



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

Business Model and regulatory guidelines

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Glossary of terms

Term	Description
BAEM	The Business Alliance for Electro-Mobility (BAEM) as the non-profit association that will take over the management of the Hyper-Network and endure its sustainable operation as well as promote electromobility after the project ends.
BAEM Board	The Business Alliance for Electro-Mobility (BAEM) management structure.
Electro mobility 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 electro mobility 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.
Hyper-Network Business Partner	A user of the Hyper-Network which NeMo or the BAEM has accredited as being compliant with the relevant protocols and procedures. Potentially a "label" that could be used by the organisation concerned.
NeMo Associated Partner	An external legal entity that has signed the MoU and NDA in order to participate in the work resulted under the project and future BAEM.



List of abbreviations and acronyms

Abbreviation	Meaning
BAEM	Business Alliance for Electro-Mobility
BMC	Business Model Canvas
B2B	Business to Business
B2C	Business to Consumers
CDR	Charge Detail Record
CIM	Common Information Model
CPO	Charge Point Operator
DSO	Distribution System Operator
EC	European Commission
EM	Electromobility
EMSP or EMP	Electromobility Service Provider
EU	European Union
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
IPR	Intellectual Property Rights
Mx	Month x
OCPI	Open Charge Point Interface
PER	Pan European eRoaming
SLA	Service Level Agreement
SoC	Status of Charge
SOH	State of Health



Abbreviation	Meaning
VC	Variable Costs
FC	Fixed Costs
TC	Total Costs
TSO	Transmission System Operator
TFC	Total fixed costs
TRL	Technology Readiness Level
TVC	Total variable costs
WP	Work Package
Yx	Year x



Executive Summary

This deliverable is the outcome of the work under Tasks 7.3 and 7.4 of NeMo, and presents the value sharing model among the actors and key partners joining the NeMo Hyper-Network, building a sustainable business model for the Hyper-Network that can last beyond the project lifetime. Regulatory and business requirements that will ensure that the Hyper-Network continues to be fully operational under the European electromobility ecosystem in a sustainable way is also presented at the last chapter of the document.

In the present deliverable, the Business Model Canvas approach was used to define the value proposition of the Business Alliance for Electro-Mobility (BAEM), a subscription based association to be formed by the first group of key actors, responsible to develop and engage the relations with the Hyper-Network partners, to manage and be the legal entity ensuring full exploitation of the NeMo Hyper-Network and its services permitting the sustainability of the network. The business model includes identification of the key actors, the main resources, the revenues streams that are analysed in depth. A proposition of the first years' financial plan of the association and a marketing plan are also proposed.

Requirements are also being proposed for building the necessary regulatory and business framework for the Hyper-Network's sustainable and interoperable operation within the EU. A business solution is being proposed for a Connection Service Agreement between charging network operators and mobility service providers that would support their business inter-connection.

The NeMo Business Alliance for Electromobility will need to meet the dynamic market trends and regulation changes and take action over the needed regulatory and business tasks mentioned in this deliverable, establishing standardizations update processes, enabling commercial framework for Inter-roaming and service provision, and participating in policy recommendations.



1. Introduction

This deliverable is the outcome of the work performed under **Task 7.3** “Actor value, business models and roll-out process of new use cases” and **Task 7.4** “Regulatory requirements to ensure sustainability of electromobility Hyper-Network” of NeMo project. The outcomes derived from this work contribute towards the overall aim of WP7 of NeMo “Deployment, business model, operational and organisational issues”, which is to create a self-sustaining business model for the NeMo Hyper-Network that can last beyond the project’s lifecycle.

The current document aims to describe partners’ perspective on exploiting the NeMo outcomes after the end of the project that will ensure the long-term sustainability of the NeMo Hyper-Network. Moreover, it is presenting detailed blueprints for closing identified regulatory gaps helping in the efficient implementation of interoperable electromobility services within EU member states.

The methodology followed for compiling this deliverable was based on constructive close collaboration of the project partners, on the Business Model Canvas and seriatim teleconferences and email exchanges among project partners.

This deliverable is structured as follows. The first chapter is the introductory one that briefly presents its scope, the methodology followed for its creation and the audience that it addresses. The second chapter analyses in detail the BAEM Business Model based on partners input on the topic, calculates roughly the costs that will occur during its first years of operation, presents a draft marketing plan, and attempts an estimation of expected revenues within a set timeframe. The third chapter presents the regulatory requirements to ensure the sustainability of the NeMo Hyper-Network and the needed business framework for the Hyper-Network and its members.

The content of this document is public according to the DoA. This means that all audience without any restrictions can access the information it contains. The following table describes the reasons for reading the current deliverable.

Table 1: Intended audience

Intended audience	Reasons for reading this document
NeMo Project partners	to assist project members in order to create the basis for a common understanding that will lead in joint actions after the end of the project and will ensure that NeMo’s results will be sustained beyond the project’s lifecycle.
European Commission	it is a report presenting the vision of the consortium on how NeMo partners will manage to exploit the project’s outcomes after the end of the grant.
Target Groups: <i>electromobility sector, businesses, charge point operators, electric grid operators, battery manufacturers</i>	to be informed about the actions that NeMo consortium is planning to do in order to sustain the Hyper-Network and the project’s results. Moreover, to attract players in the electromobility sector to participate into the next step as potential members of the NeMo “successor”, the BAEM.



Representatives involved into similar EU funded projects

to share knowledge, information and vision in the electromobility sector.

Anyone interested

to share knowledge, information, vision related to the project's topic, raising visibility in wider audience and in general contributing to raising awareness around electromobility topics in Europe.



2. The BAEM and its business model

2.1 The BAEM and its Role

NeMo has developed a Hyper-Network, a distributed IT system comprising of multiple NeMo Nodes hosting the business functionality which is provided by the NeMo Marketplace. Each network node within the Hyper-Network contains processes, methods, frameworks, and development and test tooling in order to:

- create new electromobility services within the NeMo Hyper-Network;
- register, search for and use electromobility services;
- execute services being offered within the Hyper- Network.

The **Business Alliance for Electro-Mobility (BAEM)** will be the managing entity of the Hyper-Network after the end of the project's lifecycle. It will be established under the legal form of a **not-for-profit association** with membership open to all categories of the electromobility value chain players or providers (*legal entities, whether private or public*). The founding members of the BAEM will be the project partners of NeMo without excluding associate partners or any other party that expresses interest to participate. This legal entity will ensure the full exploitation of the NeMo Hyper-Network and its services. Its revenues will be based on membership fees that will cover all fixed and operational costs of the entity.

