector was approved on 26 December 2013, and entries into force on 28 December 2013, replacing the Law 54/1997. It sets up the principle of financial and economic sustainability: the system revenues have to cover all the system costs. Regarding renewable energies, it supersedes the existing special regime for electricity producers, maintaining the fundamental principle of previous supporting schemes: a reasonable return.

ICT

Authorities

- Spanish Data Protection Agency (The Spanish Agency of data protection is responsible for ensuring compliance with legislation on data protection and monitoring their implementation, especially in regard to the rights of information, access, rectification, opposition and cancellation of data.)

Regulations

- Directive 95/46/EC (**The Directive 95/46/EC** is about data protection in Spain.)
- Law on the Protection of Personal Data (The Organic Law 15/1999 of 13 December 1999 on the Protection of Personal Data brought Spanish law in line with the EU Data Protection Directive (95/46/EC). This law regulates the processing of personal data in the public and private sectors. It grants citizens with the right to access and correct their personal information in the records held by public and private bodies. Personal information may only be used or disclosed to a third party with the consent of the individual, and only for the purposes that it was collected. Additional protections are provided for sensitive data. The Law is enforced by the Spanish Data Protection Agency.)

²⁵ Gobierno de España

²⁶ Ministerio de Energía, Turismo y Agenda Digital



Strategy, Roadmaps, Initiatives

- Sustainable Economy Law (The Sustainable Economy Act is one of the cornerstones of the Spanish Governments strategy to define a sustainable growth model for the Spanish economy. The main axis of the Spanish governments energy policy are: guaranteeing security of supply, economic efficiency and environmental sustainability. As such, the Act will stimulate R&D and innovation by increasing tax deduction for innovative activities. Specific measures will benefit companies in renewable energy, and other climate change mitigation sectors. The Sustainable Economy Act sets national targets for 2020 in accordance with European objectives in renewable energy: a 20% share of renewable sources in gross final energy consumption, including at least 10% of renewable sources in the transport sector.)
- Renewable Energy Plan REP 2011 – 2020 (The REP 2011-2020 sought to incorporate the primary elements from the NREAP 2011-2020 dated 30th June 2010, plus additional analysis, among which stands out a detailed sectorial analysis covering, among other aspects, a technological development outlook and costs forecast.)

Table 8: Interoperability in Belgium - Status Quo

Electromobility

Authorities

- Electric Vehicles
 - At national level the following three Federal Public Services (FPS, equivalent to ministries): FPS Mobility and Transport, FPS Economy, SMEs, Self-Employed and Energy and FPS Finance. These bodies set the policy frameworks.
 - At regional level, the Flemish, Walloon and Brussels regions deal with vehicle taxation.
- EV-specific infrastructure
 - At national level the FPS Mobility and Transport and FPS Economy, SMEs, Self-Employed and Energy sets policy frameworks.
 - At regional level, the Flemish, Walloon and Brussels regions manage the road network, although there is no EV-specific infrastructure operated by them. Regulation also comes from regional energy regulators.
- Use of general infrastructure by EVs
 - General road infrastructure is managed by the regions (Flemish, Walloon and Brussels regions) except for local roads which are the responsibility of the communes (589 in Belgium).

Regulations

- Electric Vehicles
 - VAT, fuel taxes, grants for new vehicles (national level: FPS Finance)



- Regional vehicle registration taxes (Wallonia, Flanders and Brussels).
- Electric car grants (FPS Finance – national level), tax reduction for buying new electric motorcycles, mopeds, tricycles (FPS Finance), but not cars anymore (there was formerly a tax reduction for buying new cars but this was abolished in 2014). However from 2016 the Flemish Region offers a subsidy of up to €5000 for residents buying a new zero emission EV (there is no similar measure in Wallonia or Brussels). The 3 regions levy a car registration tax (“taxe de mise en circulation”): in Flanders this is free for EVs and in Wallonia and Brussels regions there are reductions for EVs (€61.50 or €123 tax for an EV compared to between €123 and €4957 for an ICE vehicle, depending on engine size).
- EV-specific infrastructure
 - None: There was formerly a tax reduction for installing EV charge points at home, but this was abolished in 2014.
- Use of general infrastructure by EVs
 - Regional laws on annual vehicle road tax (Wallonia, Flanders and Brussels)
 - Road infrastructure e.g. Low Emission Zones (LEZ), annual vehicle road tax (regions)
 - Annual road tax which is fixed by the region where the car is registered (Wallonia, Flanders, Brussels): varies by engine size, no specific reductions for EVs, but EVs exempt from the 'malus' taxes on polluting vehicles in Wallonia. Low Emission Zones (LEZ) currently in Antwerp (Flanders) and planned in Ghent (Flanders) and Brussels Region. In all cases EVs will have free access, whereas other vehicles may be free, charged a fee or banned depending on Euro emissions levels.

Energy & Electricity

Authorities

- National level: FPS Economy, SMEs, Self-Employed and Energy

Associations and Companies

- National level: CREG - the Belgian Federal Commission for Electricity and Gas Regulation (responsible for electricity production, storage, high voltage transmission and pricing)
- Regional regulators: Wallonia: CWaPE Flanders: VREG Brussels Region: BRUGEL

Regulations

- Regional regulators are responsible for allocating electricity supply licences, regional/local distribution, ensuring respect of regional legislation, issuing environmental certificates.
 - Only some mentions of e-mobility, e.g. BRUGEL (Brussels Region) Law of 19/07/2001 modified by the Law of 20/07/2011 on the organisation of the electricity market in Brussels-Capital Region, mentions the need to consider scenarios of development of EVs (Article 12/13), and 2009 recommendation on smart metering in the Brussels Region, mentioning the need to study potential additional energy demand due to the



expansion of EVs. In Wallonia, decision in 2010 by the regulator CWaPE to exclude suppliers of electricity at CPs (e.g. at service stations or other private suppliers) from having to obtain an electricity supply license.

ICT

Authorities

- Centre for Cybersecurity Belgium CCB (The Centre for Cyber security Belgium is the central authority for cybersecurity in Belgium. It will draft a national Cyber Security policy and encourage all relevant Belgian governments departments to make an adequate and integrated contribution.)

Associations and Companies

- Privacy Commission (The Privacy Commission ensures that personal data are handled with care and thoroughly protected, and that your future privacy also remains guaranteed.)
- Digital Wallonia (Wallonia's digital strategy, platform and brand, Digital Wallonia sets the framework for all of the Walloon Government's actions in terms of Wallonia's digital transformation.)

Regulations

- Law on electronic communications (The Law on electronic communications was adopted on 13 June 2005. It was intended to transpose the EU regulatory framework for electronic communications into Belgian law.)
- Law on the protection of private life with regard to the processing of personal data (The 'Privacy Law' of December 1992 is intended to protect citizens against the abusive use of personal data. The law defines the rights and duties of both the data subject and the processor. It moreover provides legal basis for the creation of an independent body in charge of overseeing the correct use of personal data, namely the Commission for the Protection of Privacy. Since its promulgation, this law has been significantly modified in 1998 in order to transpose the EU Directive on the protection of individuals with regard to the processing of personal data and on the free movement of such data (95/46/EC). This law is now available in its 'consolidated version' dated August 2007.)

Strategy, Roadmaps, Initiatives

- Masterplan for electro-mobility (2012) by the Federal Public Service of the Economy, SMEs, Self-Employed and Energy. Belgian Platform on Electric Vehicles, led by the Federal Public Service of the Economy, SMEs, Self-Employed and Energy. Consults, informs and brings together stakeholders in Belgium on e-mobility (e.g. charging infrastructure, batteries, role of authorities, etc.). Includes the EV to E.V. charter (Evolution to Electric Vehicles), aimed at businesses operating fleets who are implementing EVs (quality labelling/marketing scheme) coordinated by the business organisation Federation of Enterprises in Belgium.



Missing Standards:

Main needs and measures identified by the 2012 Federal Masterplan for Electro-mobility:

1. Integrating electro-mobility into a vision of sustainable mobility by year 2050
2. Targeting fleets to electrify
3. Encouraging wide usage of electrically-assisted bicycles
4. Promoting rapid electrification of scooters and motorcycles
5. Considering the contribution to L-category (light) EVs
6. Development of car-sharing
7. Imposing on car makers the requirement to recoup and recycle batteries
8. Adapting the taxation structure
9. Promoting research on certain key questions
10. Developing the production of renewable electricity

Table 9: Interoperability in Bulgaria - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none"> - Council of Ministers (The Council of Ministers is the executive state body and directs the domestic and foreign policy of the country. The government manages the implementation of the state budget, organizes the management of state property and approves or rescinds certain categories of international treaties pointed out in the Constitution.) - Ministry of Economy- ME (The main mission of the Ministry of Economy is to develop and carry out clear and transparent economic policy that protects the national and public interest and is based on the European principles. ME is working to create a competitive low-carbon economy, which will guarantee growth and development of Bulgaria.) - The Ministry of Education, Youth and Science - Centre for Research and Analyses (The MES-CRA supports activities, programmes and projects, which are focused on encouraging scientific research in the Republic of Bulgaria. Some of the activities of the MES-CRA are: initiating, supporting and carrying out activities for the advancement of science, innovation and technology; preparing and participating in scientific projects under regional, European and international programmes.) - Ministry of Environment and Water - MOEW (The MOEW is a Bulgarian government ministry responsible for environment protection.) - Executive Environment Agency - ExEA (ExEA is an administration with the Minister of Environment and Water to carry out management, coordination and information functions as regards the control and environmental protection in Bulgaria. It designs and manages the National System for Environmental Monitoring for monitoring and information on the state of environmental components and factors on the complete territory of the country. The Agency is



a National Reference Centre within the European Environment Agency (EEA).)

- Ministry of Regional Development and Public Works – MRDPW (The Bulgarian Ministry of Regional Development and Public Works elaborates strategy documents, such as strategies, programmes and plans, including the regional plans for the development of the six planning regions in Bulgaria. It also implements the regional development policy through infrastructure projects, projects and measures for encouraging the investments in Bulgaria, public-private partnerships, environmental projects, activities for improvement of housing, and administrative services, etc. The MRDPW also builds and maintains the technical infrastructure related to transport accessibility.)

Associations and Companies

- EV industrial cluster - EVIC (EVIC was registered on 25.11.2009 as an organization of cluster type. Industrial Cluster "Electric" was founded by seven Bulgarian companies and is the first in Bulgaria Industrial Association for electric mobility. Some of EVICs objectives are sustainable competitiveness of the members of EVIC; Establishment of National charging infrastructure for EVs; Adapted legislation and regulatory framework for promoting the use of EVs, Implementation of models of mass urban transport with electric buses)
- Bulgarian Electric Vehicles Association - BAEPS (Bulgarian Electric Vehicles Association unites people and organizations with the common goal of accelerating the introduction of EVs in Bulgaria in a sustainable way. In 2013 they became partners in two EU funded projects: FREEMOBY and PLUSMOBY. The PLUSMOBY project is focused to the implementation of low cost and low energy intensity technologies to manufacture premium four wheel fully electrical micro vehicles (450-650kg and speeds up to 90+ km/h)). FREEMOBY is a complementing project aiming to improve energy harvesting through inclusion of solar panels in the roof and side glazing surfaces of an electric vehicle and proposes automotive grade criteria for both the electric architecture and the vehicle integration of the panels.)
- Bulgaria Climate Coalition (The Bulgaria Climate Coalition is an informal platform established in 2005 on the occasion of an informal citizen initiative to mark the Global Day of Action against Climate Change (under the Campaign Against Climate Change) in Bulgaria. The Coalition comprises non-governmental organisations, companies, individual members and people working or active in the area of mitigating or preventing anthropogenic climate change around the world.)
- BULCHARGE (BULCHARGE is a national network for management and monitoring of charging stations for electric vehicles. BULCHARGE is owned by IKEM Corp. – the national operator for charging infrastructure for EVs. The company performs development, production, import and sale of charging stations, smart grid software for managing networks and others.)
- Vsichko Tok (Vsichko Tok is a national charging network of charging stations for electric vehicles)
- National Trust EcoFund - NTEF (The National Trust EcoFund was established in October 1995. The Fund manages assets from the state budget, including under the Debt-for-Environment and the Debt-for-Nature swaps. The functions are Selects and approves the projects to receive funding; Endorses the contracts with the beneficiaries upon project approval; Monitors the projects implementation.)



Regulations

- Law on Spatial Planning - LSP (LSP provides that movable vehicle should have access to the networks and facilities via temporary connections, in order to ensure proper operations. The law also explicitly states that the order to install such charging stations is determined by the municipal council responsible for the territory of each municipality, leading to different and even contradictory administrative regimes being in place. This in turn prevents or at least seriously impedes the development of large scale projects to build EV charging station infrastructure at a national level.)
- Directive 2014/94/EU on the deployment of an alternative fuels infrastructure (In the end of April 2017, to implement Directive 2014/94/EU on the deployment of an alternative fuels infrastructure, the Bulgarian Ministry of Regional Development and Public Works amended Ordinance No 2 from 2004 on the planning and design of communication-transportation systems in urban territories (the "Ordinance"). The amendment focuses on electric vehicles, which, by 2030, the legislator expects to increase in use by 16 to 20%. The Ordinance provides the framework for developing an infrastructure for electric vehicle charging points, provides a definition of electric vehicle – the first in Bulgarian legislation, and emphasises the preference of using electric vehicles in the public transport system.)

Energy & Electricity

Authorities

- Ministry of Energy (The Mission of Ministry of Energy is to lead transparent energy policy to protect the state and the public interest. The core of the energy policy is the development of a competitive internal and an integrated external market, the construction of a reliable infrastructure, security and diversification of sources and supply routes of the energy resources and an overall improvement of the energy efficiency.)
- State Energy and Water Regulatory Commission – EWRC (The EWRC issues, amends, supplements, suspends, terminates and withdraws licenses for electric/heat power generation, for electric/heat power or natural gas transmission, for electricity or natural gas distribution, for natural gas storage in natural gas storage and/or liquefaction facilities or import, unloading and regasification of liquefied natural gas in a liquefied natural gas facility, for electricity trade, for the organized power exchange, for electricity or natural gas public provision, for electricity or natural gas public supply, for electricity or natural gas supply from end suppliers, for traction electricity distribution through rail transport distribution networks, electricity supply from a supplier of last resort. The EWRC handles complaints referred to in Art.22 of EA. There you can find other key powers of the EWRC.)
- Sustainable Energy Development Agency- SEDA (SEDA is a legal successor of the executive Energy Efficiency Agency (EEA) and is a legal entity at state budget support with headquarters in Sofia and has the status of an executive agency within the Ministry of Energy.)
- Ministry of Regional Development and Public Works – MRDPW (The Bulgarian Ministry of Regional Development and Public Works elaborates strategy documents, such as strategies, programmes and plans, including the regional plans for the development of the six planning regions in Bulgaria. It also implements the regional development policy through infrastructure projects, projects and measures for encouraging the investments in Bulgaria, public-private partnerships, environmental projects, activities for improvement of housing, and administrative



services, etc.)

Associations and Companies

- Bulgarian Energy Holding - BEH (BEH is the holding company for a group of companies which are principally engaged in electricity generation, supply and transmission, natural gas transmission, supply and storage and coal mining. BEH Group holds a leading position in the electricity and gas market in Bulgaria and, through electricity exports, in the Balkans. BEH is wholly owned by the Bulgarian state and is the largest state-owned company in terms of total assets in the country. The rights of ownership of the state are exercised by the Minister of Energy.)
- BULCHARGE (BULCHARGE is a national network for management and monitoring of charging stations for electric vehicles (EV). BULCHARGE is owned by IKEM Corp. – the national operator for charging infrastructure for EVs. The company performs development, production, import and sale of charging stations, smart grid software for managing networks and others.)
- EV industrial cluster – EVIC (EVIC was registered on 25.11.2009 as an organization of cluster type. Industrial Cluster "Electric" was founded by seven Bulgarian companies and is the first in Bulgaria Industrial Association for electric mobility. Some of EVICs objectives are sustainable competitiveness of the members of EVIC; Establishment of National charging infrastructure for EVs; Adapted legislation and regulatory framework for promoting the use of EVs, Implementation of models of mass urban transport with electric buses)

Regulations

- Energy Efficiency Act (This Act regulates the social relations associated with the implementation of the State energy efficiency improvement policy)
- Energy from Renewable Sources Act (This act regulates the public relations associated with production and consumption of: 1. electricity, heating and cooling from renewable sources; 2. gas from renewable sources; 3. biofuels and energy from renewable sources in transport. Some primary objectives of this act are 1. promotion of production and consumption of energy produced from renewable sources and 2. promotion of production and use of biofuels and energy from renewable sources in transport.)
- Energy Act (This act regulates the public relations regarding the activities of generation, import and export, transmission, distribution of electricity, heat and natural gas, oil and oil product transmission by pipelines, trade in electricity, heat and natural gas, as well as the powers of state agencies in formulating energy policy, regulation and control. The principal purposes of this act are to create conditions for: 1. high-quality and secure supply of electricity, heat and natural gas to the general public and 2. energy development and energy security of the country through efficient use of energy and energy resources)

ICT

Authorities

- Ministry of Regional Development and Public Works – MRDPW (The Bulgarian Ministry of Regional Development and Public Works elaborates strategy documents, such as strategies,



programmes and plans, including the regional plans for the development of the six planning regions in Bulgaria. It also implements the regional development policy through infrastructure projects, projects and measures for encouraging the investments in Bulgaria, public-private partnerships, environmental projects, activities for improvement of housing, and administrative services, etc. The MRDPW aims to achieve development of spatial planning and related information systems of land registers, public-private partnerships, monitoring and implementation of the European standards in construction)

Associations and Companies

- Institute of Information and Communication Technologies IICT: The research and development activities of Institute of Information and Communication Technologies covers i.a. the following directions:
 - Information Technologies for Security
 - Intelligent systems
 - Grid Technologies and Applications (The department of Grid Technologies and Applications is focused on activities in the development and deployment of Grid middleware and software components, methods, algorithms, applications suitable for Grid, Cloud and HPC computing systems.)