The subscription fees will differ and will reflect the membership category, while a usage element will be included, e.g. for users of services on the Hyper-Network, a small percentage of the transaction value or a flat fee per transaction. Articles of association for the BAEM will be prepared and a business plan will be created based on the analysis made in the current document.

The **Business Model Canvas (BMC)** was selected as a tool for collecting per partner its individual perspective about the actions that should be performed and the roles that should be assigned in order for the BAEM to uptake into the electromobility market all the solutions that the Hyper-Network offers. Based on the discussions made among the project partners for each block that the BMC consists, the analysis as well as our assumptions and estimations were built up and are presented in the current chapter.

2.2 What is the Business Model Canvas?

A business model is a representation of the value logic of an organization in terms of how it creates and captures customer value. The definition of Business Model according to Osterwalder and Pigneur (2010) is:

“A business model describes the rationale of how an organization creates, delivers, and captures value”.

The most celebrated framework used by organizations is the **Business Model Canvas (BMC)** created by Osterwalder and Pigneur (2010). The BMC provides a shared language (*i.e. common terms*) in order to assist the organizations to describe, visualize, assess and change



business models. It is focused on design and innovation, in particular by using visual thinking, which stimulates a holistic approach and storytelling. [1]

This template is a visual chart consisting in **nine blocks (elements)**:

- Key partners
- Key activities
- Key resources
- Value proposition
- Customer relationships
- Channels
- Customer segments
- Cost structure
- Revenue streams

The **Business Model Canvas (template)** presented in the figure below is provided by [Strategyzer AG](#) under a [Creative Commons license](#) and can be used without any restrictions for modelling businesses.

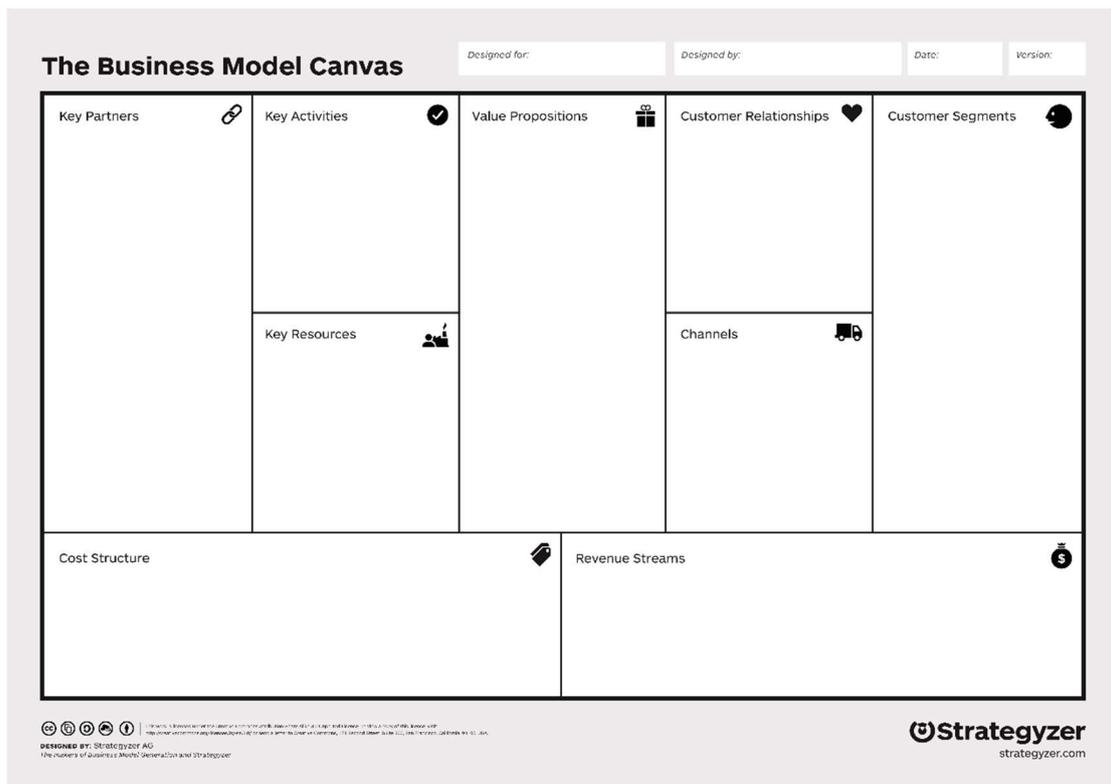


Figure 1: Business Model Template

According to **Smith et al. (2014)** the segments of BMC are described as follow:

- **Customer Segments** are the groups of people and/or organizations a company or organization aims to reach and create value for with a dedicated value proposition.
- **Value propositions** are based on a bundle of products and services that create value for a customer segment.
- **Channels** describe how value propositions are communicated and delivered to a customer segment through communication, distribution, and sales channels.



- **Customer relationships** outline what type of relationships are established and maintained with each customer segment, and they explain how customers are acquired and retained.
- **Revenue streams** result from a value proposition successfully offered to a customer segment. It is how an organization captures value with a price that customers are willing to pay.
- **Key resources** are the most important assets required to offer and deliver the previously described elements.
- **Key activities** are the most important activities an organization needs to perform well.
- **Key partnerships** show the network of suppliers and partners that bring in external resources and activities.
- **Cost structure** describes all costs incurred to operate a business model.

2.3 Partners input via BMC

As mentioned in the methodology part of the current document, a BMC template was deployed for establishing a **common understanding** among the consortium and approaching the proper Business Model for the BAEM. For collecting the partners' perspective on the topic this template was the ideal one and assisted us for exploring ideas and forming our analysis during teleconferences and email communication.

Taking into consideration the high volume of information exchanged among partners, for reader's ease, all responses were accumulated in the table below, which resembles the BMC. The presented ideas in each block were the responses of NeMo partners and constitute the basis of our analysis that follows in the next chapters.

Table 2: Partners input via BMC

NeMo partners input via BMC				
<u>Key Partners</u>	<u>Key Activities</u>	<u>Value Proposition</u>	<u>Customer Relationship</u>	<u>Customer Segments</u>
<ul style="list-style-type: none"> - charging points operators - DSOs - E-Mobility service providers - cloud service providers; - sales partners network; - NeMo Technical partners. 	<ul style="list-style-type: none"> - upgrade & maintain the system - system's demonstration - marketing & sales - train customers - collect data from charge points - customer's support 	Data exchange facilitating via Hyper-Network needed for integrated and interoperable e-mobility ICT services (both B2B and B2C)	<ul style="list-style-type: none"> - partners' personal contacts - partners network - support team for customers' queries 	<ul style="list-style-type: none"> - Electromobility Service Providers; - IT Service Developers; - IT Cloud Platform Providers; - eRoaming Platform Providers; - map/routing providers - navigation/travel & traffic providers - CPOs - Parking & Service Stations Providers;
	<u>Key Resources</u> <ul style="list-style-type: none"> - Hardware - Cloud service - Human resources 		<u>Channels</u> <ul style="list-style-type: none"> - Hyper-Network portal 	



	- Financial resources		- commercial partners' sales network	- Policy makers - Banking Service Operators
<u>Cost structure</u> cloud infrastructure costs, upgrade costs, training costs, travel costs, customers' support costs, marketing & sales costs, maintenance costs, staff costs		<u>Revenue Streams</u> pay per transaction, pay-per-use, subscription (basic, pro, premium), resemblance of HomeKit & Nest		

2.4 Initial Marketing Plan

2.4.1 Market & Competitors Analysis

For defining the term “market” concerning projects, in general, the analysis involves the main customer groups, what their needs are, and how well existing suppliers serve these needs. The aim of this process is to identify market performance gaps, against which the project can position itself and develop relevant market competencies. To the extent that existing competitors fail to meet market expectations they leave behind market performance gaps. Nevertheless, a market is made up of many individual consumers and suppliers where each consumer has a different demand function and each supplier has a different supply function, all consumers and suppliers are different, then there must be more than one way for a project to attain and sustain a competitive position [3].

In NeMo project’s case, as there is no pre-defined market that could be examined, the most reliable path is to examine NeMo system not as a standalone solution but as an ecosystem where a wide range of electromobility services will be provided. It must be highlighted that the NeMo Hyper-Network is much more than a platform providing electromobility services and is even much more than an eRoaming platform, the way these are operating now. The NeMo Hyper-Network is an open cloud marketplace for electromobility business actors that gives them tools and methods so that they can extend their business of services provision.

The notion of marketplace already exists in the market and marketplaces are operational for other domains. Specifically, there are existing platforms acting as marketplaces providing accessibility to automotive data and services (i.e. Otonomo Automotive Data Services Platform, Xevo Market). There are also marketplaces for the mobility ecosystem, like the Caruso dataplace, which is a B2B brokering platform, and the WEDEEX platform for energy suppliers and producers. More details about these marketplaces are given in the table 3. All information presented was extracted by the publicly available (*websites & reports*) through online search made.



Table 3: Markeplaces in operation for other domains

No.	Name	Description	Business Model	Status
1.	Otonomo	<p>The Otonomo Automotive Data Services Platform uses patented technology to ingest, secure, cleanse, normalize, aggregate, and enrich car data from multiple sources. It delivers application-ready, enriched datasets and insights and eliminates a significant amount of the development work needed to launch apps and services based on connected car data.</p> <p>Funded by: Private sector</p>	<p>Provide data from 18M vehicles, track 192B miles/year and ingest 2B+ data points/day</p> <p>Platform features:</p> <ul style="list-style-type: none"> • Anonymization • Consent Management • Neutral Server • Use Cases <p>Data sources:</p> <ul style="list-style-type: none"> • Automotive Data • Mercedes-Benz • Avis Budget Group • Road Signs 	Offered solution in the market
2.	Xevo Market	<p>Xevo Market: automotive commerce and services platform that allows both automakers and merchant brands to engage with their customers directly through the touchscreens of their vehicles and vehicle-branded smartphone companion apps.</p> <p>Funded by: Private sector</p>	<p>Provision of convenient, highly-contextual offers and promotions, and enabling consumers to order & pay, make reservations, and find locations, all from their in-vehicle touchscreens with engagement of mobile apps. Easily scalable and already live in millions of connected US cars on the road. Promotes in-vehicle commerce and consumer engagement (fuel, parking, food and drink, reservations, curbside pickup), allowing a B2C relationship for automotive OEMs.</p>	<p>Offered solution in the market.</p> <p>Customers include: Chevrolet, GMC, Cadillac, BUICK, Toyota, LEXUS, Hyundai, Pioneer, Clarion, Panasonic</p>
3.	Caruso dataplace	<p>Marketplace for the Mobility Ecosystem: B2B brokering platform that provides an open, neutral, state-of-the-art, secure and trusted marketplace for all participants.</p> <p>Funded by:</p>	<p>Search & compare data and customers to deal with, fast, legal, cost effective & reliable implementation, transparent and on time operations and monitoring.</p> <ul style="list-style-type: none"> - live data & service connectivity - harmonised data categories 	Offered solution in the market.



	Private sector	- State-of-the-Art scalability & security - User Consent Management Technology	
4.	<u>WEDEEX</u> SaaS platform for energy suppliers and producers. It is a vertically integrated SaaS platform, packed with the full range of energy supply features (from supply management through to billing). Funded by: Private Sector	Platform's features: <ul style="list-style-type: none"> • Billing • Network data acquisition • Customer management • Market access • Electric mobility • Dashboards • Green Trading • Digital energy coach • Smart Contract 	Offered solution in market

Still, no such marketplace exists in the domain of electromobility, providing data, tools and methods enabling the interoperable service provision for any type of actor in the electromobility ecosystem. It should be mentioned that the deployment of NeMo will create a whole new market and all available currently existing solutions will be viewed as niche ones. In other words, it will act as enabler for new and existing products and services, empowering them with increased connectivity and interoperability.

Lately, the Open Charge Point Interface (OCPI) protocol has found great support in its development by several stakeholders and projects, and seems to be increasingly used among electromobility actors. This protocol allows for a scalable, automated roaming setup between Charge Point Operators, managing the charge stations, and e-Mobility Service Providers, who have as customers the EV drivers. It supports authorisation, charge point information exchange (including transaction events), charge detail record exchange and finally, the exchange of smart-charging commands between parties. Its main functionalities are:

- A roaming system (for bilateral usage and/or via a hub);
- Real-time information about location, availability and price;
- A uniform way of exchanging data (Notification Data Records and Charge Data Records), before during and after the transaction;
- Remote mobile support to access any charge station without pre-registration.

Many companies already implement OCPI, support it or participate actively in its development, including several EU energy and smart charging programs.