Regulations

- Law for Protection of Personal Data (Adopted in December 2001 and amended in July 2007, the Law for Protection of Personal Data has been modelled on the EU Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data. It applies to the protection of individuals with regard to the processing of personal data, granting them the right to access and correct information held about them by public and private bodies. It defines lawful grounds for the collection, storage and processing of the personal data of individuals. Application of the Act is overseen by the Commission for Personal Data Protection, an independent supervisory authority.)
- Law on Electronic Communications (This Law was adopted on 10 May 2007 and amended in December 2010 regulating the public relations concerning the provision of electronic communications, which include the conveyance, emission, transmission or reception of signs, signals, written text, images, sound or messages of any nature by wire, radio waves, optical or other electromagnetic medium.)

Strategy, Roadmaps, Initiatives

- Third National Action Plan On Climate Change - NAPCC (The main strategic objective of the Third National Action Plan on Climate Change (NAPCC) is to outline the framework for action to combat climate change for the period 2013-2020 and to focus the country's efforts on actions leading to reduction of the negative impacts of climate change and implementation of the undertaken commitments.) The following main strategic documents of the country were taken into account for the development of the NAPCC:
 - National Development Programme: "Bulgaria 2020";



- Energy Strategy of the Republic of Bulgaria until 2020;
- National Energy Efficiency Programme until 2015;
- National Action Plan for Renewable Energy;
- National Programme for Promotion of the Biofuels Use in the Transport Sector 2008-2020;
- Strategy for Development of the Transport System of the Republic of Bulgaria until 2020;
- National Strategy for Development of the Forestry Sector in Bulgaria 2006-2015;
- National Strategic Plan for Gradual Reduction of Biodegradable Waste Intended for Landfilling 2010-2020.

Table 10: Interoperability in Croatia - Status Quo

Electromobility

Authorities

- Government of the Republic of Croatia (In the Republic of Croatia, state authority is organised on the principle of the division of power into legislative, executive and judicial branches. The Government of the Republic of Croatia exercises executive power pursuant to the Constitution and the law. In the exercise of executive power, the Government determines, directs and aligns the implementation of policies and programmes and to that end proposes and adopts strategies, issues guidelines, adopts acts and undertakes other measures necessary to regulate relations in the sphere of its competence.)
 - Ministry of Finance (The Ministry of Finance is accountable for the preparation and implementation of the Government's fiscal policy. Its goals are to contribute to stable economic growth and to the increase in prosperity, in quality of life and in employment for all Croatian citizens.)
 - Tax Administration²⁷ (The Tax Administration is the administrative organization within the Ministry of Finance whose basic task is to implement tax regulations and regulations concerning the payment of obligatory contributions. All residents are obliged to participate in the settlement of public expenses in accordance with their economic abilities. The tax system is based on the principles of equality and equity.)
 - Ministry of Justice (The Ministry of Justice is ensuring the conditions for quality functioning and further construction of the judicial system of the Republic of Croatia and the preservation of its fundamental values.)

Regulations

²⁷ In Croatian: Porezna Uprava
NeMo D1.3 Interoperability and
Regulatory Requirements



- Registration Tax Benefits (Tax reduction / exemption - CO2 based tax)

Energy & Electricity

Authorities

- Government of the Republic of Croatia (In the Republic of Croatia, state authority is organised on the principle of the division of power into legislative, executive and judicial branches. The Government of the Republic of Croatia exercises executive power pursuant to the Constitution and the law. In the exercise of executive power, the Government determines, directs and aligns the implementation of policies and programmes and to that end proposes and adopts strategies, issues guidelines, adopts acts and undertakes other measures necessary to regulate relations in the sphere of its competence.)
 - Ministry of Environment and Energy (The focus of the work carried out by the Ministry of Environment and Energy is to create conditions for sustainable development – development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The scope of work of the Ministry includes task related to protection and conservation of the environment and nature in line with the sustainable development policy of the Republic of Croatia, as well as tasks related to water management and administrative and other tasks from the field of energy.)
 - Ministry of Economy (The Ministry of Economy performs administrative and other tasks related to the development and improvement of the competitiveness of the Croatian economy, instruments and measures of economic policy.)

Associations and Companies

- Croatian Energy Market Operator - HROTE²⁸ (HROTE's mission is to provide quality services in the electricity market, the gas market, the system of encouraging the production of energy from renewable sources and keeping registers entrusted to the complete satisfaction of the customers and owners.)
- Croatian Energy Regulation Agency - HERA²⁹ (The Croatian Energy Regulatory Agency is an autonomous, independent and non-profit public institution which regulates energy activities in the Republic of Croatia. HERA's obligations, authorities and responsibilities are based on the Act on the Regulation of Energy Activities, the Energy Act and other acts regulating specific energy activities.)
- Croatian Transmission System Operator Ltd. – HOPS³⁰ (HOPS d.o.o. is the sole electricity transmission system operator in the Republic of Croatia, and the owner of the entire Croatian transmission network (400 kV, 220kV and 110kV included voltage levels). HOPS d.o.o. has the license to carry out electricity transmission as a public service. The company performs its

²⁸ In Croatian: Hrvatski operator tržišta energije

²⁹ In Croatian: Hrvatska Energetska Regulatorna Agencija

³⁰ In Croatian: Hrvatska Elektroprivreda Operator Prijenosnog Sustava



functions transparently and independently in accordance with the Croatian Companies Act.)

- Centre for Monitoring Business Activities in the Energy Sector and Investments - CEI31 (CEI is established with the objective of finding solutions for improving the financial effectiveness of companies in the energy sector in which the state has shares or holds stock and appropriate and targeted directing of funds in a manner ensuring biggest and most long-term economic return, stable growth and centralized and systematic monitoring of all investments in the Republic of Croatia.)

Regulations

- Act on the regulation of energy activities (This Act regulates the establishment and implementation of the system for the regulation energy activities, the procedure for establishing the energy regulatory body and other matters of importance for the regulation of energy activities.)
- Energy Act (The Energy Act harmonizes Croatian legislation with the EU Directives 2009/72/EC and 2009/73/EC hence with the outlines of Third EU Energy Package. Energy Act regulates measures to ensure secure and reliable energy supply, efficient power generation and its use, stipulates how energy policy and energy strategy will be designed; states that energy activities in Croatia are based on market principles or pursuant to public service obligation. Act outlines need to promote renewable energy sources in order to increase security of energy supply and strengthen national energy generation as well as the modernization of the sector. It also sets framework for system of guarantees of origin of electricity. Art 26 of the Act sorts out issue of FITs for E-REs.)
- Electricity Market Act (This Act regulates the performance of the following activities of the energy sector: generation of electricity, transmission of electricity, distribution of electricity, supply of electricity and organization of the electricity market.)

ICT

- Authorities
- Croatian Chamber of Economy (The Croatian Chamber of Economy, chaired by Mr. Luka Burilović, is much involved in the IT sector by creating favourable conditions for a rapid growth of this sector in the Republic of Croatia: participation in many projects, development of regulations and creating credit worthiness of companies. The Chamber is in charge of the promotion of the IT sector at the international level.)
- Ministry of Science and Education (The Ministry participates in the development of programmes and projects, and the implementation of the EU-funded projects as well as projects funded from other international sources. The Ministry cooperates with the ministry competent for management of state property in all affairs regarding management and disposal of shares and interests in state-owned companies, as well as companies which are primarily engaged in activities within the jurisdiction of this Ministry.)
- Ministry of Public Administration (The mission of the Ministry of Administration is continuously improving the system of public administration in order to ensure and protect the public interest,

³¹ In Croatian: Centar za praćenje poslovanja energetskog sektora i investicija



legal action and provide services in the realization of the rights of citizens and economic entities of the Republic of Croatia.)

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- Associations and Companies
- Croatian Institute of Technology, Ltd. (This institution supports and directs Croatia's developments, advises and provides support in the field of intellectual property and technology transfers. The institution also promotes participation in European research and development projects. In the international context, HIT promotes the Croatian technology production as well as research and development potential.)
- Croatian Information Technology Association – CITA (The Croatian Information Technology Association, is the umbrella organisation of Croatian ICT experts founded in 1975, ever since it has been acting continuously with the goal to create the conditions for faster and more efficient introduction and application of ICT: by advocating the status and the quality of profession; by initiating and implementing the projects of mutual interest; by promoting and using open systems; by encouraging and organising the participation of the young in ICT; by exchanging skills and experiences in using ICT and by organising professional gatherings.)
-
- Regulations
- Electronic Communications Act NN 73/2008 (The Electronic Communications Act ensures the achievement of the essential principles and objectives in the area of electronic communications, such as further consolidation and simplification of the existing legislative framework in electronic communications and the application of other solutions in accordance with best practices in EU Member States.)
- Electronic Signature Act NN 10/02 / NN 80/08 / NN 30/14 (Croatia was one of the first countries to include digital signatures in its legislation. The Electronic Signature Act has been supplemented by a series of ordinances and regulations, such as the Regulation on the scope of operations, content and responsible authority for operations of electronic signature certification for State Administration bodies (NN 146/04).)
- Law on Personal Data Protection NN 103/03 (The Law on Personal Data Protection was adopted in June 2003, implementing the relevant EU Directive (95/46/EC). It foresees that personal data may be transferred cross-border and processed in another jurisdiction, to the extent that this jurisdiction can ensure an adequate level of protection. The law was amended once on 20 October 2006 (NN 118/06), while the last amendment took place on 3 April 2008 (NN 41/08).)
- Law on Freedom of Information NN 172/03 (Due to the change in the Croatian Constitution in 2010 (Official Gazette 76/2010), the right of access to information became part of the catalogue of citizen's constitutional rights. The right of access to information is governed by the Act on the Right of Access to Information (Official Gazette 25/2013, 85/2015). The Act transposes the EU Directive on the re-use of public sector information 2003/98/EC, 2013/37/EU, and it also regulates the re-use of such information. The Act on the Right of Access to Information regulates the right of access to information and re-use of information held by public authorities, lays down the principles of the right of access to information and to the re-use of information, the restrictions on the right of access to information and the re-use of information, the procedure for the exercise of rights of access to information and the re-use of



information, the scope, mode and conditions for the appointment and dismissal of the Information Commissioner, the inspection of the implementation of this Act, the misdemeanour provisions related to the exercise of the right of access to information and also regulates public authorities' other obligations.)

Strategy, Roadmaps, Initiatives

- e-Croatia 2020 Strategy (The Vision of the strategy is a public administration serving citizens, business and scientific entities by using contemporary ICT technologies and innovative solutions, and as the basis of the transformation of the Republic of Croatia into a knowledge-based society.)

Missing Standards:

- Currently, there is no specific legislation concerning the re-use of Public Sector Information (PSI).

Table 11: Interoperability in Cyprus - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none"> - Ministry of Transport Communications and Works (The Ministry's mission is the design and implementation of policies for the continuous improvement of transport and of communications, as well as the continuous upgrading of the quality of projects implemented by the Ministry.) <ul style="list-style-type: none"> – Department of Road Transport (The Department of Road Transport was established in 1975. The Department's main responsibilities are separated into two broad sectors. The first sector includes the study of the problems in public transport, aiming at improving the services offered to the public. The second sector includes all those activities relating to vehicles, that is, their registration, their inspection for registration and the issue and renewal of driving licenses and circulation fees.) - Ministry of Finance (The Ministry's mission is to ensure conditions of macroeconomic stability and the sound management of resources and of the financial obligations of the State, in order to improve the quality of life of every citizen of the Republic.) <p>Regulations</p> <ul style="list-style-type: none"> - Incentives <ul style="list-style-type: none"> – Registration Tax Benefits : Tax reduction / exemption - CO2-based taxes – Ownership Tax Benefit: Tax reduction / exemption - CO2-based taxes
Energy & Electricity
<p>Authorities</p>



- Ministry of Energy, Commerce, Industry and Tourism of the Republic of Cyprus (The Ministry of Energy, Commerce, Industry and Tourism is responsible for the formulation and implementation of Government policy on matters pertaining to trade, industry, tourism and Consumer, in such a way that it will contribute positively towards the further development of the Cyprus economy and the well-being of the population of the island.)
- Cyprus Energy Regulatory Authority CERA (CERA is the National Independent Regulatory Authority for Energy. The Authority oversees and regulates the market for electricity and gas, ensure effective and fair competition, protect the interests of consumers, ensure safety, quality, competence, continuity and reliability in energy supply.)

Regulations

- Law Regulating the Electricity Market LREM (The purpose of this law is to implement European Union Directives 96/92/EC and 2003/54/EC. It includes the following rules on the promotion of electricity from renewable sources: Renewable energy plant operators are contractually entitled against the grid operator to the priority connection of plants to the grid without discrimination; Plant operators are contractually entitled to priority access and transmission of electricity from renewable sources; After the conclusion of a connection agreement, a plant operator is contractually entitled against the grid operator to the expansion of the grid if the expansion is necessary to connect a plant to the grid.)

ICT

Authorities

- Ministry of Transport Communications and Works (The Ministry's mission is the design and implementation of policies for the continuous improvement of transport and of communications, as well as the continuous upgrading of the quality of projects implemented by the Ministry.)
 - Office of the Commissioner for Personal Data Protection (The Commissioner deals with the protection of personal information against any unauthorised and illegal collection, recording and further use of that information. It also grants the individual certain rights, such as the right of information and the right of access to it. The office also accepts and examines lodged complaints in relation to the application of the law.)
 - Department of Information Technology Services DITS (The Department of Information Technology Services is the Government body responsible for matters concerning the promotion and application of Information Technology and e-Government in the Public Sector. The mission of the department is to plan, develop, implement, manage and maintain the Information and Communication Technology systems.)

Regulations

- Law on processing of personal data (The Processing of Personal Data (Protection of Individuals) Law entered into force in November 2001, and was amended by Law 37(I)/2003. It is compliant to the *acquis communautaire*, and especially, the European Directive 95/46/EC on Data Protection.)

Strategy, Roadmaps, Initiatives



- Energy efficiency target declared by Cyprus under the EU Directive 2012/27/EU (The national primary energy savings target of Cyprus under the EU Directive 2012/27/EU was estimated by means of a study carried out in cooperation with the Cyprus University of Technology. This target is indicative and concerns primary energy savings equal to 463.000 tonnes of oil equivalent (14.3%) by 2020 and may be implemented through the adoption of additional measures in addition to the ones implemented by 2010.)
- National Renewable Energy Action Plan NREAP Cyprus (Under the EU Directive 2009/28/EC member countries of the European Union are obliged to draft and submit to the European Commission National Renewable Action Plans (NREAPs) outlining pathway which will allow them to meet their 2020 renewable energy, energy efficiency and GHG cuts targets. Cyprus 2020 renewable energy targets: Overall target: 13% of share of energy generated from renewable sources in gross final energy consumption; Heating and cooling: 23.5% of heat consumption met by renewable sources; Electricity: 16% of electricity demand met by electricity generated from renewable energy sources; Transport: 5% of energy demand met by renewable energy sources.)
- Digital Strategy of Cyprus (The Digital Strategy of Cyprus aims following six objectives: Connect Cyprus, Modernize public administration and provide public electronic services, Inclusion of all into digital Cyprus, Education and Learning, Digital Entrepreneurship and ICT for the environment.)

Table 12: Interoperability in Czech Republic - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none">- Government of the Czech Republic (The Government is the supreme body of executive power. The Government consist of the Prime Minister, Deputy Prime Ministers and 14 Ministries.)<ul style="list-style-type: none">- Ministry of Transport (The Act No. 2/1969 Coll. on establishing ministries and other central bodies of the Czech Republic as amended lays down in the Article 17 that the Ministry of Transport is a central authority of the state administration for transport issues; it is responsible for the preparation of the state transport policy and, within its competence, for its implementation.)- Ministry of the Environment - MoE (The Ministry of the Environment was established as of 1 January 1990 by Act No. 173/1989 Coll., dated 19 December 1989, to function as the central state administrative authority and supreme inspection authority in environmental affairs. The MoE is the central state administrative authority in i.a.: national environmental policy, environmental impact assessment of activities and their consequences, including transboundary and waste management. To guarantee and inspection activity of the Government of the Czech Republic, the Ministry of the Environment co-ordinates the activities of all Ministries and other central state administrative authorities of the Czech Republic in environmental matters.)- Ministry of Finance of the Czech Republic (The Ministry of Finance is the central government body responsible for the State Budget, the State Final Account, the Treasury)



of the Czech Republic, the financial markets, taxes, customs duties and fees, the financial economy, financial supervision, accounting, audit and tax consultancy, foreign-exchange policy including bills payable to and claims on foreign countries, the protection of foreign investment, regulation of lotteries and similar games, activities with state property, the privatization of state property, insurance companies, retirement funds, prices, and activities against the legalization of revenues from illegal activities.)

Regulations

- Ownership Tax Benefits: Electric, hybrid and other alternative fuel vehicles are exempt from the road tax (this tax applies to cars used for business purposes only).

Energy & Electricity

Authorities

- Government of the Czech Republic (The Government is the supreme body of executive power. The Government consist of the Prime Minister, Deputy Prime Ministers and 14 Ministries.)
 - Ministry of Industry and Trade (The Ministry of Industry and Trade is the central body of the government administration involved in: the National Industry Policy, the Energy Policy, the Trade Policy in the context of the European Common Market, the Export Promotion Policy, the Integrated Raw Materials Policy and the Use of Mineral Resources; Business and Investment Promotion in the areas of Manufacturing Industry and of Industrial Research and Development including the use of European funds; Technical standardization, metrology and state quality control; Industrial research, engineering and technology development; Electronic communication and postal services; and other.)
 - Investment and Business Development Agency (The Business and Investment Development Agency CzechInvest, is an agency of the Ministry of Industry and Trade. Established in 1992, the agency contributes to attracting foreign investment and developing domestic companies through its services and development programmes. CzechInvest also promotes the Czech Republic abroad and acts as an intermediary between the EU and small and medium-sized enterprises in implementing structural funds in the Czech Republic.)
- Energy Regulatory Office – ERO (The Energy Regulatory Office was set up on 1 January 2001 under Act No. 458/2000 of 28 November 2000, on the Conditions of Business and State Administration in Energy Industries and Changes to Certain Laws (the Energy Act) as amended, as an administrative authority responsible for regulation in the energy sector.)

Associations and Companies

- CEZ Group (CEZ Group is an established, integrated electricity conglomerate with operations in a number of countries in Central and South-eastern Europe and Turkey, headquartered in the Czech Republic. Its principal businesses encompass generation, trading, and distribution of power and heat, as well as coal mining.)



Regulations

- Energy Act No. 458/2000 Coll. (This 2004 Act amends the 2001 Energy Act above in the following spheres: - liberalisation of energy market (according to the EU Directives of 2003) - access to grids with the aim of trans border trading; - public interest incl. long-term planning for energy resources; - protection of final customers; - promotion of power production and of heat production based on renewable energy sources and on cogeneration. The 2004 Energy Act includes provisions implementing EU Directives issued before 2005. The next amendment of the Energy Act due to implementation of EU Directive 2006/32/EC is under development as of November 2008.)

ICT

Authorities

- Office for Personal Data Protection (The Office for Personal Data Protection is an independent body set up to: supervise observance of the legal obligations laid down for processing of personal data; maintain the register of notified data processing operations; deal with initiatives and complaints from citizens concerning breach of law; provide consultancy in personal data protection.)

Regulations

- The Act no. 181/2014 Coll. on the Cyber Security and on the Amendments of the Related Acts (The Act on the Cyber Security aims to put into practice a set of powers and duties in order to enhance cyber security and to set the mechanism of active cooperation between the private sector and the public administration in order to increase the efficiency of dealing with the cyber security incidents. This Act focuses on the protection of the critical infrastructure, which is important for the functioning of the state and disruption of which would lead to the damage or threat to the interests of the Czech Republic.)
- Act on the Protection of Personal Data (The Data Protection Act No. 101/2000 was adopted in April 2000 with the aim to protect the citizens' right to privacy. To this end, it regulates the rights and obligations regarding the processing of personal data and specifies the conditions under which personal data may be transferred to other countries. Furthermore, it allows individuals to access and correct their personal information held by public and private bodies. It is enforced by the Office for Personal Data Protection. It was last amended in 2011.)
- Act on Electronic Communications (The Act on Electronic Communications and on Amendment to Certain Related Acts No. 127/2005 Coll. was adopted by the Parliament on 22 February 2005, took effect on 1 May 2005 and was amended several times, with the last amendment taking place in 2013. It transposes the EU Regulatory Framework for Electronic Communications into national law, whose main aim is to strengthen electronic communications sector competition by making market entry easier and by stimulating investment in this area.)

Strategy, Roadmaps, Initiatives

- National Energy Efficiency Action Plan NEEAP (The National Energy Efficiency Action Plan set out estimated energy consumption, planned energy efficiency measures, and the improvements individual EU countries expect to achieve.)



Table 13: Interoperability in Denmark - Status Quo

Electromobility

Authorities

- The government of Denmark (The Government is the chief executive body of Denmark. It consists of ministries and ministers)
 - Ministry of Transport, Building and Housing (The main responsibility of the Ministry of Transport, Building, and Housing lies within the following areas: Transport: roads, vehicles, railways, rapid transit systems (e.g. the Copenhagen metro), fixed links, harbours, ferry operations, aviation, airports and postal services. Building: national office buildings, building regulation, and regulation of the construction sector. Housing: social housing, housing regulation, and urban renewal.)
 - Ministry for Economic Affairs and the Interior (The Ministry for Economic Affairs and the Interior is responsible for the following policy areas: Structural Policy, Forecasts of the Danish Economy, Governance of Municipalities and Regions, Economics of Municipalities , and Regions, Elections and Referenda)
 - Ministry of Industry, Business and Financial Affairs (The Ministry of Industry, Business and Financial Affairs seeks to improve the conditions for business in Denmark. The Ministry conducts thorough economic analyses, suggests policy initiatives in areas imperative to economic growth and is responsible for a number of policy areas which are important for the general business environment, including business regulation, Intellectual Property Rights, competition and consumer policy, the financial sector and shipping.)

Regulations

- Incentives
 - Purchase Subsidies
 - Up to 15.000 DKK (\$2.200)/vehicle, limited to a total lump sum (More for e-Buses)
 - Registration Tax Benefits
 - No purchase tax for FCEV's
 - BEV's pay only 40% tax instead of 150% of an ICE vehicle
 - EVs pay only 40% of full tax.
 - Company Tax Benefits
 - Companies that supply EV charging on a commercial basis can receive an electricity tax rebate that amount to approximately 1 DKK (\$0.15) per kilowatt-hour.
 - Local Incentives
 - Municipalities can differentiate charging



- Payment benefits for parking lots up to 5.000 DKK (\$735) per year
- Dedicated parking lots for PEV's
- Fleet owners purchasing energy efficient vehicles – including EVs – can receive funding from the utility companies, ranging from 2,000-4,000 DKK (\$300-\$600) per vehicle.
- Infrastructure Incentives
 - Tax rebate on installation of EV home chargers of up to 18.000 DKK (\$2.646)
 - Connection charge reduced by 50% for public charging stations.

Energy & Electricity

Authorities

- Danish Ministry of Energy, Utilities and Climate (The Danish Ministry of Energy, Utilities and Climate is responsible for national and international efforts to prevent climate change, as well as energy issues, national geological surveys in Denmark and Greenland, meteorology and buildings.)
- Danish Energy Agency (The Danish Energy Agency is a part of the Ministry of Energy, Utilities and Climate. The work of the Danish Energy Agency involves matters relating to energy production, supply and consumption, as well as Danish efforts to reduce carbon emissions. The Agency is also responsible for supporting the economical optimisation of utilities that in addition to energy includes water, waste and telecommunication.)
- Danish Energy Regulatory Authority - DERA (The Danish Energy Regulatory Authority (DERA) is independent of the government. The tasks of DERA are stipulated in the supply acts for electricity, natural gas and heat, and pursuant to these acts DERA must: Interpret the energy legislation; methods applied by grid companies in the electricity; monitors a number of areas such as the wholesale markets and the retail markets for electricity; works to ensure transparency for customers on the energy markets, for example by publishing prices of energy.)

Associations and Companies

- Energinet (Energinet is an independent public enterprise owned by the Danish Ministry of Climate and Energy. They own, operate and develop the transmission systems for electricity and natural gas in Denmark.)
- DONG Energy (DONG Energy is a focused energy company with a strong profile in renewables. We have activities primarily in North-western Europe. In 2009, Better Place and DONG Energy closed a joint agreement investing about 100 million Euros in a nationwide Danish infrastructure for electric cars to pave the way for Denmark to adopt EVs on a larger scale.)

Regulations

- The Electricity Supply Bill (The objective of the Act is to ensure that the electricity supply of the country is organised and implemented in accordance with consideration for security of supply,



the national economy, the environment and consumer protection. Within the terms of this objective, the Act is to ensure consumers access to inexpensive electricity and continue to provide them with influence on the administration of the assets of the electricity sector)

- Renewable energy policy database and support (In Denmark, electricity from renewable sources is promoted through a premium tariff and net-metering. In addition, local initiatives for the construction of wind energy plants are supported through loan guarantees.)

ICT

Authorities

- Ministry of Justice (The Ministry of Justice is responsible for the overall justice system, including the police and prosecution service, courts and prisons. The Ministry's principal functions further include foundation legislation and data protection law.)
- Danish Defence Intelligence Service - DDIS (DDIS has three primary areas of responsibility: the DDIS is Denmark's foreign and military intelligence service, Denmark's national information and communications technology security authority, and the responsible authority for military security. The DDIS is under the authority of the Danish Ministry of Defence.)
 - Centre for Cyber Security – CFCS (Established in 2012, the CFCS is a sector in the DDIS. The CFCS is Denmark's national information and communications technology (ICT) security authority. The purpose of the centre is to contribute to the protection of Denmark against cyber threats. The primary tasks of the CFCS are to detect, notify of and counter cyber-attacks against Denmark's national security and Danish interests. Also, as the national ICT authority, the CFCS issues security clearances and enforces rules within the ICT field.)

Regulations

- Act on Processing of Personal Data (This act entered into force on 1 July 2000 in order to implement Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data, allowing individuals to access their records held by public and private bodies.)
- Act on Electronic Communications Networks and Services (Providers of electronic networks and services are required to notify the competent body for eGovernment in cases of data breaches that have significant consequences on the provision of services or concern person-identifiable information. This legal requirement implements in part Directives 2009/140/EC and 2009/136/EC. The Act has been amended several times and amendments have been consolidated in the Amendment Act of 2014.)

Strategy, Roadmaps, Initiatives

- Targets regarding electric vehicles (PHEVs and EVs): 2020: 50,000 stock
- Targets regarding infrastructure 2020: 20,000 charging points



Table 14: Interoperability in Estonia - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none">- Estonian Government (The main goal of the Government is to safeguard and increase our security, to bring Estonia out of economic stagnation, to increase public welfare and cohesion, and to start an increase in the population numbers of Estonia.)<ul style="list-style-type: none">- Ministry of Economic Affairs and Communications (The Ministry develops and implements plans contributing to the development of public transport and enhancing the environmental friendliness and traffic safety of vehicles.)- Ministry of Finance (The Ministry of Finance is the Government's expert in the implementation of financial and budgetary policy and the targeting of the economy and plans the tax and customs policy and maintains a stable tax system.)- Ministry of the Environment (The area of government of the ministry includes: organising of national environmental and nature protection, fulfilling tasks related to land and databases containing spatial data, organising the use, protection, re-production and accounting for natural resources.)
<p>Regulations</p> <ul style="list-style-type: none">- Traffic Act (This Act provides for traffic management on the roads of Estonia, traffic rules, the principles and basic requirements for ensuring road traffic safety, the rules for registration of and the requirements for power-driven vehicles, trams, their trailers and off-road vehicles, the requirements for granting the right to drive, the working and rest time of drivers of power-driven vehicles, management and maintenance of the motor register and liability for violation of the traffic rules.)
Energy & Electricity
<p>Authorities</p> <ul style="list-style-type: none">- Estonian Government (The main goal of the Government is to safeguard and increase our security, to bring Estonia out of economic stagnation, to increase public welfare and cohesion, and to start an increase in the population numbers of Estonia.)<ul style="list-style-type: none">- Ministry of Economic Affairs and Communications (The main strategic objectives of the Ministry involve governance that encourages entrepreneurship and innovation, an efficient and safe transport system, constantly developing information society and environmentally friendly energy supply at a justified price.)
<p>Regulations</p> <ul style="list-style-type: none">- Electricity Market Act (This Act governs the generation, transmission, sale, export, import and transit of electricity and the economic and technical management of the power system. This Act prescribes the principles of the operation of the electricity market, based on the need to ensure an effective supply of electricity which is provided at a reasonable price and which meets environmental requirements and the needs of consumers, and the utilisation of energy



sources in a balanced manner, in an environmentally clean way and with a long-term perspective.)

ICT

Authorities

- Estonian Government (The main goal of the Government is to safeguard and increase our security, to bring Estonia out of economic stagnation, to increase public welfare and cohesion, and to start an increase in the population numbers of Estonia.)
 - Ministry of Economic Affairs and Communications (The information society policy of the Republic of Estonia is shaped and coordinated by the Ministry of Economic Affairs and Communications.)
- Technical Regulatory Authority (The Technical Regulatory Authority is a governmental organisation established in 2008 by merging the Communications Board, the Railway Inspectorate and the Technical Surveillance Inspectorate and operating in the administrative area of the Ministry of Economic Affairs and Communications. The aim of Technical Regulatory Authority is helping to implement the national economic policy through improvement of safety, organising the expedient use of limited resources and increasing the reliability of the products in the field of manufacturing environments, industrial equipment, railway and electronic communication.)
- Data Protection Inspectorate (The Data Protection Inspectorate defends your constitutional rights: right to obtain information about the activities of public authorities; right to inviolability of private and family life in the use of personal data; right to access data gathered in regard to yourself.)

Associations and Companies

- Estonian Association of Information Technology and Telecommunications ITL (Estonian Association of Information Technology and Telecommunications is a voluntary organisation, whose primary objective is to unite the Estonian information technology and telecommunications companies, to promote their co-operation in Estonia's development towards information society, to represent and protect the interests of its member companies and to express their common positions. Main activities of the association include popularisation of information and communication technology, promotion of vocational education and amendment of legislation.)

Regulations

- Personal Data Protection Act PDPA (The Personal Data Protection Act entered into force on 19 July 1996. The Act was amended in 2003, to be made fully compliant with the EU Data Protection Directive 95/46/EC, and once again amended in January 2008. The Act protects the fundamental rights and freedoms of persons with respect to the processing of their personal data, in accordance with the right of individuals to obtain freely any information that is disseminated for public use.)
- Electronic Communications Act (The Electronic Communications Act was passed on 8 December 2004 and entered into force on 1 January 2005 in order to implement the EU



Regulatory Framework for Electronic Communications. The purpose of this Act is to create the necessary conditions to promote the development of electronic communications networks and communications services while ensuring the protection of the interests of users of such services. The Act provides requirements for: publicly available electronic communications networks and communications services; radio communication; management of radio frequencies and numbering; apparatus and State supervision over the compliance with the requirements. The Act was lastly amended on 16 January 2011 and entered into force on 1 January 2015. It is already known that there will be new amendments which will enter into force 1 January 2016.)

Strategy, Roadmaps, Initiatives

- National Development Plan of the Energy Sector (The Long-term national development plan for the fuel and energy sector up to 2020, endorsed by a decision of Parliament, sets long-term objectives and policy orientation in the energy sector. The Plan sets the targets for the share of energy produced from renewable energy sources. In 2020, the share of renewables in total final energy demand should be 25%, in transport sector 10%. It adopts general policy guidelines to achieve growth in renewable energy use.)
- Estonian National Strategy on Sustainable Development - Sustainable Estonia 21 SE21 (Sustainable Estonia 21 is a development strategy devised on the basis of the Terms of Reference approved by Government Resolution No. 33 of 24 July 2001 and set out in procurement contract No. 2-11- 13/146. According to the Terms of Reference, SE21 is a strategy for developing the Estonian state and society until the year 2030 with the aim of integrating the success requirements arising from global competition with the principles of sustainable development and preservation of the traditional values of Estonia.)
- Estonian Environmental Strategy 2030 (The Environmental Strategy 2030 is a strategy for developing the sphere of the environment which builds upon the principles of the National Strategy on Sustainable Development "Sustainable Estonia 21" and serves as the basis for the preparation and revision of all sector-specific development plans within the sphere of the environment.)
- Digital Agenda 2020 for Estonia (In November 2013, the Government approved the Digital Agenda 2020 for Estonia, which will be used to establish a well-working state information and communication technology environment.)
- National Transport Development Plan 2014-2020 (The National Transport Development Plan 2014-2020 describes the plans for both international passenger and carriage of goods for the next six years. One of the main goals is increasing the share of more economic vehicles that run on renewable energy so that bio methane or compressed gas, generated from domestic bio mass and waste, would become the main alternative type of fuel in Estonia.)

Missing Standards:

- This country currently has no incentives.
- The energy sector regulation act is being drafted.



Table 15: Interoperability in Finland - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none">- Finnish Government (The Finnish Government is to be understood, on the one hand, as the body which convenes for the general governing of the country, consisting of the Prime Minister and other ministers, and, on the other hand, the decision-making body for governmental and administrative matters consisting of the Government plenary session and the ministries. The current Finnish Government comprises 12 ministries. Each ministry is responsible for the preparation of matters within its mandate and for the proper functioning of administration.)<ul style="list-style-type: none">- The Ministry of Transport and Communications (The Ministry of Transport and Communications is responsible for the provision of safe and secure transport and communications connections and services. It also enables the use of new digital services. The aim is to create a favourable operating environment for the services and new business models. The Ministry of Transport and Communications implements the strategic Government Programme within its sectors. A cross-cutting theme in the Government Programme is digitalisation.)- The Ministry of Economic Affairs and Employment - MEAE) (The Ministry of Economic Affairs and Employment is part of the Government. MEAE's task is to build an operating environment and to ensure productivity, growth, high levels of employment and well-being. As part of the Government, the ministry implements the Government Programme, drafts legislation, monitors and develops issues falling within its remit and steers the agencies in its administrative branch.) <p>Associations and Companies</p> <ul style="list-style-type: none">- Tekes – the Finnish Funding Agency for Innovation (Tekes is the most important publicly funded expert organisation for financing research, development and innovation in Finland. They boost wide-ranging innovation activities in research communities, industry and service sectors.)
Energy & Electricity
<p>Authorities</p> <ul style="list-style-type: none">- Finnish Government (The Finnish Government is to be understood, on the one hand, as the body which convenes for the general governing of the country, consisting of the Prime Minister and other ministers, and, on the other hand, the decision-making body for governmental and administrative matters consisting of the Government plenary session and the ministries. The current Finnish Government comprises 12 ministries. Each ministry is responsible for the preparation of matters within its mandate and for the proper functioning of administration.)<ul style="list-style-type: none">- The Ministry of the Environment (The Ministry of the Environment is responsible for preparing matters to be submitted for consideration by the Government and Parliament, such as matters concerning communities, the built environment, housing, biodiversity,



sustainable use of natural resources and environmental protection.)

- Energiavirasto³² - EV (Energy Authority)
- Finnish Competition and Consumer Authority (The Finnish Competition and Consumer Authority supervises competition law issues arising in the electricity sector.)

Associations and Companies

- Finnish Energy – ET (Finnish Energy is a branch organisation for the industrial and labour market policy of the energy sector. It represents companies that produce, procure, distribute and sell electricity, district heat and district cooling and related services.)
- Centre for Economic Development, Transport and the Environment (Centre for Economic Development, Transport and the Environment supervises the relevant environmental permits and works with the central government to prevent damage to the environment.)

Regulations

- Electricity Market Act 588/2013 (EMA) (The EMA entered into force on 1 September 2013 and implemented EU's third Energy Package, including Directive 2009/72/EC concerning common rules for the internal market in electricity and repealing directive 2003/54/EC.)

ICT

Authorities

- Finnish Government (The Finnish Government is to be understood, on the one hand, as the body which convenes for the general governing of the country, consisting of the Prime Minister and other ministers, and, on the other hand, the decision-making body for governmental and administrative matters consisting of the Government plenary session and the ministries. The current Finnish Government comprises 12 ministries. Each ministry is responsible for the preparation of matters within its mandate and for the proper functioning of administration.)
 - The Ministry of Transport and Communications (The responsibilities of the Ministry of Transport and Communications include legislation related to infrastructure, i.e. communications networks, data protection and data security questions. The Communications Policy Department, rooted within the Ministry, is divided into two units. The Communications Networks Unit prepares laws and other strategic guidelines related to frequencies and network licences, broadband connections, information security and critical infrastructure protection. The Media and Communications Services Unit is responsible for issues related to information society projects and privacy protection of communications.)