OCPI is independent and open protocol (free to use) that offers alternative ways to connect by supporting both connections to the hubs as well as peer-to-peer, thus reducing the need to connect to every hub.

The goal of OCPI is to simplify, standardize and harmonize the communication among the growing number of players, and is thus partially competitive to NeMo, as regards the Pan Business Model and regulatory guidelines



European eRoaming possibility. NeMo addressed this need by developing its Open Inter-roaming protocol that enables the exposure of the several hubs' roaming features to the Hyper-Network, as well as by creating the Common Information Models, as an extended protocol language. The latter is more extended than OCPI as it includes structures for smart charging functionalities, grid loads management, vehicle preconditioning, wireless authentication processes, vehicle data sharing (Extended Vehicle standard), etc. Although OCPI is an important advancement to a seamless electromobility experience, the NeMo Hyper-Network is much more as it provides several tools, and a marketplace for all electromobility service providers, not only related to charging. Additionally, it provides the functionality to create added value composite services, via the service creation domain, and the delivery/registry of those in a common format, via the extended NeMo CIM, to all involved stakeholders extending to energy aggregators, grid operators and any third IT provider, upon a secured and distributed environment. NeMo offers the technical as well as the business framework enabling connections and discovery of services among all actors in the ecosystem.

2.4.2 Marketing Goals

In the current phase of the project the goals that are presented in this section are a series of hypotheses that will be further evaluated on how realistic they are. Currently, goals have been set for six different aspects. These aspects are the:

1. Number of **nodes** (*distributed IT connection point*)
2. Number of **node owners**
3. Number of **big size** NeMo members who own a node
4. Number of **small size** NeMo members who do not own a node
5. Number of **services** available in the Hyper-Network
6. Number of **transactions** (*i.e. service invocations via the Hyper-Network*)

The achievements per aspect will be measured in regular intervals after the project's end and will be evaluated according to the targets presented below. The assessment will be made in a time frame as presented in the figure below.

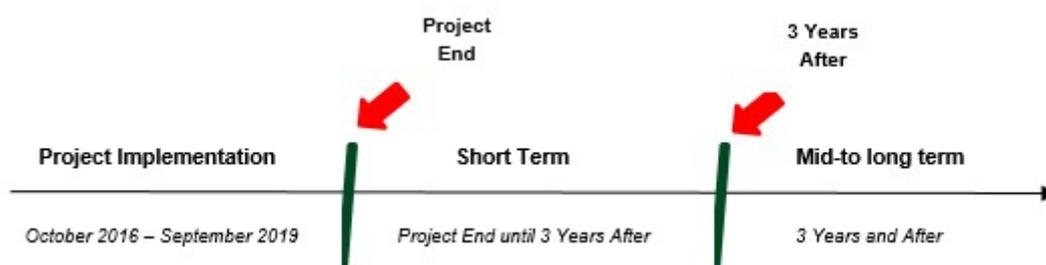


Figure 2: Marketing Goals Timeframe

For our analyses, the short term frame has been defined from the end of the project until 3 years upon its completion, when it will be important to widely communicate BAEM and the functionalities it provides, and attract as many subscribers, service providers, nodes, nodes' owners, etc., as possible in order to make it sustainable. Within the context of this deliverable, the mid-to long term period is not examined as it does not serve its scope.



After studying carefully the historical data about global electric car sales and market share in Europe for the period 2013 -2018 as provided in the report **Global EV outlook 2019** [4] the attempt was to set realistic goals based on the trends occurred in the previous period.

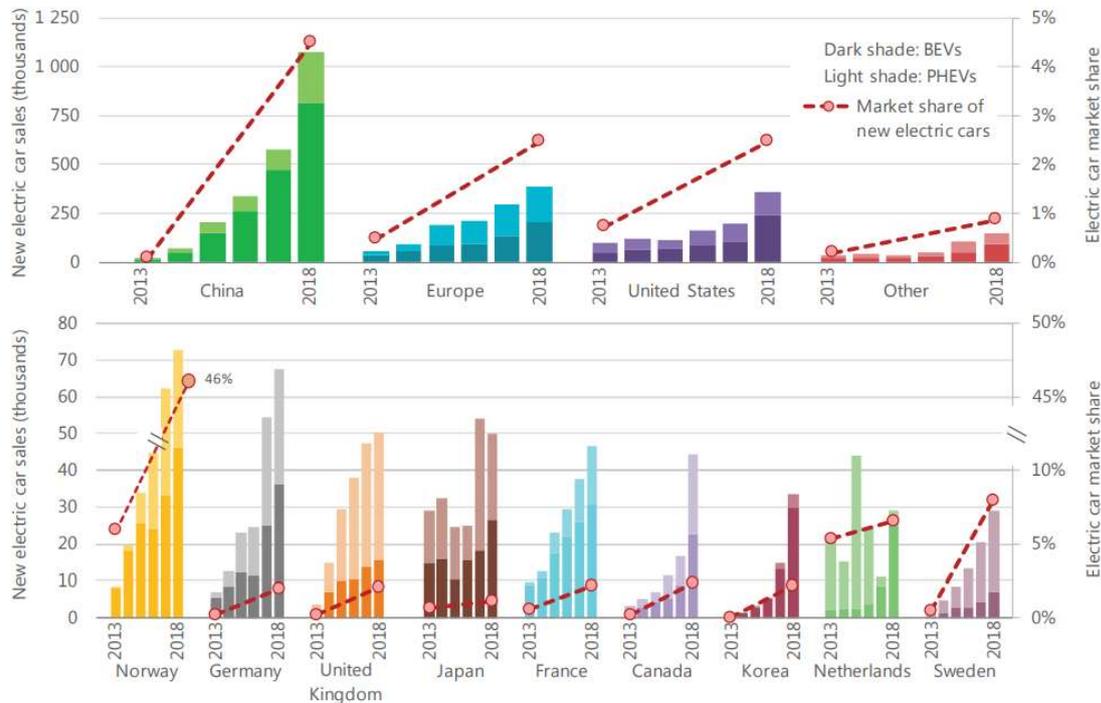


Figure 3: Global electric car sales and market share, 2013-2018¹

In 2018 Europe’s electric car fleet consisted of **1.2 million vehicles** with market growth of **385,000 units within a year**. Only information about Europe is presented, nevertheless **Global EV outlook 2019** provides statistics and data in global level. There are possibly several barriers (*e.g. political, cultural, etc.*) in markets such as the Chinese or the U.S. ones that can create miscalculation in our estimations around BAEM, so at this stage Europe’s market is the focus.

The marketing goals (*low – high*) were set per aspect that will act as guide for the effort that will be put and also it will give the opportunity to BAEM’s board to monitor their performance towards sustaining the offered solution within the short term period. The marketing goals (*low scenario – high scenario*) in the short term period are presented in detail in **table 4**. The Y1 goals are the same for both scenarios. The lower limits in Y2 and Y3 depict the low scenario (**S1**) and the upper limits the high scenario (**S2**).

- Aim for the short-term period **Project End** until **two years after** is to have at **least 30 nodes** available at the Hyper-Network.
- Within the first year of BAEM operation, at least **10,950 transactions** will have occurred via the Hyper-Network, while in the second year at least 100% of increase is expected.
- Aim for up to **30 services** available in Y1 and at least 60 in Y2. As the NeMo BAEM will start building trust around its services, as well as its brand name, in parallel the market

¹ **Source:** Figure 1, p. 10, IEA (2019), "Global EV Outlook 2019", IEA, Paris



of electromobility will be more mature in two years from now as customer's behaviour towards EVs will continue to rapidly change.

Table 4: Marketing Goals (low-high scenario) in the short term period

	Year 1	Year 2	Year 3
Number of nodes	Up to 10	20 - 50	30 - 100
Number of node owners	Up to 10	20 - 40	30 - 60
Number of big size members who do now own a node	Up to 10	20 - 40	30 - 60
Number of small size members who do not own a node	Up to 10	20 - 40	30 - 60
Number of services	Up to 30	60 - 120	90 - 180
Number of transactions	10.950 - 21.900	21.900 - 87.600	32.850 - 131.400

The **total costs** for the BAEM operation have to be covered by the expected revenues, which are the **subscription fees** and **fees per transaction**. The target fees for both scenarios are depicted below. It must be noted that if the marketing goals reach the **high performance scenario (S2)** and demand grows in quick pace, then the total costs for BAEM's operation will be covered and profit could be generated if using the same target fees as in S1. Nevertheless, as already mentioned in previous chapters, BAEM will not aim for profit but for sustaining the offered Hyper-Network and benefiting the EU single market and European citizens. For this reason, the fees that any interested party would be asked to pay in order to be a member of BAEM will be **lower** compared to S1.

Table 5: Fees in S1

	Year 1	Year 2	Year 3
Node owners	€ 20.000	€ 20.000	€ 20.000
Big size members who do not own a node	€ 5.000	€ 5.000	€ 5.000
Small size members who do not own a node	€ 1.000	€ 1.000	€ 1.000
Fee per transaction	€ 0,50	€ 0,50	€ 0,50

Table 6: Fees in S2



	Year 1	Year 2	Year 3
Node owners	€ 15.000	€ 15.000	€ 15.000
Big size members who do now own a node	€ 3.000	€ 3.000	€ 3.000
Small size members who do not own a node	€ 500	€ 500	€ 500
Fee per transaction	€ 0,50	€ 0,50	€ 0,50

Lastly, in case of high volume of transactions that will further exceed the hypothesis of S2, and given that all BAEM's costs would have been covered, the € 0.50 fee-per-transaction could be reduced.

2.5 Analysis of the BAEM Business Model

The current section makes an analysis of the identified elements and forms the hypothesis that will assist the BAEM Board to create - when necessary - a Business Plan that will ensure the sustainability of the Hyper-Network. The BAEM Business Model along with the Draft Market analysis will deed as the starting point for a future Business Plan.

2.5.1 Value Proposition

The value proposition block is considered as the starting point when creating a Business Model. It describes the offer to the consumer (*what's in it for me?*) as well as how and why it satisfies their needs. The Hyper-Network is a distributed environment composed of NeMo Nodes with an open architecture based on standardised interfaces to enable the interoperability of electromobility services among service providers, so that they are seamlessly offered to the final users. The Hyper-Network facilitates the **data exchange** needed for integrated and interoperable e-mobility ICT services (*both B2B and B2C*).

By joining BAEM and the NeMo Hyper-Network, a new business partner will have access to the main community gathering all the electromobility actors. Any partner can make business with any of the business partners on the Hyper-Network and enjoy their expertise on specific areas. Partners will be able to gain overview of the whole ecosystem and be at the cutting edge of innovation and quickly identify, test and develop a new service within the Hyper-Network.

What's the offer?

The NeMo project provides a distributed, Blockchain-based environment to **create, deliver** and **execute** business services to all ecosystem partners connected to the network where all participants **share the same data** about:

- Partners;
- Services;
- Contracts.



The system will deliver its value proposition via its web portal. The NeMo IT environment enables seamless integration of data and services for developers and business users.

- a distributed service IT environment where partner, service & contract information are stored in a decentralized manner using a distributed ledger technology (*Hyper Ledger, Block chain*);
- an IT environment, that allows developers search & use third party services;
- a BPMN-based tool-suite, that provides the possibility to specify value-added electromobility IT services;
- an IT deployment/delivery mechanism that lets business users easily take part in the NeMo Open Marketplace;
- Common Information Models to commonly describe the business objects for all electroMobility services;
- increased innovation towards Digital Single Market for Europe.

NeMo provides a set of new and adapted electromobility services, offered through the **Open Cloud Market place**, including:

- **Hyper-Network horizontal services**,
- **Grid related services**,
- **EV driver / owner** related services, and
- **EV** and **battery** related services.

The NeMo project has also designed an open protocol, the **Common Information Models** (*meta-model*), that contains and describes all the data required by electromobility actors in a structured way, incorporating existing information representation and exchange standards.

Table 7: Offer per customer segment

No.	Customer	Offer
A.	OEM	<p>Valorise the Customer data by giving access to Third Parties</p> <hr/> <p>Provide advanced EV services (list of ePOI, smart route planner, sophisticated smart charging) embedded in the car</p>
B.	Charge Point Operators	<p>Provide dynamic pricing to your customers based on traffic influence or local grid capacity</p> <hr/> <p>Connect to eMSP by OCPI or through eRoaming platform</p> <hr/> <p>Enjoy of state of the art EV services (booking, smart charging) and access to high level quality services</p>
C.	eMSP	<p>Access to accurate ePOI Data in one click</p> <hr/> <p>Be able to develop and offer advanced interoperable electromobility services for your customers (i.e. itinerary planning, smart charging, battery protection)</p>
D.		<p>Exploit EV charging to provide new services for grid stability and balancing purposes</p>



Energy players (TSO, DSO, Energy providers, Aggregators)	Be able to provide your customers EV with tailored offers and dynamic pricing
	Introduce more flexibility in the grid by increased communication and data availability of various actors within energy sector or other
E. Navigation providers	Getting data from EVs and charging points to provide advanced itinerary planning for customers
	Be able to get EV data from multiple OEMs with the same data structure
F. Public authorities	Provide incentives for their people (free tolls, parking)
	Access to usage of data to improve charging stations location

2.5.2 Customer Segments

The current block of customer segments in the BAEM Business Model presents the groups of potential **customers (subscribers)** that may create revenues for the Hyper-Network.