Regulations

- Personal Data Act (The Personal Data Act, which came into force on 1 June 1999, replaced the Personal Data File Act of 1988, which was the first law concerning data protection in Finland, aiming at preventing violations of integrity at all stages of data processing. The

³² <http://www.energiavirasto.fi/en/home>



functional objective was to promote the development of and compliance with good data processing practices. The main principles of the protection of privacy remained largely unchanged in the 1999 Act. It accommodates the constitutional reform and the EU Data Protection Directive 95/46/EC.)

- Act on the Protection of Privacy in Electronic Communications (The objective of the Act is to ensure confidentiality and protection of privacy in electronic communications and to promote information security in electronic communications and the balanced development of a wide range of electronic communications services.)

Strategy, Roadmaps, Initiatives

- Government report on the National Energy and Climate Strategy for 2030 (The National Energy and Climate Strategy outlines the actions that will enable Finland to attain the targets specified in the Government Programme and adopted in the EU for 2030, and to systematically set the course for achieving an 80–95 per cent reduction in greenhouse gas emissions by 2050.)

Table 16: Interoperability in Ireland - Status Quo

Electromobility

Authorities

Electric Vehicles

- National ministries:
 - Department of Communications, Climate Action and Environment (The areas that the department is responsible for are diverse, encompassing the communications, energy, natural resources, postal and broadcasting sectors. The department is also responsible for 18 commercial, non-commercial and regulatory agencies.)
 - Department of Transport, Tourism and Sport (As a central Government Department, serving the Government and the people of Ireland, our mission is to shape the safe and sustainable development of transport, tourism, and sport, to support economic growth and social progress.)
- SEAI - Sustainable Energy Authority of Ireland (SEAI is playing a leading role in transforming Ireland into a society based on sustainable energy structures, technologies and practices.)

EV-specific infrastructure

- SEAI - Sustainable Energy Authority of Ireland (SEAI is playing a leading role in transforming Ireland into a society based on sustainable energy structures, technologies and practices.)
- ESB - Electricity Supply Board (As a strong, diversified, vertically integrated utility, ESB operates right across the electricity market: from generation, through transmission and distribution to supply.)

Use of general infrastructure by EVs



- TII - Transport Infrastructure Ireland (TII's mission is to deliver transport infrastructure and services, which contribute to the quality of life for the people of Ireland and support the country's economic growth.)
- Local authorities

Associations and Companies

Electric Vehicles

- ESB - Electricity Supply Board (As a strong, diversified, vertically integrated utility, ESB operates right across the electricity market: from generation, through transmission and distribution to supply.)

EV-specific infrastructure

- ESB - Electricity Supply Board (As a strong, diversified, vertically integrated utility, ESB operates right across the electricity market: from generation, through transmission and distribution to supply.)

Regulations

Electric Vehicles

- VAT, fuel taxes, vehicle registration taxes
 - Electric vehicle grants:
 - Conventional hybrid EVs: until 31 Dec.2018, these vehicles will be entitled to relief from Vehicle Registration Tax (VRT) up to a maximum of €1500.
 - Plug-in hybrids: until 31 Dec.2018, these vehicles will be entitled to a relief from VRT up to a maximum of €2500.
 - EVs: until 31 Dec. 2021, these vehicles are entitled to a relief from VRT up to max €5000.
 - In addition to the VRT relief above, EVs and plug-in hybrids entitle the buyer to a grant of up to €5000 on purchase until 31 Dec. 2021 for EVs and Dec .2018 for plug-in hybrids (managed by SAEI).

EV-specific infrastructure

- None: There was formerly a tax reduction for installing EV charge points at home, but this was abolished in 2014.

Use of general infrastructure by EVs

- Annual road tax
 - Electric cars pay annual road tax of €120, compared to between €170 and €2350 for other vehicles (depending on CO2 emissions).
 - Electric goods vehicles cars pay annual road tax of €120, compared to between €170 and €2350 for other vehicles (depending on CO2 emissions).

Energy & Electricity



Authorities

- SEAI - Sustainable Energy Authority of Ireland (SEAI is playing a leading role in transforming Ireland into a society based on sustainable energy structures, technologies and practices.)

Associations and Companies

- ESB - Electricity Supply Board (As a strong, diversified, vertically integrated utility, ESB operates right across the electricity market: from generation, through transmission and distribution to supply.)

Regulations

- An EV Customer Billing and Information Technology system that interfaces with existing electricity market regulations is presently undergoing testing it will enable customers to have access to all electricity suppliers.

ICT

Authorities

- Data Protection Commissioner (The office of the Data Protection Commissioner is established under the 1988 Data Protection Act. The Data Protection Amendment Act, 2003, updated the legislation, implementing the provisions of EU Directive 95/46. The Acts set out the general principle that individuals should be in a position to control how data relating to them is used. The Data Protection Commissioner is responsible for upholding the rights of individuals as set out in the Acts, and enforcing the obligations upon data controllers.)

Regulations

- Data Protection Act of Ireland (The Data Protection Act was amended in 2003 to ensure full compliance with the EU Data Protection Directive (95/46/EC).The aim of the Directive is to establish common standards of data protection across Member States in order to protect personal privacy and to ensure the smooth operation of the internal market, while ensuring adequate levels of data protection in countries outside the European Economic Area to facilitate and encourage international trade.)

Strategy, Roadmaps, Initiatives

- ESB, through its 'ecars' programme, is rolling out publicly accessible charging infrastructure and domestic charge points across Ireland. Home chargers are currently supplied free of charge to any person qualifying for a grant under the EV Grant Scheme.
- Targets regarding electric vehicles (PHEVs and EVs): 2020: 230,000 stock
- Targets regarding infrastructure 2020: 25,000 public charging points



Missing Standards:

- At present almost everything is done by ESB, as Ireland's only energy producer and DSO, so interoperability within Ireland (including Northern Ireland where the only public charge point operator ecar NI which is managed by ESB, so there is cross-border interoperability across the island of Ireland).

Table 17: Interoperability in Latvia - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none"> - Ministry of Economics (The aim of the Ministry of Economics is to reach the competitiveness of the national economy at European level. Therefore the Ministry promotes sustainable development of structurally and regionally balanced national economy. The Ministry of Economics coordinates and supervises the systems of national standardization, accreditation, metrology and market supervision. Ministry also plans and manages the provision of measures related to prevention of energy crises.) - Ministry of Finance (Ministry of Finance is the leading state administration institution in the field of finances. It develops financial policy, coordinates and organizes its implementation, as well as performs other functions stated in the external regulatory enactments.) <p>Regulations</p> <ul style="list-style-type: none"> - Incentives <ul style="list-style-type: none"> – Registration Tax Benefits: Electric vehicles are exempt from the registration tax – Ownership Tax Benefits: Tax exemption for BEV's – Local Incentives: Free parking in Liepaja, Bus lane use
Energy & Electricity
<p>Authorities</p> <ul style="list-style-type: none"> - Ministry of Environmental Protection and Regional Development (The Ministry of Environmental Protection and Regional Development of the Republic of Latvia is responsible for implementing policy in three areas - environment protection, regional development as well as information and communication technologies. In the area of environmental protection the Ministry deals with the establishment of prerequisites and conditions for nature conservation, clean environment and ensures that natural resources are used effectively and in sustainable manner.) - Public Utilities Commission PUC (The Public Utilities Commission or the Regulator is institutionally and functionally independent, full-fledged, autonomous body governed by public law which carries out regulation of public services in energy, electronic communications, post, municipal waste management and water management sectors in accordance with the law “On Regulators of Public Utilities” and special legal acts of the regulated sectors.)



Regulations

- Electricity tax exemption (Electricity obtained from the following sources shall be exempt from tax: from RES (renewable energy sources); in hydropower plants; in cogeneration power plants complying with the efficiency criteria laid down in the laws and regulations on electricity generation in the process of cogeneration.)
- Electricity Market Law (The purpose of the Electricity Market Law is: to establish prerequisites for the operation of an efficiently functioning electricity market; to ensure that, taking into account the requirements of regulatory enactments, all electricity users are provided with electricity safely and in good quality, in the most efficient possible way, for justified prices; to ensure that all users have the right to choose an electricity trader freely; to promote the production of electricity by using renewable energy resources; and to promote energy independence ensuring different suppliers of energy resources necessary for the production of electricity.)
- Law on Energy (The purpose of the Energy Law is to ensure efficient, safe and quality energy supply to the consumer in the quantity demanded and for justified prices, diversifying the types of energy resources to be used, increasing the safety of the energy supply and observing the environmental protection requirements; to promote efficient use and balanced consumption of energy; to ensure the right of energy users to choose the type of energy and the merchant; to promote economically justified competition; to determine the procedures for the management of energy industry and the principles for organisation and regulation of operation of energy supply merchants; to facilitate the use of local, renewable and secondary energy resources; to promote the use of environmentally friendly technologies to reduce the impact of energy industry on the environment.)

ICT

Authorities

- Ministry of Environmental Protection and Regional Development (The Ministry of Environmental Protection and Regional Development of the Republic of Latvia is responsible for implementing policy in three areas - environment protection, regional development as well as information and communication technologies.)
- Data State Inspectorate (The Data State Inspectorate oversees personal data protection at local and regional levels.)

Regulations

- Law on Personal Data Protection (The Law on Personal Data Protection was adopted by Parliament on 23 March 2000. It is based on standard fair information practices and is fully compliant with the EU Data Protection Directive 95/46/EC. The aim of this Law is to protect the fundamental human rights and freedoms of natural persons, in particular the inviolability of private life with respect to the processing of personal data. Application of the Law is overseen by the State Data Inspectorate, which is also responsible for spam supervision.)
- Information Technologies Security Law (The Information Technologies Security Law came into force on 1 February 2011. It aims to improve information technologies security by defining the key requirements for organisations to guarantee the security of essential electronic services. The law provides for the identification and protection of critical infrastructure, the establishment



and organisation of an IT Security Incident Response Institution, the determination of conduct in information technology security incidents, the setup of minimum security requirements for state and municipal institutions and the implementation of Directive 2009/140/EC by electronic communications service providers.)

- Electronic Communications Law (The Electronic Communications Law entered into force on 1 December 2004. It aims to promote and regulate the provision of electronic communications services, transposing the EU regulatory framework for electronic communications. The law provides for forms of various electronic networks, including public and private electronic networks. In addition, it provides for the duties and rights of providers, subscribers and users of electronic networks.)

Strategy, Roadmaps, Initiatives

- National Renewable Energy Action Plan NREAP (Under the EU Directive 2009/28/EC member countries of the European Union are obliged to draft and submit to the European Commission National Renewable Action Plans outlining pathway which will allow them to meet their 2020 renewable energy, energy efficiency and GHG cuts targets. Latvia 2020 renewable energy targets: Overall target: 40% of share of energy generated from renewable sources in gross final energy consumption; Heating and cooling: 53% of heat consumption met by renewable sources; Electricity: 60% of electricity demand met by electricity generated from renewable energy sources; Transport: 10% of energy demand met by renewable energy sources.)

Missing Standards:

- Currently there is no cooperation entity.
- Currently no interoperability scheme in place; charging station management and monitoring system is tested.

Table 18: Interoperability in Lithuania - Status Quo

Electromobility

Authorities

- Government of the Republic of Lithuania The Government represents the executive power in Lithuania. It resolves public issues by taking a majority-vote decisions in its sittings. In its work, the Government is guided by the Rules of Procedure of the Government of the Republic of Lithuania.
 - Ministry of Economy (The Ministry of Economy is responsible for handling government business in i.a. the following area: Business environment: issues relating to business development, small and medium-sized companies, supply of capital, entrepreneurship, simplification of rules, reduction of administrative burden on business, general conditions for enterprise growth.)
 - Ministry of Finance (The Ministry of Finance of the Republic of Lithuania is an executive body, the mission of which is to formulate and implement an effective policy of public



finance in order to ensure the country's macroeconomic stability and economic development.)

- Ministry of Transport and Communication of the Republic of Lithuania (The Ministry of Transport and Communications of the Republic of Lithuania is the executive authority. The mission of the Ministry is to develop secure transport and communications services that meet the needs of society. The principal operational goals of the Ministry are to shape public policy, as well as organise, coordinate and oversee its implementation in the following areas: the functioning of the transportation system and the development of all-mode transport infrastructure; road safety for all types of vehicles; combined transportation, transit and logistics.)

Regulations

- Incentives
 - Registration Tax Benefits: Tax reduction - CO2 based tax
 - Local Incentives: Reduced parking fees, Bus lane use in Vilnius

Energy & Electricity

Authorities

- Government of the Republic of Lithuania The Government represents the executive power in Lithuania. It resolves public issues by taking a majority-vote decisions in its sittings. In its work, the Government is guided by the Rules of Procedure of the Government of the Republic of Lithuania.
 - Ministry of Energy of the Republic of Lithuania (The Ministry of Energy of the Republic of Lithuania is a government department of the Republic of Lithuania. Its mission is to prosecute policy of government of Lithuania in fuel, electricity, thermo-energy production and supply for Lithuania economy.)
 - Ministry of Environment of the Republic of Lithuania (The Ministry of Environment is the main managing authority of the Government of the Republic of Lithuania which forms the country's state policy of environmental protection, forestry, utilization of natural resources, geology and hydrometeorology, territorial planning, construction, provision of residents with housing, utilities and housing, as well as coordinates its implementation.)
- Energy Agency (State enterprise Energy Agency was founded in 1993 following the recommendations of foreign experts having participated in drafting the first National Energy Strategy and considering operation of analogous enterprises in European countries. The incorporator of Energy Agency is the Ministry of Energy of the Republic of Lithuania. Under instructions of the Ministry of Energy, Energy Agency deals with drafting the National Energy Strategy, other programs regarding the improvement of efficient use of energy resources and energy and use of local, renewable and waste energy resources; organization of their implementation, updating and revision; preparation of legal, economic and organizational energy efficiency measures for implementation of the national policy. Under the assignment of the Ministry of Energy, Energy Agency is engaged in administration of Ignalina NPP Decommission Fund and the implementation of European Union financial aid in the field of the trans-European energy networks.)



- National Commission for Energy Control and Prices (The National Commission for Energy Control and Prices is the authority regulating the activity of the entities operating in the fields of energy, drinking water supply and waste water treatment and performing the state supervision of the energy sector.)

Regulations

- Law on Energy from Renewable Sources (The Lithuanian Law on Energy from Renewable Sources entered into force on 12 May 2011. The Law transposes EU *acquis communautaire* on the energy sector embodied in following Directives: 2009/28/EC, 2009/72/EC and 2009/73/EC. The Law establishes the legal framework for administration, regulation and control over renewable energy sector in Lithuania. The Law regulates system of Feed-in tariffs. Main objectives of the Law are to ensure sustainable development of the renewable energy sector and to decrease consumption of the fossil fuels. The Law sets the mandatory energy targets to be achieved by 2020: 20% of gross annual energy consumption must come from renewable sources and at least 20% of energy consumption in transport sector must be sources from renewables.)
- Law on Electricity (Law on Electricity of the Republic of Lithuania was adopted on 10 July 2000 and amended in 2004 and 2009. The Law regulates generation, transmission, distribution and supply of electricity in the state. It ensures that the electricity marketed in Lithuania is based on fair competition between electricity producers and suppliers. Law promotes energy efficiency, safe and reliable electricity system, transparent service obligations, internal electricity market, electricity export and renewable energy sources in order to protect natural environment.)
- Law on Energy (The Law on Energy defines renewable energy sources as energy derived from natural resources, such as hydropower, solar and wind energy, biomass energy and energy which flows out from the centre to the surface of the earth, i.e. geothermal energy. The Law on Energy stipulates also that the efficient use of renewable energy resources is to be promoted by the state and under the jurisdiction of the Ministry of Economy.)

ICT

Authorities

- Government of the Republic of Lithuania The Government represents the executive power in Lithuania. It resolves public issues by taking a majority-vote decisions in its sittings. In its work, the Government is guided by the Rules of Procedure of the Government of the Republic of Lithuania.
 - The Ministry of Transport and Communications of the Republic of Lithuania is the executive authority. The mission of the Ministry is to develop secure transport and communications services that meet the needs of society. The principal operational goals of the Ministry are to shape public policy, as well as organise, coordinate and oversee its implementation in the following areas: electronic communications and post; the development of information society and state-owned information resources.
 - Ministry of the Interior of the Republic of Lithuania The Ministry of the Interior exercises public administration functions in the field of public safety, state border protection, state aid during emergencies and civil protection, control of migration processes, reform of the public administration and state governance system, development of local governance,



regional development, creation of civil service system, IT and other fields attributed to the Ministry's competence.

- Information Technology and Communications Department The Information Technology and Communications Department under the Ministry of the Interior of the Republic of Lithuania organises and coordinates the activities of the largest and most advanced Telecommunication Network of the Interior in the Baltic States.

Regulations

- Law on legal protection of personal data (The law on Legal Protection of Personal Data was adopted on 11 June 1996 and last amended on 1 January 2009. Its main purpose is the protection of an individual's right to privacy with regard to the processing of personal data. The law is fully compliant with the EU Data Protection Directive 95/46/EC.)
- Law on Electronic Communications (Adopted in April 2004 and last amended in March 2009, the law regulates electronic communications services and networks, associated facilities and services, the use of electronic communications resources and electromagnetic compatibility. This law transposes the EU regulatory framework for electronic communications.)

Strategy, Roadmaps, Initiatives

- Energy Efficiency Action Plan 2014 (The Action Plan has been drawn up in accordance with the provisions of Directive 2012/27/EU and having regard to Commission Implementing Decision of 22 May 2013 establishing a template for National Energy Efficiency Action Plans under Directive 2012/27/EU of the European Parliament and of the Council. The Action Plan describes important energy efficiency improvement measures and energy savings planned and/or achieved including measures concerning energy supply, transmission and distribution as well as final consumption to attain the national energy efficiency targets.)

Missing Standards:

- Currently, there is not a comprehensive interoperability platform in place
- Currently, there is no national cooperation entity specifically dealing with the interoperability of charging infrastructure in place.



Table 19: Interoperability in Luxembourg - Status Quo

Electromobility

Authorities

- Government of the Grand Duchy of Luxembourg (Luxembourg is a parliamentary democracy headed by a constitutional monarch. Under the constitution of 1868, executive power is exercised by the Grand Duke and the cabinet, which consists of 18 ministers. The Grand Duke has the power to dissolve the legislature.)
 - Ministry of Finance (The Ministry of Finance is responsible for supporting the development of innovative IT tools for the financial sector, such as electronic and/or mobile payment solutions, virtual currencies and financial data analytics tools and services.)
 - Department of Regional Planning - DATer (The DATer is one of the four ministerial departments forming the Ministry of Sustainable Development and Infrastructure. The tasks of DATer are i.a.: General policy on land use planning, Implementation of the master plan and land use planning plans; and the Development, Implementation and monitoring of sectoral master plans and land use plans.)