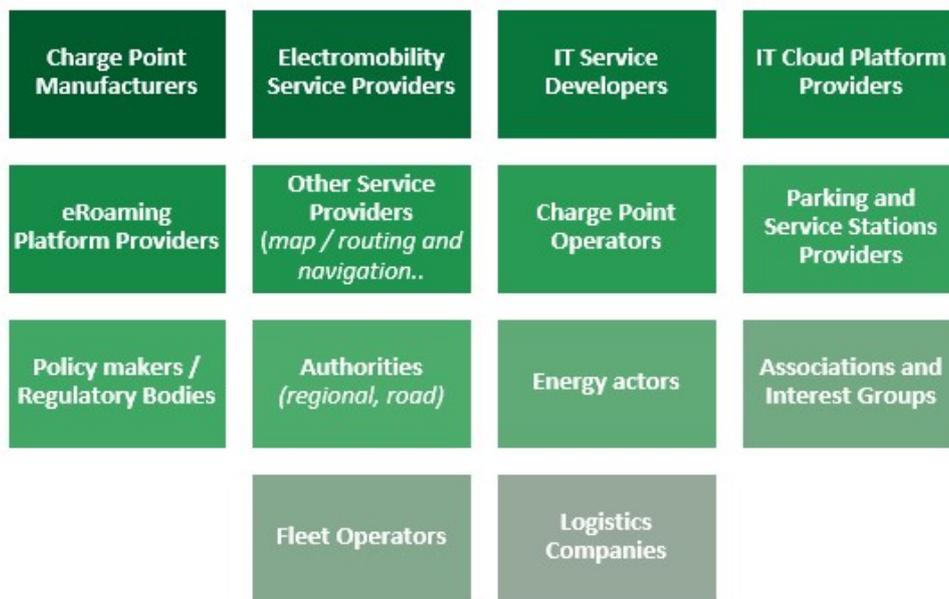


Figure 4: Customer segments

The customers of the NeMo offered solution can be clustered into 14 large groups:

- **Charge Point Manufacturers;**
- **Electromobility Service Providers;**
- **IT Service Developers;**
- **IT Cloud Platform Providers;**
- **eRoaming Platform Providers;**
- **Other Service Providers**
(map/routing and navigation/travel and traffic information);
- **Charge Point Operators;**
- **Parking and Service Stations Providers;**
- **Policy makers / Regulatory Bodies;**
- **Authorities**



(regional, road);

- **Energy actors;**
- **Associations and Interest Groups;**
- **Fleet Operators;**
- **Banking Service Operators;**
- **Logistics Companies.**

2.5.3 Channels

The consortium can deliver the value proposition of the NeMo Hyper-Network to its potential members through its own channel (*web portal*) as well as partners' channels. These channels can serve as efficient and cost-effective tools for conveying the desired "message" to the potential customers. Nevertheless, the possible use of IBM, Gireve, Hubject, Renault, CRF, TomTom, Verbund (*commercial partners*) sales channels would require significant resources for network's demonstration as sales staff would be employed, travel costs would be occurred and other technological equipment will be deployed.

On the other hand, academic partners (*ICCS*), associations (*ERTICO*) and municipality (*Barcelona*) have a large network for promoting the project's results. This network is comprised by students, professors, policy makers, charge point operators, IT companies, institutions related to the project's topic, press, and media and so on. Overall, the aforementioned networks will be used to widely communicate the platform. Other channels that are considered for usage:

- Publications;
- Post on blogs related to electromobility;
- Social media posts on NeMo accounts;
- Newsletters published by partners involved in NeMo consortium;
- Promotional Materials;
- Press releases published by the involved partners;
- Articles and posts at partners' organizational websites and social media accounts;
- Presentations of the platform at relevant conferences;
- Presentations of the platform in workshops open in public;
- Presentations of the platform in local actors of electromobility.

Given that the majority of the expected customers are businesses, the most appropriate mean for **Business-to-Business (B2B)** communication is a direct one through face-to-face meetings and live demonstrations of the system. Before face-to-face meetings, research on identifying relevant contacts should be done and a preliminary introductory communication via phone and email should be followed as a practice. In addition, **recommendations** about the NeMo system from prestigious customers, such as car manufacturers, charge point manufacturers, energy actors, etc., that have already used the system could be sent to potential customers via post or email.

In order to promote the NeMo Hyper-Network, a business web portal, as mentioned previously, will provide the channel needed so that electromobility players and potential business partners / BAEM members can discover all relevant information about the Hyper-Network, and its main available services, and understand the connections to help them make business specifically in their field of expertise. The goal of the portal will also be to facilitate engagement of potential



partners for further subscription to BAEM and consequently create a real community working for the development of electromobility in Europe.

The current NeMo website is not suitable for this as it was designed as a dissemination tool during the project's timeline and would require a private area for members (with log-in creation) and allow entry directly into aspects of the Hyper-Network. The Business Alliance for Electro-Mobility (BAEM) shall be in charge of managing and maintaining a business relevant website as a communication channel. On this BAEM web portal, targeted topics can be covered providing more insight to the BAEM and the Hyper-Network. The information should focus on explaining i) the BAEM, its structure and its vision; ii) the Hyper-Network, how the technical network operates, its tools and models (CIM), providing a general description of the main advantages of joining the Network, as well as more tailored ones depending on the status and role of the viewer; iii) exhaustive list of available services; iv) the way for a prospect partner to apply for subscription to BAEM and the Hyper-Network and enjoy all the services provided or reach out for further information about the NeMo Hyper-Network if needed with a contact person; and v) the activities undertaken by BAEM along with the electromobility advancements.