Regulations

- Transportation Sector Plan - TSP (The Transportation Sector Plan is the regulatory counterpart to the MoDu strategy. The objectives pursued by the TSP and the MoDu strategy are the same, namely to focus on the development of public transport and soft mobility, with the primary objectives being to reach by 2020, on the one hand, a Modal share of 25% of total traffic for soft mobility and 25% of motorized traffic for public transport.)
- Sustainable Mobility - Tax Reform (As a component of tax reform, a range of measures have been introduced to promote sustainable mobility: a new tax deduction on zero-emission privately-owned cars and a reassessment of company car benefits in kind based on the vehicle's greenhouse gas emissions and its air pollution emissions. The government has opted for incentivizing rather than a penalizing approach, as follows: This reform eliminates preferential treatment for diesel fuel; 100% electrical vehicles, bicycles, and pedelecs²⁵ are the big winners of the reform. A tax deduction or a reassessment of benefits in kind for eco-responsible drivers are being put in place.)
- Incentives
 - Purchase Subsidies: Return of tax of 5.000€ for zero-emissions vehicles (BEV and FCEV) on the annual tax declaration
 - Ownership Tax Benefits: Tax reduction - CO2 based tax
 - Company Tax Benefits: The deductibility from corporate income of expenses related to the use of company cars will be calculated on the basis of CO2 emissions. This measure will encourage to buy vehicles with zero or low emissions as a company car.

Energy & Electricity



Authorities

- Government of the Grand Duchy of Luxembourg (Luxembourg is a parliamentary democracy headed by a constitutional monarch. Under the constitution of 1868, executive power is exercised by the Grand Duke and the cabinet, which consists of 18 ministers. The Grand Duke has the power to dissolve the legislature.)
 - Ministry of Economics (The powers of the Ministry of Economy are defined by the Grand-Ducal Decree establishing the ministries. The Ministry of Economy is composed of 8 Directorates-General (DG). DG1: SMEs and entrepreneurship; DG2: Internal Market and Regional Policy; DG3: Industry, logistics and infrastructure; DG4: Competitiveness; DG5: Foreign Trade and Investment; DG6: Energy; DG7: Research, Intellectual Property and New Technologies; DG8 Tourism)
 - Ministry of Sustainable Development and Infrastructure (The government declaration has defined specific objectives for each of the departments that make up the Ministry of Sustainable Development and Infrastructure. The powers of the Ministry of Sustainable Development and Infrastructure are transport, public works, environment and regional planning.)
- Luxemburg Institute for Regulation - ILR (The Regulatory Authority ILR was created to frame the opening of former state monopolies to competition. The Institute's mission is to ensure that competition is real and fair and that all consumers have access to services on reasonable terms.)

Associations and Companies

- Energieageance (The Energieageance offers services in the areas of energy efficiency and renewable energy sources with a focus on consultancy and training. Energieageance is the commercial sign under which the Agence de l'Energie SA carries out its economic activities. The shareholders of energieageance are the State of the Grand Duchy of Luxembourg and Enovos Luxembourg SA.)
- Enovos Luxembourg S.A. (The energy supplier Enovos is now taking up a position as one of the major players on select energy markets in Western Europe, and wishes to offer its customers a genuine alternative through integrated solutions based on a well-planned combination of innovative energy products and services. As the main energy supplier in Luxembourg, Enovos puts a strong emphasis on its environmental responsibility.)

Regulations

- Framework Law concerning rational use of energy - Law of 5 August 1993 (Framework Law concerning rational use of energy: Law of 5 August 1993 provides the legal basis for deployment and renewable energy usage in Luxembourg. The Law sets out energy savings and renewable energy objectives and measures.)

ICT



Authorities

- National Commission for Data Protection - CNPD³³ (The National Commission for Data Protection is an independent authority created by the Act of 2 August 2002 on the protection of individuals with regard to the processing of personal data. It verifies the legality of the processing of personal data and ensures the respect of personal freedoms and fundamental rights with regard to data protection and privacy.)
- State Information Technology Centre - CTIE³⁴ (The Government of Luxembourg established in 2009 the State Information Technology Centre, with the merger of the State Computer Centre (CIE) - established in 1974 - and the eLuxembourg Service (SEL) - formed in 2004. The Centre constitutes an active part of the Ministry of the Civil Service and Administrative Reform and is in charge of the development and updating of a normative framework for IT projects and the modernisation of the state.)

Regulations

- Data Protection Act (The Data Protection Act (2007) constituting the implementation of Directive 95/46/EC regarding the protection of personal data of 2 August 2002 and amended by the law of 27th July 2007 is governing the processing and use of personal data in Luxembourg.)
- eCommunications Act of 30 May 2005 (The new eCommunications Act of 30 May 2005 transposes the EU regulatory framework for electronic communications (Directives 2002/19/EC, 2002/20/EC, 2002/21/EC, 2002/22/EC). This act forms part of Luxembourg's legislative 'telecom package' which also includes a specific law on the processing of personal data in the electronic communications sector. The Act regulates access to electronic communication networks and their interconnection to create a sustainable, competitive environment in this sector, and ensure the interoperability of eCommunications services. It defines the rights of users and the obligations of services and network providers, thereby defining the 'universal service' notion for eCommunications.)

Strategy, Roadmaps, Initiatives

- Targets regarding electric vehicles (PHEVs and EVs): 40,000 stock
- National Plan for Sustainable Development (The Government of Luxembourg on 26 November 2010 adopted Luxembourg's renewed National Plan for Sustainable Development. The new document replaces the previous Plan of 1999.)
- 2030 Agenda for Sustainable Development (In May 2016, the Government Council agreed on a renewed composition of the grand-ducal regulation regarding composition, organisation and functioning of the Commission with the objective having appropriate organizational structures to ensure the implementation of the goals and targets of the 2030 Agenda for Sustainable Development.)
- Strategy for sustainable mobility - MoDu (The Global Strategy for Sustainable Mobility was developed by the Department of Regional Planning and the Mobility Planning Directorate)

³³ In French: Commission Nationale pour la Protection des Données

³⁴ In French: Centre des technologies de l'information de l'Etat



in consultation with the other departments of the Ministry of Sustainable Development and Infrastructure (MDDI) and the Administration of the Roads and Bridges during 2011 and the first quarter of 2012. It presents an integrative approach to the various measures to meet the challenges of mobility and concretizes the projects on the basis of new reflections (In order to reduce budgetary costs while maintaining the principle of giving priority to projects related to public transport.)

Table 20: Interoperability in Malta - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none"> - Ministry for Finance (The Ministry promotes the introduction of policies and programmes that support Malta's financial and fiscal well-being and to contribute to the sustainability of such initiatives.) - Ministry for Transport and Infrastructure (The mission of the Ministry is to promote and develop the transport sector in Malta by means of proper regulation and by the promotion and development of related services, businesses and other interests, both locally and internationally and to enable the effective implementation of programmes and capital infrastructural projects which fall within the remit of the Ministry for Transport and Infrastructure.) <p>Regulations</p> <ul style="list-style-type: none"> - Incentives (In Malta, there are incentives for the following categories: Purchase Subsidies; Registration Tax Benefits; Ownership Tax Benefits; Company Tax Benefits; Local Incentives and Infrastructure Incentives.)
Energy & Electricity
<p>Authorities</p> <ul style="list-style-type: none"> - Malta Resources Authority (The Malta Resources Authority is a public corporate body set up in 2000 through the Malta Resources Act to regulate water, energy and mineral resources, to promote energy efficiency and renewable, and with responsibilities in oil exploration and climate change.) - Ministry for Energy and Water Management (The Ministry is responsible for the Development of Alternative Energy Sources, the Energy Policy, Water Policy and Energy and Water Services.) <p>Associations and Companies</p> <ul style="list-style-type: none"> - The Energy and Water Agency (The Energy and Water Agency is tasked with formulating and implementing Government's national policies in the energy and water sectors, aimed at ensuring security, sustainability and affordability of energy and water supply in Malta.)



Regulations

- National Energy Policy (The National energy policy for Malta was launched in December 2012 after the publication of a first draft in 2009 and the finalisation of a strategic environmental impact assessment in September 2012. It lists decisions and actions that have already been implemented as well as measures aimed at ensuring the sustainability of Malta's energy sector.)

ICT

Authorities

- Office of the Information and Data Protection Commissioner (The mission is to afford individuals with their right to data protection against the violation of their privacy by the processing of personal data, as well as, to facilitate the right to access information held by public authorities to promote added transparency and accountability in government.)
- Malta Communications Authority (The Malta Communications Authority was set up to regulate communications services, which include, fixed and mobile telephony, Internet and TV distribution services.)

Regulations

- Data Protection Act (The Data Protection Act was passed on 14 December 2001 and came fully into force in July 2003. It was introduced in order to render Maltese law compatible with EU Data Protection eGovernment in Malta January 2015 [28] Directive (95/46/EC), even though Malta had not yet been an EU Member State at that time.)
- Electronic Communications Act (In September 2004, the Electronic Communications (Regulation) Act was published in the Government Gazette of Malta (no. 17 652) together with a number of associated acts amending and partially repealing previous telecommunications and related legislation, as well as previously applicable secondary regulations.)

Strategy, Roadmaps, Initiatives

- Malta's Renewable Energy Action Plan (Directive 2009/28/EC requires each Member State to reach a share of renewable energy in gross final energy consumption by 2020. Malta has a target of 10%. The Directive also requires Member States to publish a National Renewable Energy Action Plan (NREAP) explaining how the target shall be achieved. Malta submitted its first NREAP in 2011. However, technological advancement, studies and experience prompted the Government to update Malta's national plan. The document presents a revised National Renewable Energy Action Plan for Malta, incorporating new priorities, projects and initiatives put forward for the energy sector.)
- Energy efficiency target declared by Malta under the EU Directive 2012/27/EU (Malta's indicative national energy efficiency target for 2020 is 22% reduction of primary energy.)
- Malta Indicative National Energy Efficiency Target for 2020 in accordance with Article 3 of Directive 2012/27/EU (Article 3 of Directive 2012/27/EU provides for the establishment of an indicative national energy efficiency targets for 2020 in each member state. This national energy efficiency target has to be based on primary or final energy consumption, primary or



final energy savings or energy intensity.)

- National Renewable Action Plan NREAP Malta (Under the EU Directive 2009/28/EC member countries of the European Union are obliged to draft and submit to the European Commission National Renewable Action Plans (NREAPs) outlining pathway which will allow them to meet their 2020 renewable energy, energy efficiency and GHG cuts targets. Malta 2020 targets: Overall target: 10% of share of energy generated from renewable sources in gross final energy consumption; Heating and cooling: 6% of heat consumption met by renewable sources; Electricity: 14% of electricity demand met by electricity generated from renewable energy sources; Transport: 11% of energy demand met by renewable energy sources.)

Missing Standards:

- Interoperability enabled within the national charging points network

Table 21: Interoperability in the Netherlands - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none">- The government of the Netherlands (The government of the Netherlands includes the King and the Ministers. The Cabinet of the Netherlands includes the Ministers and the State Secretaries.)<ul style="list-style-type: none">- The Minister for Economic Affairs (The Ministry of Economic Affairs promotes: A competitive business climate. By abolishing unnecessary regulation and creating business-friendly fiscal policy; Specific policy for innovation and enterprise to support businesses in areas where it is really necessary. This makes the ministry of Economic Affairs the central access point for government information and services in the area of innovation, export and financing. Additional attention is paid to creating favourable conditions for key areas like chemicals, water and energy; A world-class agri-food sector, that can be further strengthened through investment in innovation and sustainability; Support for Dutch business abroad. Through economic diplomacy, for example, and assistance from embassies and consulates; Clean, reliable energy. Clean energy is not only essential, it is also a prime export product; Business practices that take nature and animal welfare into account. This creates a balance between economy and ecology.)- The Ministry of Infrastructure and the Environment (The Ministry of Infrastructure and the Environment is committed to improving quality of life, access and mobility in a clean, safe and sustainable environment. The Ministry strives to create an efficient network of roads, railways, waterways and airways, effective water management to protect against flooding, and improved air and water quality.)- Ministry of Finance (The Ministry of Finance guards the national treasury and works towards ensuring the Netherlands is financially healthy and prosperous. The Ministry of Finance oversees the responsible and effective spending of government resources, makes rules to ensure a stable financial system and oversees the quality of financial



institutions. The Ministry of Finance also works on equitable and solid tax legislation. The Dutch Tax Administration, part of the Ministry of Finance, levies and collects taxes.)

Associations and Companies

- Netherlands Enterprise Agency (Netherlands Enterprise Agency encourages entrepreneurs in sustainable, agrarian, innovative and international business. It helps with grants, finding business partners, know-how and compliance with laws and regulations. The aim is to improve opportunities for entrepreneurs and strengthen their position. Netherlands Enterprise Agency is part of the Ministry of Economic Affairs and works at the instigation of ministries and the European Union. Some activities of the Commodities Boards are also included. The Agency works in The Netherlands and abroad with governments, knowledge centres, international organisations and countless other partners.)

Regulations

- Car and motorcycle taxes (If you register a car, motorcycle or light goods vehicle in the Netherlands, you must pay car and motorcycle tax (bpm) on it. You must also pay bpm if you live in the Netherlands and drive or ride an unregistered car or motorcycle. If you own a car, light goods vehicle, motorcycle, heavy goods vehicle or bus you must also pay motor vehicle tax (mrb).)
- Incentives
 - Registration Tax Benefits
 - Zero emission cars are exempt from paying registration tax. For other cars the system is progressive, with 5 levels of CO2 emissions that pay different amounts of registration tax. Plug-in hybrid cars go to level 1, 1-79 gr CO2/km and pay € 6 per gram. For level 2, 80-106 gr CO2/km the tariff is € 69 per gram CO2. The final level is € 476 per gram for 174 gr CO2/km or over.
 - Ownership Tax Benefits
 - Road tax: Zero emission cars are exempt from paying road taxes. Plug-in hybrid cars (< 51 gr CO2/km) pay 50% of the road tax for a regular car.
 - Company Tax Benefits
 - Surcharge on income tax for the private use of company cars: In the Netherlands, income tax has to be paid on the private use of a company car. This is done by imposing a surcharge of 4-25% of the catalogue value on the taxable income. For zero emission cars this percentage is 4%. For most plug-in hybrids the percentage is 15% (< 51 gr CO2/km), the next level (51 – 106 gr CO2/km) is 21%. Over that, 25% is imposed.
 - Tax deductible investments: The Netherlands has a system of facilitating investments in clean technology, by making these investments partially deductible from corporate and income taxes. Zero emission and plug-in hybrid (and not with a diesel engine) cars are on the list of deductible investments, as are the accompanying charging points.



Energy & Electricity

Authorities

- The Minister for Economic Affairs (The Ministry of Economic Affairs promotes: A competitive business climate. By abolishing unnecessary regulation and creating business-friendly fiscal policy; Specific policy for innovation and enterprise to support businesses in areas where it is really necessary. This makes the ministry of Economic Affairs the central access point for government information and services in the area of innovation, export and financing. Additional attention is paid to creating favourable conditions for key areas like chemicals, water and energy; A world-class agri-food sector, that can be further strengthened through investment in innovation and sustainability; Support for Dutch business abroad. Through economic diplomacy, for example, and assistance from embassies and consulates; Clean, reliable energy. Clean energy is not only essential, it is also a prime export product; Business practices that take nature and animal welfare into account. This creates a balance between economy and ecology.)
- Ministry of Finance (The Ministry of Finance guards the national treasury and works towards ensuring the Netherlands is financially healthy and prosperous. The Ministry of Finance oversees the responsible and effective spending of government resources, makes rules to ensure a stable financial system and oversees the quality of financial institutions. The Ministry of Finance also works on equitable and solid tax legislation. The Dutch Tax Administration, part of the Ministry of Finance, levies and collects taxes.)<https://www.government.nl/ministries/ministry-of-finance>

Regulations

- Energy Agreement for Sustainable Growth (The Energy Agreement for Sustainable Growth, concluded by the government with employers, trade unions, environmental organisations and others, contains provisions on energy conservation, boosting energy from renewable sources and job creation. The government regards this agreement as a major step towards a fully sustainable energy supply.)
- Main principles of energy policy (The government wants to see a mix of energy from renewables (like wind and solar) and traditional sources, such as oil, gas and coal. A mix of sources increases the reliability of the energy supply, while keeping bills for consumers and businesses under control.)
- Energy tax (The government wants people to use energy more sparingly and efficiently, so it taxes the use of electricity and natural gas. Tax makes energy more expensive, which encourages people to use less energy.)

ICT

Authorities

- The Minister for Economic Affairs (The Ministry of Economic Affairs promotes: A competitive business climate. By abolishing unnecessary regulation and creating business-friendly fiscal policy; Specific policy for innovation and enterprise to support businesses in areas where it is really necessary. This makes the ministry of Economic Affairs the central access point for government information and services in the area of innovation, export and financing. Additional



attention is paid to creating favourable conditions for key areas like chemicals, water and energy; A world-class agri-food sector, that can be further strengthened through investment in innovation and sustainability; Support for Dutch business abroad. Through economic diplomacy, for example, and assistance from embassies and consulates; Clean, reliable energy. Clean energy is not only essential, it is also a prime export product; Business practices that take nature and animal welfare into account. This creates a balance between economy and ecology.)

Regulations

- Personal Data Protection (The Personal Data Protection Act was adopted by the Dutch Parliament in July 2000 and came into force on 1 September 2001. It sets the rules for recording and using personal data, and furthermore implements the EU data protection legislation. The Act is overseen and enforced by the Data Protection Authority.)

Strategy, Roadmaps, Initiatives

- Targets regarding electric vehicles (PHEVs and EVs) 2020: 200,000 stock
- Targets regarding infrastructure (this number includes both semi-public and public charging points and fast-charging points) 2020: 70,000 publicly accessible charging points
- Digital agenda for the Netherlands innovation, trust, acceleration (The agenda is about actions for the further digitisation of the Dutch economy: education, knowledge and innovation, open and high-speed infrastructure, security and trust, more scope for entrepreneurs, digitisation of sectors)
- Electric Transport Green Deal 2016-2020 (The Deal is about curtailing our dependency on fossil energy; use businesses, members of the public, and civil society organisations to leverage these societal dynamics for green growth, as effectively as possible; to work with the government to further green growth; the scope of a Green Deal that can be increased without the need for specific support from central government.)