2.5.4 Customer Relationships

The hands-on experience of several consortium partners in providing services/products has shown that **building consumer trust** is one of the most important aspects in being sustained in the market. For this reason, the NeMo Business Model will be based initially on partners' personal contacts with potential customers, hence their well-established networks will act supportively on that. By this practice, the costs for this type of activities will be kept low. The consortium will rely upon these well-established contacts across Europe (and beyond) with service providers, charging point operators, municipalities, mayors, decision makers, public authorities, car manufactures, energy actors, IT companies, innovative entrepreneurs that by the word of mouth will act as a **multiplier factor** attracting more customers and generally audience beyond these contacts. Supplementary, the constant participation of project partners in public events (*local, national and international*) accompanied by **live demonstrations** of the NeMo Hyper-Network will foster trust around it.

It is important to mention that the **satisfied members and subscribers**, who will be the first ones to deploy a NeMo node or use its functionalities would be deemed as "promoters". Their experience as users, as well as their recommendations will motivate more actors to use the network and be benefited by the offered solutions. Lastly, a **support team** - *consisting of the technical partners of the project* - would serve as helpdesk for users' queries. The form of this helpdesk could be a hotline, email, skype calls (*or other communication tools*) while an on-site customer support has been examined.

2.5.5 Key activities

The NeMo Hyper-Network has been developed, tested and evaluated during the project's lifecycle. Nevertheless, after the end of the project further upgrade would be needed in order to achieve full commercial viability. The actions that are considered significant in order to sustain the NeMo Hyper-Network and further exploit its outcomes are:

- **Upgrade & Maintenance** of the system;



- **Demonstration** of the system;
- **Marketing & sales** activities;
- **Training program** for customers (*municipalities, CP Operators*);
- **Collect data** from charging points, end users;
- **Provide support to customers** (*helpdesk*) via email, hotline, skype, on site visit at customers' premises.

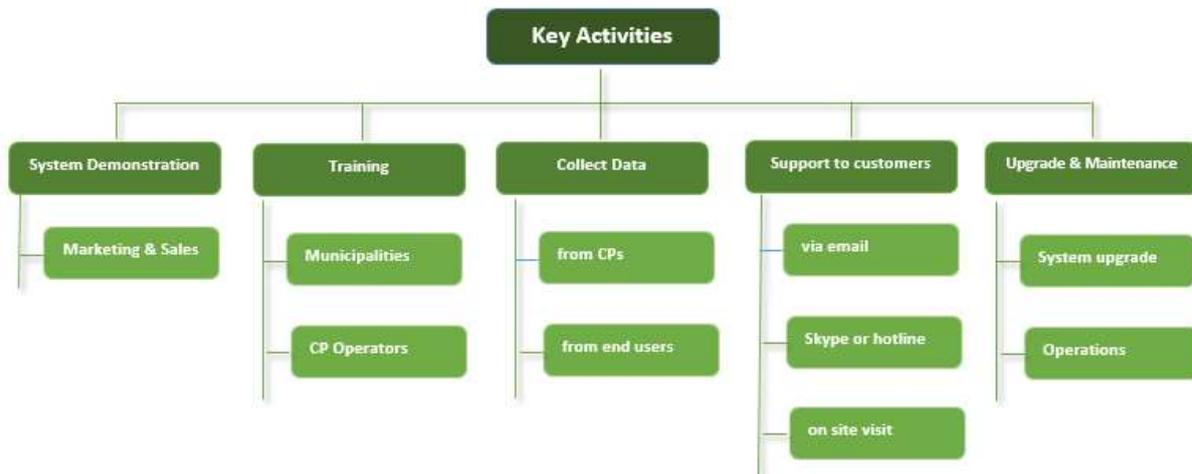


Figure 5: Key Activities for sustainability

2.5.6 Key Resources

The resources that are necessary to create the value proposition for the subscribers and members of the NeMo Hyper-Network are considered as assets for its sustainability, as per any Business Model. The consortium has so far identified and categorized these resources as listed below:

- **Hardware and Cloud infrastructure** for the components' function (*servers, etc.*)
- **Human resources** (*developers, trainers, sales personnel etc.*)
- **Financial resources**

The **financial resources** are needed in order to realize a range of activities for the creation of the BAEM's offer to its subscribers. Such activities are: **a)** upgrade of the NeMo Hyper-Network (initial investment); **b)** maintenance and smooth operation; **c)** hardware acquisition; **d)** loyalty fee (IPR fees); **e)** travel and subsistence costs for demonstration of the system to potential subscribers; **f)** design and print marketing materials (*when needed*).

Human resources, specifically staff of developers, play an important role in key resources since the solution should be further upgraded to full commercial viability after the end of the project. Moreover, anticipating a high volume of network's users, maintenance and smooth operation of the system is essential. The market creation and the attraction of new subscribers to join the network that will make it financially viable is highly dependent on the sales staff, so their contribution should also be highlighted.

Lastly, **cloud service** and **hardware** provide the necessary infrastructure for delivering the offer to BAEM subscribers.



2.5.7 Key Partners

In every Business Model, key partners are considered significant as they provide the necessary input to the business for delivering the value proposition. The cultivation of buyer-supplier relationships assists in optimizing the operations and reduces any potential risks that eventually lead the business to focus on its core activities. For this reason, the needed partnerships in order to deliver our service were identified. The key partners are:

- E-Mobility service providers;
- Charging Points Operators;
- Energy players;
- Cloud service providers;
- Sales partners network;
- Technical partners involved in the development of the NeMo Hyper-Network.

The first line of partnership is the technical partners involved in the development of the NeMo Hyper-Network. They have the know-how on system's components and their integration. This means that the system's upgrade, as well as its maintenance, will be undertaken by the technical partners of NeMo project.

Other partnerships that are also important are sales networks active in electromobility sector (*charging points, energy actors, e-mobility service providers*) that would attract customers and act in a multiplier manner.

2.5.8 Revenue Streams

After identifying the subscribers' segments, the revenue sources, which will generate income for the Hyper-Network and render it viable after the end of the project, were explored. As this deliverable consists of a plan of sustaining and exploiting the NeMo Hyper-Network, the revenue streams listed in this section form a hypothesis that its elements will be further investigated, tested and discussed among BAEM (*Business Alliance for Electro-Mobility*) partners.

The revenue model that has been accepted by all partners and was perceived as the one that better fits our case is the subscription revenue model. For the creation though of this document, several **revenue models** (*income generation models*) have been discussed and examined among the consortium partners throughout the project's lifetime. During the offline and online discussions that the NeMo consortium has made on the topic, the following variants of this revenue model have been examined for ensuring that all possible options and arguments have been expressed.

- Pay per transaction;**
- Pay-per-use;**
- Subscription** (*basic, pro, premium*);
- HomeKit** (*by Apple*) & **Nest** (*by Google*) resemblance.