Table 22: Interoperability in Poland - Status Quo

Electromobility

Authorities

- Government of Poland (The Government governs Poland and is the driving force in the process of legislative change, thereby influencing the development of the society. The Government consists of a prime minister, three deputy prime ministers and 18 ministers.)
- Ministry of the Environment (Through its input into national policies, the Ministry of the Environment fosters the environment both domestically and globally, and ensures the long-term, sustainable national development with respect of natural heritage and human rights to meet the needs of both the present and the future generations.)



Associations and Companies

- Central Statistical Office of Poland (The Central Statistical Office is Poland's chief government executive agency charged with collecting and publishing statistics related to the country's economy, population, and society, at the national and local levels.)

Energy & Electricity

Authorities

- Government of Poland (The Government governs Poland and is the driving force in the process of legislative change, thereby influencing the development of the society. The Government consists of a prime minister, three deputy prime ministers and 18 ministers.)
- Ministry of Energy (The Ministry of Energy provides proper support for the Minister of Energy on the basis of the Prime Minister of 9 December 2015. On the detailed scope of the Minister of Energy (Dz. U. item. 2087) for matters falling within: energy and management of mineral deposits.)
 - Department of Energy (The Department of Energy is part of the Ministry of Energy and responsible for the tasks: related to the preparation and coordination of the implementation of the Polish energy policy; associated with the preparation of legal and regulatory environment in terms of power sector and heat; safety-related operation of the national power system, district heating, cogeneration, energy efficiency, development of clean coal technologies and intelligent infrastructures; with the rules on environmental protection, including the reduction of greenhouse gas emissions from the energy sector; related to programming and conducting statistical surveys and preparation of statistical data for the work carried out in the Department.)

Associations and Companies

- Energy Regulatory Office (The Energy Regulatory Office is a central body of state administration nominated on the basis of the Energy Law (The Energy Law Act of 10 April 1997; Journal of Law of 1997, No. 54 item 348, as amended), responsible for regulation in energy sector as well as promotion of competition. The ERO regulates activities of energy enterprises aiming to balance interests of energy companies and customers.)
- Polish National Energy Conservation Agency - KAPE (The Polish National Energy Conservation Agency is a national leader in the area of efficient energy management. Our business is based on four main pillars: comprehensive and independent advice and audits in the industry, designing modern buildings and audits in construction, wide range of services to local government and low-carbon economy plans, national and international educational projects, which are an expression of our social responsibility in business.)
- Agencja Rynku Energii SA – ARE (Agencja Rynku Energii SA was established on February 24, 1997 in order to conduct statistical surveys and system analyses, including economical simulations in the field of energy management.)

Regulations

- Energy Law Act (The Energy Law Act of 10 April of 1997 (with later amendments) established



the basis for third party access, independent electricity and gas system, independent power producers, renewable energy sources, least cost planning, integrated resource planning, energy regulatory authority, high efficiency heat and power production, demand side management and energy efficiency labels.)

ICT

Authorities

- Government of Poland (The Government governs Poland and is the driving force in the process of legislative change, thereby influencing the development of the society. The Government consists of a prime minister, three deputy prime ministers and 18 ministers.)
 - Ministry of Infrastructure and Construction³⁵ (The Ministry of Infrastructure and Construction is responsible for construction and infrastructure in Poland. It was created in late 2015 from the split of the Ministry of Infrastructure and Development.)
 - Ministry of Digital Affairs (The mission of the ministry is to create a digital boost for the development of Poland. The main tasks of the new ministry are to develop broadband infrastructure, support the creation of web content and e-services and promote digital competences among citizens. Digitization is also key to modern administration.)

Associations and Companies

- Centre for Informatics Technology – COI (The Centre for Informatics Technology is a government digital organization established by the Ministry of Digital Affairs. It is a think tank, a centre of digital skills and a public institution in one.)

Regulations

- Act on the Protection of Personal Data (The Act on the Protection of Personal Data was adopted on 29 August 1997 and was amended three times in the course of 2004. This Act follows the rules established by European Union's Directive 95/46/EC on the protection of individuals with regard to the processing of personal data.)
- Act on electronic payment instruments (Adopted on 12 September 2002, this Act implements the EU Directive 2000/46/EC on the taking up, pursuit of and prudential supervision of the business of electronic money institutions. The Act defines an 'electronic payment instrument' as every payment instrument (including that with a remote access to fund resources) enables its holder to perform operations by means of an electronic device or renders possible the electronic identification of the holder, necessary in order to perform an operation.)

Strategy, Roadmaps, Initiatives

- Polish National Reform Programme NRP (The National Reform Programme is a document which presents the response of Poland to the challenges to be faced in the upcoming years. The NRP has been structured so as to correlate the Polish developmental targets with the priorities identified in the Europe 2020 Strategy, i.e.: Smart growth: developing an economy



based on knowledge and innovation; Sustainable growth: promoting a more resource efficient, greener and more competitive economy; Inclusive growth: fostering a high-employment economy ensuring economic, social and territorial cohesion.)

Missing Standards:³⁶

- Act on Electromobility is still in preparation³⁷
- National cooperation entity
- This country currently has no incentives.

Table 23: Interoperability in Portugal - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none">- The Portuguese government (The Government conducts the country's general policy and directs the Public Administration, which implements the State's policy. The Government possesses legislative, administrative and political functions, which include proposing laws (on the matters which the Constitution places within the competence of the Assembly of the Republic), drafting laws (in the areas for which competence pertains to the Government itself) and drawing up regulations designed to make it possible to actually implement laws. In addition, the Government also represents the Portuguese State, particularly on the international level, negotiating with other states or international organisations.)
<p>Associations and Companies</p> <ul style="list-style-type: none">- INTELI³⁸ (INTELI is a Portuguese think tank with the shareholders "Institute to support SMEs and Innovation" (IAPMEI) and the "Engineering Centre for the Automotive Industry" (CEIIA). The mission is to contribute to a creative and innovative society, envisaging a sustainable economic and social development.)- Mobi.E (The MOBI.E electric mobility model, the largest EV-related effort in Portugal, was developed by INTELI, as a fully integrated and totally interoperable system of electric vehicle charging infrastructure, service providers, and intelligent electric grid management. The Programme for Electric Mobility in Portugal proposes an innovative and unique model conceived with an open-access and market-oriented philosophy, with the goal of attracting private investors and benefiting the users, promoting a fast expansion of the system.)
<p>Regulations</p> <ul style="list-style-type: none">- The Law 7-A/2016 (March, 30th) (The Law defines the State Budget amounts and rules for the

³⁶ Source: <http://www.ceelegalblog.com/2017/04/the-roadmap-for-deployment-of-e-mobility-charging-infrastructure-in-poland/>

³⁷ On 20 September 2016, the Minister of Energy released the National Policy Framework for Alternative Fuels Infrastructure Development for public consultation. (<https://www.noerr.com/en/newsroom/News/polish-government-presents-its-plan-for-electromobility-development.aspx>)

³⁸ In Spanish: Inteligência em Inovação - Centro de Inovação



year 2016. Under that Law, all the previous rules concerning electric vehicles are maintained. After January 1st, 2017, the fiscal incentives should be € 1125 for a new electric vehicle, € 562.50 for an hybrid plug-in and € 500 for a quad cycle.)

- Green Fiscal Reform by Law 82-D/2014 (December, 31st) (Describes the incentive for a new electric vehicle (without previous registration) when an old vehicle is delivered for End-Of-Life dismantling.)

Energy & Electricity

Authorities

- ERSE (Energy Services Regulatory Authority)

Associations and Companies

- Rede Eléctrica Nacional, S.A. - REN (REN operates in two major business areas: The transmission in very high voltage electricity and overall technical management of the National Electricity System; The transport of high-pressure natural gas and overall technical management of the National Natural Gas System, guaranteeing the reception, storage and regasification of LNG and underground storage of natural gas.)
- Agência para a Energia - ADENE³⁹

Regulations

- National Strategy for Energy - ENE 2020 (The “ENE 2020” defines an agenda for competitiveness, economic growth, and energy and financial independence of Portugal through the investment in renewable energies and the integrated promotion of energy efficiency, ensuring the security of supply and the economic and environmental sustainability of the energy model.)

ICT

Authorities

- Portuguese Data Protection Authority – CNPD⁴⁰ (The CNPD is an independent body, with powers of authority throughout national territory. It is endowed with the power to supervise and monitor compliance with the laws and regulations in the area of personal data protection, with strict respect for human rights and the fundamental freedoms and guarantees enshrined in the Constitution and the law.)

Associations and Companies

- TICE.MOBILIDADE (The company develops products and services for the mobility market, catalyzes the consortium companies and other partners to create web-based services.)

Regulations

³⁹ Agência para a Energia é a Agência Nacional de Energia, associação de direito privado, sem fins lucrativos e de Utilidade Pública, que tem como missão o desenvolvimento de atividades de interesse público na área da energia, do uso eficiente da água e da eficiência energética na mobilidade.

⁴⁰ In Portuguese: Comissão Nacional de Protecção de Dados



- Directive 2002/58/EC (Overview of data protection in Portugal)
- Law on the Protection of Personal Data (Law no. 41/2004, of 18 August transposes into national law Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector, except for Article 13 which concerns unsolicited communications. This legislation applies to the processing of personal data within the context of publicly available electronic communications services and networks, while complementing the provisions of Law no. 67/98 of 26 October (Law on the Protection of Personal Data). Its provisions shall ensure protection of the legitimate interests of subscribers who are legal entities to the extent that such protection is consistent with their nature.)

Strategy, Roadmaps, Initiatives

- Targets regarding electric vehicles (PHEVs and EVs): 2020: 200,000 stock
- National Strategy for Energy - ENE 2020 (The “ENE 2020” defines an agenda for competitiveness, economic growth, and energy and financial independence of Portugal through the investment in renewable energies and the integrated promotion of energy efficiency, ensuring the security of supply and the economic and environmental sustainability of the energy model.)

Table 24: Interoperability in Romania - Status Quo

Electromobility

Authorities

- Romanian Government (The Government is the public authority of executive power that functions on the basis of the vote of confidence granted by Parliament, ensures the achievement of the country's domestic and foreign policy and that exercises the general leadership of public administration. The Government is appointed by the President of Romania on the basis of the vote of confidence granted to the Government by Parliament.)
- Ministry of Economy, Trade and the Business Environment (The Ministry deals with strategic policy making, regulation and implementation in the field of industry, mineral resources, energy, trade, SMEs, cooperatives and the business sector, supporting the internal market development and internationalisation for economic growth. In addition, the ministry has a representation function in international fora and ensures Romania's compliance with European and international norms. The Ministry is also in charge of managing national and EU public funds.)
- Ministry of Transportation and Infrastructure (One of the main tasks of the Ministry of Transport is to prepare the legislative framework for transport, management and use of transport infrastructure and make this infrastructure available to users.)

Regulations

- Incentives (Order no. 955/2016)



- Purchase Subsidies:
 - 4.450 Euro (20.000 RON) for the electric car (100%)
 - 1.100 Euro (5.000 RON) for the hybrid car
- Registration Tax Benefits: Electric and hybrid vehicles are exempt from the registration tax
- Ownership Tax Benefits: Tax reduction - CO2 based tax
- Infrastructure Incentives: A refund of maximum 2.500 euro for Stations < 22kW and 30.000 euro for Stations > 22kW. Eligible are cities over 50 000 citizens.

Energy & Electricity

Authorities

- Romanian Government (The Government is the public authority of executive power that functions on the basis of the vote of confidence granted by Parliament, ensures the achievement of the country's domestic and foreign policy and that exercises the general leadership of public administration. The Government is appointed by the President of Romania on the basis of the vote of confidence granted to the Government by Parliament.)
 - Ministry of Energy (Ministry of Energy is replacing the former Ministry of Energy, Small Medium Enterprises and Business Environment and its responsibilities include: managing the public assets in the energy sector; elaborating of national energy policy and strategy and the implementation of government policy in the energy sector; determining and defining the objectives of the energy sector and the best ways of achieving such objectives in the medium or long-term; determining the energy policy for stimulating investment and development activities in the sector; initiating legislative projects in the electricity sector; supervising the application of and compliance with environmental protection measures; and monitoring compliance with EU obligations and requirements.)
- Romanian Energy Regulatory Authority ANRE⁴¹ (Regulatory authorities for both electricity and natural gas sectors were established in Romania (the electricity regulator ANRE in 1998 and the natural gas regulator ANRGN in 2000) with the mission to create and implement the appropriate regulatory system to ensure the proper functioning of the electricity and natural gas sector and markets. In 2007, the two regulatory bodies merged under the name of the ANRE and in 2010 ANRE took over the activity of the Romanian Agency for Energy Conservation (ARCE), therefore assuming the responsibility to monitor and implement energy efficiency measures and promote the use of renewable energy sources to the final consumer. Under the new laws ANRE is an autonomous administrative body under Parliamentary control, entirely self-financed and independent as regards its decision-making process, organisation and functioning, whose scope of activity is to issue, approve and monitor the implementation of the national-wide binding regulatory framework required for the proper functioning of the electricity, heat and natural gas sectors and markets in terms of efficiency, competition, transparency and consumer protection.)

Regulations

⁴¹ In Romanian: Autoritatea Națională de Reglementare în domeniul Energiei



- Electricity and Natural Gas Law No. 123/2012 (The principles of the Romanian electricity market are set out in the Electricity and Natural Gas Law No. 123/2012.)
- Law no. 121/2014 on energy efficiency (The Law transposes the European Union regulations set out under Directive 2012/27/EU regarding energy efficiency, into national legislation. The main purpose of the Law is to establish a coherent legislative framework for the development and application of the national energy efficiency policy in order to achieve the national target for increasing energy efficiency.)

ICT

Authorities

- Romanian Government (The Government is the public authority of executive power that functions on the basis of the vote of confidence granted by Parliament, ensures the achievement of the country's domestic and foreign policy and that exercises the general leadership of public administration. The Government is appointed by the President of Romania on the basis of the vote of confidence granted to the Government by Parliament.)
 - Ministry of Communications and Information Society The Ministry aims to develop an information society in Romania and is responsible for the development of the Digital Agenda.
- National Authority for Management and Regulation in Communications - ANCOM (The National Authority for Management and Regulation in Communications is the body that protects the interests of the communications users in Romania, by promoting competition in the communications market, ensuring the management of scarce resources and encouraging innovation and efficient investments in infrastructure. The institution that regulates the Romanian electronic communications sector today resulted from the merger of two bodies with experience and expertise in the relevant field of management and regulation: The Inspectorate General for Communications and Information Technology IGCTI and the National Regulatory Authority for Communications and Information Technology ANRCTI.)

Associations and Companies

- Association of Electronic Payments in Romania - APERO (Association of Electronic Payments in Romania is the representative of the industry of electronic payments in Romania and the main voice of the ecosystem of payments.)

Regulations

- Law no 506/2004 on the Processing of Personal Data and the Protection of Privacy in the Electronic Communications Sector (This Law on the processing of personal data and the protection of privacy in the electronic communications sector replaced Law no. 676 of 21 November 2001 on the Processing of Personal Data and the Protection of Privacy in the Telecommunications Sector. It closely follows Directive 2002/58/EC on personal data processing and privacy protection in the electronic communications sector.)

Strategy, Roadmaps, Initiatives

- Romanian National Energy Efficiency Action Plan 2014 – 2020 (The National Energy Efficiency



Action Plan (NEEAP) set out estimated energy consumption, planned energy efficiency measures, and the improvements individual EU countries expect to achieve.)

- Energy Strategy 2016-2030 (The Romanian Ministry of Energy has published its Energy Strategy 2016-2030, including an outlook until 2050. The roadmap is based on five strategic objectives and the roadmap's authors also propose several key areas. In 2007, Romania adopted a National Energy Strategy which will last until 2020.)
- National Strategy for Romanian Digital Agenda 2020 (The National Strategy for Romanian Digital Agenda 2020(government decision HG 245/2015) represents Romania's broadband strategy. Broadband and digital services infrastructure is one of the four action fields defined in the strategy. The Romanian Strategy aims at achieving coverage of 100% households with fixed broadband by 2020, 80% households with access to over 30 Mbps broadband and 45% households with subscriptions over 100 Mbps.)

Missing Standards:

- Currently, there is no interoperability platform in use.
- There is no national cooperation entity in place.
- The authorities are currently working on the financing guide for investments in charging infrastructure.

Table 25: Interoperability in Slovakia - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none"> - Government of the Slovak Republic (The Government of the Slovak Republic (SR) is the head of the Executive. As the chief formulator of the nation's public policy under the SR Constitution, the Government has the authority to make major policy on the matters of national economy and social security. Acting in the best interests of the nation, it is responsible for meeting the Government programme objectives within the scope of the adopted national budget. The main functions of the Government also include making proposals on the state budget, preparing the annual closing balance sheet, and issue government regulations and decrees under power given to it by law.) <ul style="list-style-type: none"> – Ministry of Transport, Construction and Regional Development - MDVRR (The MDVRR is responsible for several task according Transport, Construction and Regional Development. Also the Ministry is Product Contact Point for Construction according to Regulation (EU)No 305/2011 of the European Parliament and of the Council laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, Art. 10.) – Ministry of the Environment (The Ministry of the Environment was re-established as of 2 November 2010 to function as the central state administrative authority and supreme inspection authority in environmental affairs. To guarantee and inspection activity of the Government of the Slovak Republic, the Ministry of the Environment coordinates the



activities of all Ministries and other central state administrative authorities of the Slovak Republic in environmental matters.)

- Ministry of Finance - MF SR (The Ministry of Finance of the Slovak Republic is a central body of state administration responsible for the areas of finance, taxes and fees, customs, financial control, internal audit and government audit. The Ministry of Finance of the Slovak Republic is also a central body of state administration responsible for the informatisation of society, coordination of state aid in the area of pricing and price control, except for the pricing and price control of the goods regulated by separate laws.)
- Ministry of Interior (Ministry of Interior of the Slovak Republic is a central body of state administration for protecting the constitutional system, public order, security of persons and property, protection and administration of the state's borders, the safety and fluency of road traffic and other.)

Associations and Companies

- Slovak Electric Vehicle Association – SEVA (Slovak Electric Vehicle Associations was established on 17 April 2012 in Bratislava with the aim to represent and promote the development of transport and transport infrastructure for personal and commercial electric vehicles in Slovakia. The founding companies decided to establish the association to create an effective platform for communication and cooperation between general government, educational institutions, companies and foreign partners. Its aim is to initiate and participate in the preparation of fundamental materials, legislation and projects for development of electromobility.)

Regulations

- Incentives (Purchase Subsidies: 5000€ BEV, 3000€ PHEV, available until the end of 2017; Registration Tax Benefits: BEV pays the lowest (33€) rate of tax on motor vehicle; Local Incentives: Parking discounts on selected cities)

Energy & Electricity

Authorities

- Government of the Slovak Republic (The Government of the Slovak Republic (SR) is the head of the Executive. As the chief formulator of the nation's public policy under the SR Constitution, the Government has the authority to make major policy on the matters of national economy and social security. Acting in the best interests of the nation, it is responsible for meeting the Government programme objectives within the scope of the adopted national budget. The main functions of the Government also include making proposals on the state budget, preparing the annual closing balance sheet, and issue government regulations and decrees under power given to it by law.)
 - Ministry of Economy (The Ministry of Economy of the Slovak Republic is a central body of state administration of the Slovak Republic for i.a.: industry with the exception wood processing, biotechnologies, food industry and construction products, power engineering inclusive nuclear fuel management and storage of nuclear waste and power effectiveness and heat and gas manufacture.)



Associations and Companies

- Regulatory Office for Network Industries (The regulated activities cover generation, transmission, distribution and supply of electricity and the related services, performance of the short-term electricity market administrator's activities and other.)
- Slovak Innovation and Energy Agency - SIEA (The Slovak Innovation and Energy Agency has been established by the Ministry of Economy of the Slovak Republic as a professional state subsidy organization which makes an important contribution in the achievement of governmental energy policy objectives, principally by promoting energy efficiency, new energy technologies and renewables.)

Regulations

- Energy Policy of the Slovak Republic (The Energy Policy of the Slovak Republic is the strategic document defining the energy sector's primary objectives and priorities to 2035 with a view to 2050. The Energy Policy is a component of Slovakia's national economic strategy given that ensuring sustainable economic growth is conditioned by the reliable supply of price-competitive energy.)
- Act 79/2015: Waste (Unless provided otherwise in this subpart, the general provisions of this Act shall apply to the processing of waste electrical and electronic equipment (elsewhere referred to as "WEEE"), the management of WEEE and the management of waste from the processing of WEEE.)

ICT

Authorities

- Government of the Slovak Republic (The Government of the Slovak Republic (SR) is the head of the Executive. As the chief formulator of the nation's public policy under the SR Constitution, the Government has the authority to make major policy on the matters of national economy and social security. Acting in the best interests of the nation, it is responsible for meeting the Government programme objectives within the scope of the adopted national budget. The main functions of the Government also include making proposals on the state budget, preparing the annual closing balance sheet, and issue government regulations and decrees under power given to it by law.)
 - Ministry of Finance of the Slovak Republic (The Ministry of Finance of the Slovak Republic is a central body of state administration responsible for the areas of finance, taxes and fees, customs, financial control, internal audit and government audit. The Ministry of Finance of the Slovak Republic is also a central body of state administration responsible for the informatisation of society, coordination of state aid in the area of pricing and price control, except for the pricing and price control of the goods regulated by separate laws.)
- Office for Personal Data Protection of the Slovak Republic (The Office for Personal Data Protection of the Slovak Republic is an independent state authority which performs the supervision of data protection and contributes to the protection of your fundamental rights and freedoms with regard to the processing of yours personal data.)



- National Security Authority (The National Security Authority is the central government body for Protection of Classified Information, Cryptographic Services, Trust Services and Cyber Security.)

Regulations

- Act No. 211/2000 on Free Access to Public Information (The Act on Free Access to Information, which came into force on 1 January 2001, defines the term 'public information' and establishes a general principle of free and unlimited access. Under the Act, any person or organisation can request information held by state agencies, municipalities and private organisations that make public decisions. The body has to respond no later than 10 days after receipt of the request and to keep a registry of requests.)
- Legislative intent of the Information Security Act (A legislative intent of the Information Security Act was approved by the Government Resolution No. 136/2010. The main purpose is to determine the basic structure and the substantive focus of information security, which ensure a sufficient level of protection throughout the information space in Slovakia. The Act is scheduled to enter into force in 2014.)
- Act No. 122/2013 on Personal Data Protection (This legislation (1 July 2013) implements the principles set in the EU's Data Protection Directive (95/46/EC). Under this Act, individuals can access and correct personal information held by public and private bodies. The Act is enforced by the Office for Personal Data Protection.)
- Act No. 610/2003 on Electronic Communications (The Act on Electronic Communications, which entered into force on 1 January 2004, transposes to Slovak Law the EU's New Regulatory Framework for electronic communications: Directive No. 2002/58/EC on Privacy and Electronic Communication, Authorisation Directive No. 2002/20/EC, Access Directive No. 2002/19/EC, Universal Service Directive No 2002/22/EC and Framework Directive No. 2002/21/EC.)

Strategy, Roadmaps, Initiatives

- National Policy Framework for Alternative Fuels Market Development (The Draft National Policy Framework for Alternative Fuels Market Development is being submitted by the Ministry of Economy of the SR in cooperation with the Ministry of Transport, Construction and Regional Development of the SR in relation to Article 3 of Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure. The aim of the document is to use the determined measures to support the development of the alternative fuels market in the area of transport and the development of the relevant infrastructure.)
- Strategy for Slovak industry development for the 21st century (The basic framework for competitiveness policy in advanced states consists basically of three areas: strengthening and consolidation of macroeconomic stability and equilibrium, reforming and completion of the institutional environment having a significant impact on the conduct of companies and application of certain specific policies, indirectly conducive to growth in competitiveness through selected, especially horizontally cross-sectional areas of the economy.)



Table 26: Interoperability in Slovenia - Status Quo

Electromobility

Authorities

- Government of the Republic of Slovenia (The Government is the supreme body of executive power. The Government consist of the Prime Minister, 3 Deputy Prime Ministers and 13 Ministries.)
 - Ministry of the Environment and Spatial Planning (Strategically important long-term directions and goals of the Ministry concerning environmental protection are aimed at preventing or mitigating adverse impacts presenting a threat to sustainable development. The Environmental Protection Act constitutes the regulatory framework for the environment in Slovenia. Moreover, the Resolution on the National Environmental Protection Programme brings forward the following four key areas: climate change, nature and biodiversity, quality of life, and waste and industrial pollution.)
 - Inspectorate for the Environment and Spatial Planning – IRSOP (The Inspectorate of the Republic of Slovenia for the Environmental and Spatial Planning is an administrative body affiliated to the Ministry of the Environment and Spatial Planning. It operates autonomously and independently in accordance with the rules laid down by the Constitution, laws and regulations.)
 - Slovenian Environmental Public Fund - Eco Fund (The Eco Fund is an independent legal entity, with the Ministry of the Environment and Spatial Planning, being represented as majority in the Supervisory Board. Eco Fund's main purpose is to promote development in the field of environmental protection. It is the only specialised institution in Slovenia that provides financial supports for environmental projects.)
 - Ministry of Finance (Priorities of the Ministry are the fiscal consolidation in order to bring the deficit below 3 per cent of GDP and debt below 60 per cent of GDP, reducing expenditure, continuing the overhaul of the banking sector, which should be based on corporate restructuring and an active approach within banks, implementing a taxation policy that will support economic measures promoting growth and employment; the first focus will be on more effective collection of existing taxes and measures to reduce the grey economy, setting up an effective structure and improving administrative skills for the absorption of EU funds.)
 - Ministry of Economic Development and Technology (One of the priorities of the Ministry are the structural overhaul of the corporate sector and lowering business contributions to establish conditions for a gradual reduction on labour-related costs, enabling greater cost competitiveness of the Slovenia economy through green budget reform, while improving the state of the environment and promoting foreign investment.)

Regulations

- Incentives
 - Purchase Subsidies (Subsidies are available for persons and companies):
 - 7.500 EUR for the BEV M1



- 4.500 EUR for the BEV N1 and L7e
- 4.500 EUR for the PCEV M1 and N1 and for the vehicles with the range extender
- 3.000 EUR for the BEV L6e
- Registration Tax Benefits: BEV's pay the lowest (0,5%) rate of tax on motor vehicle
- Ownership Tax Benefits: Exemption from the payment of annual fees for the use of roads for BEV

Energy & Electricity

Authorities

- Government of the Republic of Slovenia (The Government is the supreme body of executive power. The Government consist of the Prime Minister, 3 Deputy Prime Ministers and 13 Ministries.)
- Ministry for Infrastructure (The Ministry of Infrastructure is the central body of executive power in the areas of transport, roads and infrastructure.)
 - Energy Directorate (The Energy Directorate performs tasks relating to the efficient use of energy and to the provision of renewable sources of energy, energy supply, sources of energy and mining. The Energy Directorate framework of operation includes the pursuit of key national energy policy goals, as follows: a secure, sustainable and competitive energy supply; increasing energy efficiency; and energy supply from renewable energy sources.)
- Energy Agency (The Energy Agency shall, acting under public authorisation, carry out the administrative and other tasks specified in the Energy Act, EU regulations, which determine the competences of the national energy regulators, or in general act of the agency adopted on the basis of the energy legislation.)

Regulations

- Energy Act - Official Gazette of the Republic of Slovenia, No 17/2014 (The new Energy Act entered into force on 22 March 2014. This act transposes a number of EU directives concerning electricity and gas markets, energy efficiency and renewable energy sources. It lays down the principles of energy policy, principles and measures in order to ensure security of supply, as well as it regulates the area of energy infrastructure and heat distribution.)

ICT

Authorities

- The Information Commissioner (The Information Commissioner was from the result of the merge of two bodies, namely the Commissioner for Access to Public Information and the Inspectorate for Personal Data Protection. The legal basis for the merger was established in the Information Commissioner Act passed in November 2005. Operation of the new body started on 1 January 2006. The Information Commissioner performs the duties of both its parent bodies, namely supervision of access to public information, supervision of the legality of personal data processing, measures to ensure data security and protection and others.)



Regulations

- Personal Data Protection Act (The Personal Data Protection Act (Official Gazette of the Republic of Slovenia No. 94/07), currently applicable, was adopted in July 2004 and came into force on 1 January 2005. It replaced a previous version, adopted in 1999, and transposed the EU Directive 95/46/EC on data protection into Slovenian Law. The main goal of the Act is to prevent illegal and unwarranted violations of personal privacy in the course of data-processing, and to ensure the security of personal databases and their use. Until 1 January 2006, the Inspectorate for Personal Data Protection was in charge of overseeing the application of the Act. Since then, such responsibility has been transferred to the Information Commissioner (Information Commissioner Act, adopted in December 2005). The last amendment of the Personal Data Protection Act was performed in 2013.)
- Electronic Communications Act (The Electronic Communications Act was adopted in March 2004 and came into force on 1 May 2004. It was lastly amended in 2007. The Act aims to establish effective competition in the electronic communications market, manage the use of the radio frequency spectrum, ensure universal services and protect users' rights. This Act encompasses all relevant issues contained in the EU Directives forming the EU Regulatory Framework for Electronic Communications, namely: Directive 2002/21/EC eGovernment in Slovenia January 2015 [23] („Framework“ Directive); 2002/20/EC („Authorisation“ Directive); 2002/19/EC (Access and interconnection Directive); 2002/22/EC („Universal service and user's rights' Directive); and 2002/58/EC („ePrivacy“ Directive). On 15 January 2013 the new Electronic Communications Act (Official Gazette of RS, No. 109/2012) entered into force.)

Strategy, Roadmaps, Initiatives

- Development Strategy of the Electrical Power System of the Republic of Slovenia (The strategy includes a transmission network development plan in the Republic of Slovenia from 2015 to 2024.)
- National Energy Program of Slovenia until 2030 for strategic plans for sustainable mobility and energy usage (The National Energy Program is stating: Introduction of electric and hydrogen vehicles in car parks; Building charging infrastructure for electric vehicles; Developing charging station network for transit and internal traffic; Expanding measurements and requirements for charging stations in projects; Development of intelligent and smart traffic networks that enable technical grounds for building proper charging infrastructure for sustainable mobility.)
- Sustainable Urban Mobility Plan (Strategy for Electro-Mobility in the City Municipality of Ljubljana)

Table 27: Interoperability in Sweden - Status Quo

Electromobility

Authorities

- Government of Sweden (The Government governs Sweden and is the driving force in the process of legislative change, thereby influencing the development of the society. The Government consists of a prime minister and 23 ministers.)



- Ministry of Finance (The Ministry of Finance is responsible for issues concerning central government finances, including coordination of the central government budget, forecasts and analyses, tax issues, and management and administration of central government activities. The Ministry is also responsible for matters concerning financial markets and consumer legislation.)
 - Swedish Tax Agency Skatteverket (The Swedish Tax Agency manages civil registration of private individuals and collects taxes such as personal income tax, corporate tax, VAT and excise tax.)

Associations and Companies

- Calix (Development of charging technology for electric vehicles.)
- Vinnova (Vinnova promotes sustainable growth by funding needs-driven research and stimulating collaborations between companies, universities, research institutes and the public sector. They are also the national contact agency for the EU framework programme for research and innovation.)

Regulations

- Incentives
 - Purchase Subsidies: Super green car premium new cars: A so called “Super green car premium” (Supermiljöbilspremie) of SEK 20,000 for PHEV and SEK 40,000 for BEV is available for the purchase of new cars with CO2 emissions of maximum 50 g/km
 - Ownership Tax Benefits: Five-year exemption from paying annual circulation tax
 - Company Tax Benefits: Reduction of company car taxation

Energy & Electricity

Authorities

- Government of Sweden (The Government governs Sweden and is the driving force in the process of legislative change, thereby influencing the development of our society. The Government consists of a prime minister and 23 ministers.)
- Ministry of the Environment and Energy (The Ministry of the Environment and Energy is responsible for the Government’s environmental, energy and climate policy. The Ministry works on issues concerning the climate, energy, biological diversity, chemicals, ecocycles, nature and forest conservation, marine and water environments, radiation safety and international environmental cooperation.)
- Swedish Energy Markets Inspectorate (The main regulatory body for the Swedish energy markets is the Swedish Energy Markets Inspectorate (the Inspectorate), an authority under the Ministry of Enterprise, Energy and Communications. It supervises the Swedish electricity, natural gas and district heating markets. One of the main responsibilities of the Inspectorate is to improve the functioning and efficiency of these markets. The Swedish parliament and the government decide on the assignments and budget of the Inspectorate.)
- Svenska kraftnät (Svenska kraftnät is the authority responsible for ensuring that Sweden's



transmission system for electricity is safe, environmentally sound and cost-effective – today and in the future.)

Associations and Companies

- Swedish Energy Agency (The Swedish Energy Agency works for a sustainable energy system, combining ecological sustainability, competitiveness and security of supply. For a more efficient energy use, the Agency supports the development and dissemination of knowledge targeted at households, industry, and the public sector. The Agency finances research for new and renewable energy technologies, smart grids, and vehicles and transport fuels of the future. The Agency supports commercialization and growth of energy related cleantech. With the aim of attaining energy and climate objectives, the Agency participates in international collaboration and manages instruments such as the EU Emission Trading System and the Electricity Certificate System. The Agency also provides energy system analysis, energy forecasts and official energy statistics. The Swedish Energy Agency is subordinate to the Ministry of the Environment and Energy, and regulated by the Government through the instruction and annual appropriations directives. Parliament and the Government decide on the assignments and budget of the Agency.)

Regulations

- Electricity Act 1997:857 (This Act provides regulations concerning power installations, concerning trade in electrical power in certain cases and concerning electrical safety.)⁴²
- Natural Gas Act 2005:403 (This Act contains provisions for natural gas pipelines, storage plants and gasification plants and, in certain cases, trading in natural gas and for the secure supply of natural gas.)⁴³

ICT

Authorities

- Government of Sweden (The Government governs Sweden and is the driving force in the process of legislative change, thereby influencing the development of our society. The Government consists of a prime minister and 23 ministers.)
- Ministry of Enterprise and Innovation (The Ministry of Enterprise and Innovation is responsible for matters relating to housing and urban development, state-owned enterprises, information technology, enterprise and industrial policy, rural affairs, regional growth, post issues and infrastructure. Another responsibility is the ICT policy which concerns utilising and promoting the opportunities offered by digitalisation and includes regulation of IT and electronic communications, network and information security, frequency policy and issues concerning broadband access and IT infrastructure. This policy area also covers eGovernment issues, i.e. using IT to make the activities of government agencies more efficient and simplify the general

⁴² Electricity Act in Swedish: Ellag https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/ellag-1997857_sfs-1997-857

⁴³ Natural Gas Act in Swedish: Naturgaslag https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/naturgaslag-2005403_sfs-2005-403



public's contacts with them – for example through electronic identification, electronic signatures and open data.)

- Swedish Data Protection Authority DPA (The Swedish Data Protection Authority (DPA) is a public authority. Their task is to protect the individual's privacy in the information society. The DPA works to prevent encroachment upon privacy through information and by issuing directives and codes of statutes. The DPA also handles complaints and carries out inspections. By examining government bills the DPA ensures that new laws and ordinances protect personal data in an adequate manner.)

Regulations

- Personal Data Act (The Personal Data Act came into force on 24 October 1998. The Personal Data Act was adopted to bring Swedish law into compliance with the requirements of the EU Data Protection Directive 95/46/EC, which aims to prevent the violation of personal integrity in the processing of personal data. The Act lists certain fundamental requirements concerning the processing of personal data. These demands include, inter alia, that personal data may only be processed for specific, explicitly stated and justified purposes and if the person registered gives his/her consent. Exemptions to this rule include the exercise of official powers, or the fulfilment of a legal obligation by the controller of personal data. In many areas of the administration there are special registry laws to supplement or replace the provision in the Personal Data Act.)
- Electronic Communications Act (The Electronic Communications Act covers all electronic communications networks and electronic communications services. The Act came into force on 25 July, 2003. It replaced the Telecommunications Act and the Radio communications Act.)

Strategy, Roadmaps, Initiatives

- Targets regarding electric vehicles (PHEVs and EVs): 2020: 600,000 stock
- A Completely Connected Sweden by 2025 – a Broadband Strategy (The government of Sweden hereby establishes a broadband policy in order to face people's need for high-speed broadband and reliable high quality mobile services. The vision of the government is an entirely connected Sweden, thus creating opportunities for living and working, as well as inspiring growth and innovative production. In the short term, the goals will be broadened to include broadband access for 95 percent of all households and businesses at a minimum capacity of 100 mbit/s, already by the year 2020.)



Table 28: Interoperability in the United Kingdom - Status Quo

Electromobility
<p>Authorities</p> <ul style="list-style-type: none">- Electric Vehicles<ul style="list-style-type: none">- Office for Low Emission Vehicles – OLEV (The Office for Low Emission Vehicles is a team working across government to support the early market for ultra-low emission vehicles (ULEV).)- Department for Transport - DfT (The Department for Transport works with our agencies and partners to support the transport network that helps the UK's businesses and gets people and goods travelling around the country. They plan and invest in transport infrastructure to keep the UK on the move.)- Department for Business, Energy and Industrial Strategy (The department brings together responsibilities for business, industrial strategy, science, innovation, energy, and climate change. The department is also responsible for oversee EV funding, including grants for vehicles.)- EV-specific infrastructure<ul style="list-style-type: none">- The Office for Low Emission Vehicles (OLEV) oversees the Plugged-in Places scheme which helps regions meet up to 50% of the installation costs of recharging posts.- Use of general infrastructure by EVs<ul style="list-style-type: none">- For motorways and major roads: Welsh Assembly Government (The National Assembly for Wales is the democratically elected body that represents the interests of Wales and its people, makes laws for Wales, agrees Welsh taxes and holds the Welsh Government to account.)- For all roads in Northern Ireland: NI Department for Infrastructure
<p>Associations and Companies</p> <ul style="list-style-type: none">- Use of general infrastructure by EVs<ul style="list-style-type: none">- For motorways and major roads:<ul style="list-style-type: none">- Highways England (Highways England operates, maintains and improves England's motorways and major A roads.)- Transport Scotland (Transport Scotland seek to deliver a safe, efficient, cost-effective and sustainable transport system for the benefit of the people of Scotland, playing a key role in helping to achieve the Scottish Government's Purpose of increasing sustainable economic growth with opportunities for all of Scotland to flourish.)
<p>Regulations</p> <ul style="list-style-type: none">- Electric Vehicles<ul style="list-style-type: none">- VAT, fuel taxes: Government tax relief to companies for business cars if they are electric or otherwise have CO2 emissions less than 95g/km (valid until 31 March 2018). Taxable benefit



on employees' use of company cars reduced to zero if they are full EVs.

- EV-specific infrastructure
- Subsidy: Purchasers of EVs can receive a £900 subsidy for installation of a charger at their home (which covers nearly all purchase and installation costs). Plugged-in Places government scheme provides funding to local authorities to provide charging infrastructure.
- Use of general infrastructure by EVs
- Vehicle Excise Duty (road tax).
- Annual road tax (Vehicle Excise Duty – VED) is zero for full EVs (and other vehicles emitting less than 100gCO₂/km), compared to between £20 and £515 (average £145) for other vehicles.
- Pilot scheme to let EVs drive in bus lanes in some cities (starting in Derby and Milton Keynes). EVs are exempt from the London Congestion Charge (£11.50 per weekday for other vehicles).
- Some local authorities provide exemptions or a reduced charge for electric cars.

Energy & Electricity

Authorities

- Ofgem - the Office of Gas and Electricity Markets (Ofgem aims to make a positive difference for energy consumers.)

Regulations

- Ofgem decided that the Maximum Resale Price provisions do not apply to the resale of electricity from charge points for use by EVs.
- In Scotland, Transport Scotland is establishing a multi-stakeholder group on energy systems to review the challenges and opportunities and prepare necessary guidance and advice for public and private sector organisations. The Scottish Government works with energy suppliers to encourage the deployment of tariffs and technologies to manage recharging behaviours and maximise the emission reduction benefits across Scotland. (from Switched On Scotland Roadmap, 2013)

ICT

Authorities

- The Information Commissioner's Office (The Information Commissioner is an independent supervisory authority in charge of enforcing and overseeing legislation in data protection/privacy and freedom of information. The Commissioner has a range of duties, including the promotion of good information handling and the encouragement of codes of practice for data controllers regarding the collection and processing of personal data.)

Regulations

- Data Protection Act of the UK (The Data Protection Act received Royal Assent in July 1998 and came into force on 1 March 2000, giving effect to the EU Data Protection Directive (95/46/EC). It lays down rules for the way organisations have to treat personal data and information that apply to paper based and electronic records. These rules are mandatory for all organisations that hold or process personal data, in the public as well as the private and voluntary sectors.)



Strategy, Roadmaps, Initiatives

- Grant schemes for electric vehicle charging infrastructure.
- The Electric Vehicle Homecharge Scheme (EVHS) provides grant funding of up to 75% towards the cost of installing electric vehicle charge points at domestic properties across the UK.
- UK Department for Transport (DfT) updated four-year Business Plan 2011–2015 (published May 2011):
 - Develop a nationwide strategy to promote the installation of electric vehicle infrastructure, including a decision on whether to use an energy Regulated Asset Base and/or changes to planning/building regulations.
 - Support the Plugged-In Places pilots program to encourage the establishment of electric vehicle recharging infrastructure across the UK and inform the development of the electric vehicle infrastructure strategy.
 - Push for early EU adoption of electric vehicle infrastructure standards.
 - Consolidate existing support mechanisms for low and ultra-low emission vehicle research and development.
 - Promote consumer uptake of ultra-low emission vehicles.
- Switched On Scotland: A Roadmap to Widespread Adoption of Plug-in Vehicles:
 - Switched on Scotland prioritises home EV charging and EV charging solutions for residents of flats without their own parking space. Transport Scotland will continue to provide funding for the safe and convenient installation of domestic, workplace and en-route charge points and also deploy rapid charge points at intervals of at least 50 miles (80km) on Scotland's primary road network to enable extended all-electric journeys.
- Alternative Fuels Infrastructure for Transport in Ireland (These goals remain the cornerstone of transport policy and are fully aligned to the objectives of this Draft National Policy Framework: Reduce overall travel demand, Maximise the efficiency of the transport network, Reduce reliance on fossil fuels, Reduce transport emissions, Improve accessibility to transport.)

Missing Standards:

- The UK does not have a national wide interoperability scheme until now, instead there are a lot of regional/national networks. On European level CYC has an agreement with The New Motion, giving their customers access to certain charging points in other European countries.



Table 29: Interoperability in Norway - Status Quo

Electromobility

Authorities

- Ministry of Transport and Communications (The Ministry of Transport and Communications has overall responsibility for the framework conditions for postal and telecommunications activities, for the civil aviation, public roads and rail transport sector, ferry services forming part of the national road system, for coastal management, the marine environment and port and sea transport policy.)
- Ministry of Justice and Public Security (The Ministry of Justice and Public Security is responsible for the preservation and development of basic guarantees of the rule of law.)
- Ministry of Finance (The Ministry of Finance is responsible for planning and implementing the Norwegian economic policy and for coordinating the work with the Fiscal Budget.)
 - Tax Law Department (The Ministry's Tax Law Department is responsible for the drafting, interpretation and administration of regulations relating to income and wealth tax, petroleum tax, national insurance contributions, property tax, inheritance tax, value-added tax, customs duties and various special taxes.)
- Ministry of Climate and Environment (The Norwegian Ministry of Climate and Environment has the main responsibility for ensuring integrated governmental climate and environmental policies.)

Associations and Companies

- Bellona Foundation (The Bellona Foundation is an independent non-profit organization that aims to meet and fight the climate challenges, through identifying and implementing sustainable environmental solutions. We work towards reaching a greater ecological understanding, protection of nature, the environment and health. Bellona is engaged in a broad specter of current national and international environmental questions and issues around the world.)
- Norwegian Electric Vehicle Association (The Norwegian Electric Vehicle Association is a non-profit organization. The members elect a Board of Directors and the daily business is operated by 14 employees. Their main goal is to promote electric vehicles that run fully or partially on renewable energy.)

Regulations

- Zero emissions incentives (The incentive program will be revised and adjusted parallel with the market development in coming years.)
 - No purchase/import taxes (1990)
 - Exemption from 25% VAT on purchase (2001)
 - Low annual road tax (1996)
 - No charges on toll roads or ferries (1997 and 2009)
 - Free municipal parking (1999)
 - Access to bus lanes (2005)
 - 50 % reduced company car tax (2000)



- Exemption from 25% VAT on leasing (2015)

Energy & Electricity

Authorities

- Ministry of Petroleum and Energy (OED⁴⁴) – (The principal responsibility of the Ministry of Petroleum and Energy is to achieve a coordinated and integrated energy policy. A primary objective is to ensure high value creation through efficient and environment-friendly management of Norway's energy resources.)
- Norwegian Water Resource and Energy Directorate - NVE⁴⁵ (NVE's mandate is to ensure an integrated and environmentally sound management of the country's water resources, promote efficient energy markets and cost-effective energy systems and contribute to efficient energy use. The directorate plays a central role in the national flood contingency planning and bears overall responsibility for maintaining national power supplies.)

Associations and Companies

- Statnett (Statnett is the system operator in the Norwegian energy system. This means operating about 11 000km of high-voltage power lines and 150 stations all over Norway. Operations are monitored by one national control centre and three regional centres. Statnett is also responsible for the connections to Sweden, Finland, Russia, Denmark and the Netherlands. Statnett is a state enterprise, established under the Act relating to state-owned enterprises and owned by the Norwegian state through the Ministry of Petroleum and Energy.)
- Nordic energy regulators - NordREG (NordREG is an organisation for the Nordic energy regulators. Their mission is to actively promote legal and institutional framework and conditions necessary for developing the Nordic and European electricity markets. The basis for the co-operation within NordREG is to identify areas of work where cooperation can take the following forms: exchange of views, working together to map and analyse energy market issues, producing reports and statements, taking common action to influence the development of the Nordic or the European energy markets.)

Regulations

- The Energy Act (This Act applies to the generation, conversion, transmission, trading and distribution of energy.)
- The Energy Act Regulations (These regulations apply to the planning, construction and operation of installations for the generation, conversion, transmission and distribution of electrical energy, thermal energy generated in district heating and district cooling plants and likewise to the trade in electrical energy.)

ICT

Authorities

⁴⁴ Norwegian „Olje- og energidepartementet“

⁴⁵ Norwegian „Norges vassdrags- og energidirektorat“



- The Norwegian Data Protection Authority (The Norwegian Data Protection Authority (Norwegian: Datatilsynet) is Norwegian Government agency responsible for managing the Personal Data Act of 2000, concerning privacy concerns.)
- Ministry of Local Government and Modernisation (The Ministry is responsible for housing policy, the Planning and Building Act, local government finances and local administration, ICT Policy and Public Sector Reform, rural and regional policy, the conduct of elections, government employer policy, Sami and minority affairs and national mapping and geodata policy.)
- Ministry of Defence (The Ministry of Defence is a Government Office with responsibility for the formation and implementation of Norwegian security and defence policy.)
 - Department of Defence Policy and Long-Term Planning (The Department of Defence Policy and Long-Term Planning is responsible for strategic analysis, the development of long-term defence policy and overall planning for the defence sector. This entails responsibility for the follow-up and analysis of fundamental development trends of relevance to the defence sector, the development of a unified overall long-term policy in areas bearing on developments in defence, providing superior guidelines for ICT development as well as the development of defence policy aims and tasks. The department is also responsible for defence investments up to a given point in the future.)
- Ministry of Transport and Communications (The Ministry of Transport and Communications has overall responsibility for the framework conditions for postal and telecommunications activities, for the civil aviation, public roads and rail transport sector, ferry services forming part of the national road system, for coastal management, the marine environment and port and sea transport policy.)

Table 30: Interoperability in Ukraine - Status Quo

Electromobility

Authorities

- Government of Ukraine (The Government governs Ukraine and is the driving force in the process of legislative change, thereby influencing the development of the society.)
 - Ministry of Infrastructure of Ukraine (The Ministry is improving the environmental friendliness and energy efficiency of vehicles. The Ministry of Infrastructure is the central body of executive power in the areas of transport, roads, postal service and infrastructure.)
 - Office of Strategic Infrastructure Development and Investment (The organization and monitoring of the implementation of Ukraine's 2020 Transportation Strategy is carried out by the Office of Strategic Infrastructure Development and Investment.)



Associations and Companies

- Ukrainian Association of Electromobility⁴⁶ Market Members (The organization brings together several companies of the electromobility market.)
- GreenClinic LifeScience Ukraine (GreenClinic LifeScience is presented on the market of new sustainable mobility with the range of solutions and connected offers.)
- Bosch (Virtually no other company is capable of offering such an extensive range of electromobility solutions. With its huge variety of products and services, Bosch simultaneously supports e-mobility developments in multiple areas, from powertrain technology for cars and two-wheelers to the networking of charging infrastructure and mobility services.)
- E-Line Ukraine (E-line is one of the first companies in Ukraine engaged in the development of infrastructure for charging electric vehicles. Since 2013, the company has been a regular member of the International Association CHAdeMO. "E-Line" company produces charging stations that can charge all existing electric vehicles in the world today 1-3 electric charging mode. Home and community stations manufactured by E-line developed by world standards approved in electromobility industry. The company «E-line» for significant contribution to the development of the charging infrastructure in Ukraine is chosen the general technical partner in organizing Electric Marathon Kiev - Monte Carlo 2015)

Regulations

- Goal-oriented state program of urban electric transport development for the period until 2017
- 2014 report on the results of the implementation of the goal-oriented state program of urban electric transport development for the period until 2017

Energy & Electricity

Authorities

- Government of Ukraine (The Government governs Ukraine and is the driving force in the process of legislative change, thereby influencing the development of the society.)
- Minister of Energy and Coal Industry of Ukraine (The Ministry has several activities: Preparation of draft regulatory acts, projects of regulations and regulatory impact analyses, notice of publications, reports on the effectiveness of regulatory acts, systematic review of regulations in the energy sector. Also, there are budget relevant activities link information on the budget for the budget programs, reports on the implementation of budget programs, budget program and the budget requests.)

Associations and Companies

- European-Ukrainian Energy Agency - EUEA (The European-Ukrainian Energy Agency is an independent non-profit organization open to all stakeholders in the Ukrainian Energy Efficiency (EE) and Renewable Energy (RE) sectors who want to work constructively with like-minded members to contribute to the gainful and transparent development of these markets in Ukraine,

⁴⁶ In ukrainian: Українська Асоціація Учасників Ринку Електромобілів



through the promotion of fair and sustainable business practice, raising of public awareness of energy issues, and by influencing government energy policy.)

- The National Academy of Sciences of Ukraine (The National Academy of Sciences of Ukraine is the highest state-supported research organization, enrolling academicians, corresponding members and foreign members. It integrates all researchers of its institutions and carries out studies in various branches of knowledge, develops scientific fundamentals for technological, socio-economic and cultural advancement of the nation.)
- State Agency on Energy Efficiency and Energy Saving of Ukraine - SAEE (The Agency is responsible for several activities about Energy Efficiency and Energy Saving.
- National Commission for State Energy and Public Utilities Regulation of Ukraine – NERC (The Commission performs state regulation in the energy sector and utilities.)

Regulations

- Law of Ukraine about Electricity Market (The Electricity Market Law is a signature reform in the energy market, following on the Law on the Gas Market. The Electricity Market Law is set to implement the EU's Third Energy Package requirements in Ukraine's electricity market unbundling transmission and distribution of electricity. The law envisages transfer from the current single buyer model market, where State Enterprise "Energorynok" purchases all electricity in the country and then sells it to regulated and non-regulated distributors, to a liberalized market. This Law determines the legal, economic and organizational principles of functioning of the electricity market, regulates relations related to the production, transmission, distribution, sale and purchase of electricity, to ensure reliable and safe supply of electricity to consumers, taking into account consumer interests, the development of market Relations, minimizing the costs of electricity supply and minimizing the negative impact on the natural environment.)

ICT

Authorities

- Government of Ukraine (The Government governs Ukraine and is the driving force in the process of legislative change, thereby influencing the development of the society.)
 - Ministry of Economic Development and Trade of Ukraine (The Ministry intends to introduce electronic administrative services and support investments in innovation and start-ups.)
- State Agency of Ukraine for e-government (The Agency is the central executive body responsible for the development of IT industry in Ukraine, creating appropriate plans, processes and approves the draft regulations on the industry.)
- National Commission for State regulation of communications and informatization – NCRC (The National Commission for State regulation of communications and informatization is the organ of state regulation in the field of telecommunications, information, radio frequency resource and the provision of postal communication. In the specific field NCCIR exercise the powers of the licensing authority, licensing authorities, regulatory bodies and state supervision.)



Associations and Companies

- Information technologies of Ukraine (The association Information technologies of Ukraine is responsible for the representation and protection of interests of the information technology industry; cooperation with state authorities and local self-government on the promotion of the development of the IT sector; cooperation with educational institutions; support and development of innovation activities.)

Regulations

- Law of Ukraine about telecommunication (This Law establishes the legal basis for activities in the Telecommunications field. The law defines the powers of the state for Management and Regulation of the specified activity, as well as rights, responsibilities and Principles of liability of physical and legal persons who take Particpate in this activity or use telecommunication Services.)

Strategy, Roadmaps, Initiatives

- Ukraine's 2020 Transportation Strategy (These include i.a.: ensuring the availability and improving the quality of transportation services; integrating national transportation systems into European and international transportation systems; increasing the effectiveness of public administration in the field of transportation; improving the environmental friendliness and energy efficiency of vehicles.)
- Goals about share of electric car sales of total car sales and own production of electric cars. (The minister of Infrastructure of Ukraine said that Ukraine's goal is to have the share of electric car sales of total car sales of 15% in 2020 and own production of electric cars.)
- Incentives goals (For production of Ukrainian electric cars it is proposed to exempt sale of electric cars from paying VAT until January 1, 2021, the registration fee to the Pension Fund, setting a zero duty on imports of spare parts to electric cars, setting a delay in paying VAT on imports of spare parts and the introduction of a beneficial rate for land tax for electric car manufacturers until January 1, 2028.)



Hyper-**N**etwork for **e**lectro**M**obility

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