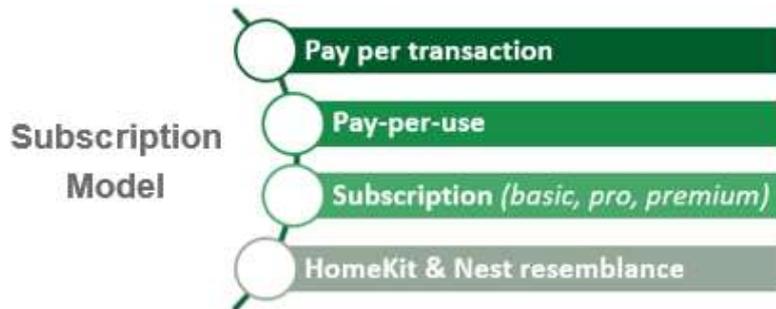
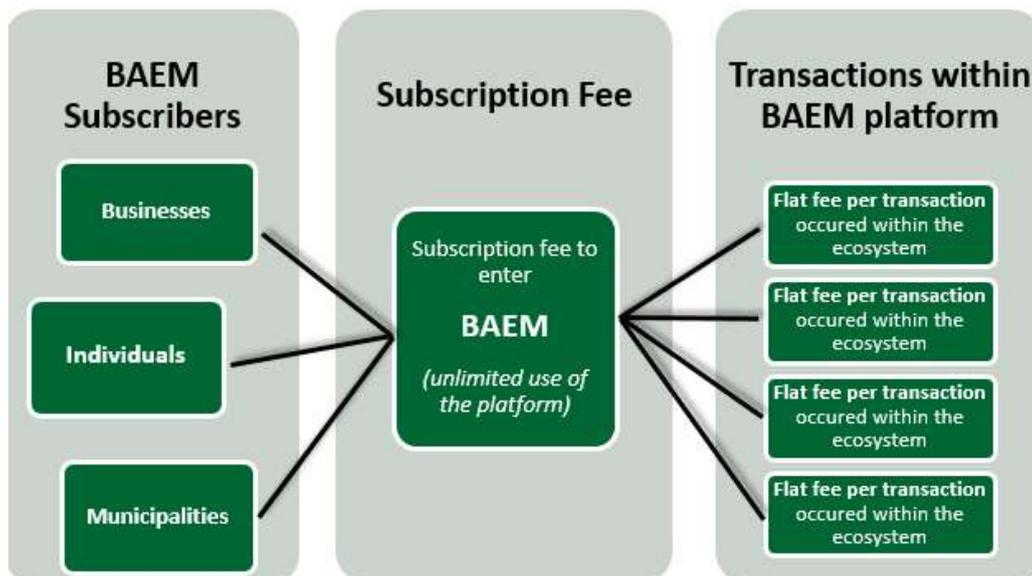


Figure 6: Examined variants of BAEM's Revenue Model

Nevertheless, the most appropriate one that better serves the needs of the electromobility market in Europe and at the same time the scope of creating the NeMo Hyper-Network and making it available in the market via the BAEM, is the combination of **subscription fee** and **payment per transaction**.

In other words, **whoever** (*businesses, municipalities, individuals²*) wants to **offer services** and **products** via the ecosystem of **NeMo's Hyper-Network** should become a **member of BAEM** and **pay a subscription fee** for a pre-defined period. Moreover, a small **flat fee** per transaction will be set for the maintenance costs of the Hyper-Network (*higher volume of transactions will lead in higher variable costs*). It should be noted that a variant of the flat fee per transaction has also been discussed among the consortium under the form of a **standard commission rate** (*percentage*) per transaction occurred within the Hyper-Network.

Overall, the fees will not aim for profit, but to generate income only for maintaining and upgrading the NeMo Hyper-Network with main goal to contribute in **Europe's Single Market** and entrepreneurship around the topic, promoting **Electro-Mobility's benefits** and facilitating **EVs usage** by the European citizens.



² Individuals: IT professionals, developers, freelancers who want to provide their services at the platform and/or potential future entrepreneurs before establishing a start-up relevant to Electromobility who wish to seek information and further explore this market by providing their pilot service/product.



Figure 7: Representation of BAEM's Revenue Model

Expecting that the system's *subscribers* will be businesses (*B2B*), one of the most appropriate variant of subscription revenue model is to secure the customer on a **long term contract** with a pre-determined fee so that they will be able to use the Hyper-Network and consume services (*according to their service contracts*) without any disruptions. In order to follow this model, the BAEM members should take into serious account that the cost of customer acquisition could be high. Long term subscription could also give discounts as a “reward” to loyal customers.

2.5.9 Cost Structure

The production of any product/service, in general, involves two types of costs: the fixed and the variable ones. The initial attempt to define the main costs that will occur for sustaining the NeMo value proposition and deliver it to subscribers led us to the conclusion that both cost types exist in the cases of **a)** upgrading the system, **b)** maintaining its smooth operation, and **c)** attracting customers (*sales and marketing*). These costs can be clustered into the following categories:

- **Cloud infrastructure** costs
- **Upgrade** costs
- **Training** costs
- **Travel** costs
- **Customers' support** costs
- **Marketing & sales** costs
- **Maintenance costs of IT structure**
- **Staff costs** (*developers, trainers, sales representatives, customer support agents*)

The main costs that concern the upgrade of the system include staff costs and infrastructure costs. Staff costs though do not include only the salaries of the developers, but also the employees who will undertake sales, training and customers' support activities.

The travel costs, which can also be allocated in marketing & sales costs, cannot be overlooked as there is a high possibility of demonstrating the system in companies and other actors across Europe and beyond. Moreover, the marketing costs for targeted campaigns to promote a culture of using electromobility services and EVs that would further reinforce the ecosystem around NeMo Hyper-Network (*more EV users will attract more companies in deploying interoperable electromobility services and the Nemo Hyper-Network*) will increase the *Hyper-Network's* demand (*economies of scale*), so training programs and events for different kinds of audiences should also be calculated.

It should be mentioned that in this section the costs of creating the value proposition of the NeMo Hyper-Network, as they have been already covered by the EU grant, are not examined. The costs examined are the ones that will occur after the “succession” of NeMo by BAEM, which will undertake the task to sustain the project's Hyper-Network and offered solutions, and make them available to the market. This means that an initial investment (*capital*) required for covering the upgrading costs of the Hyper-Network is also calculated.

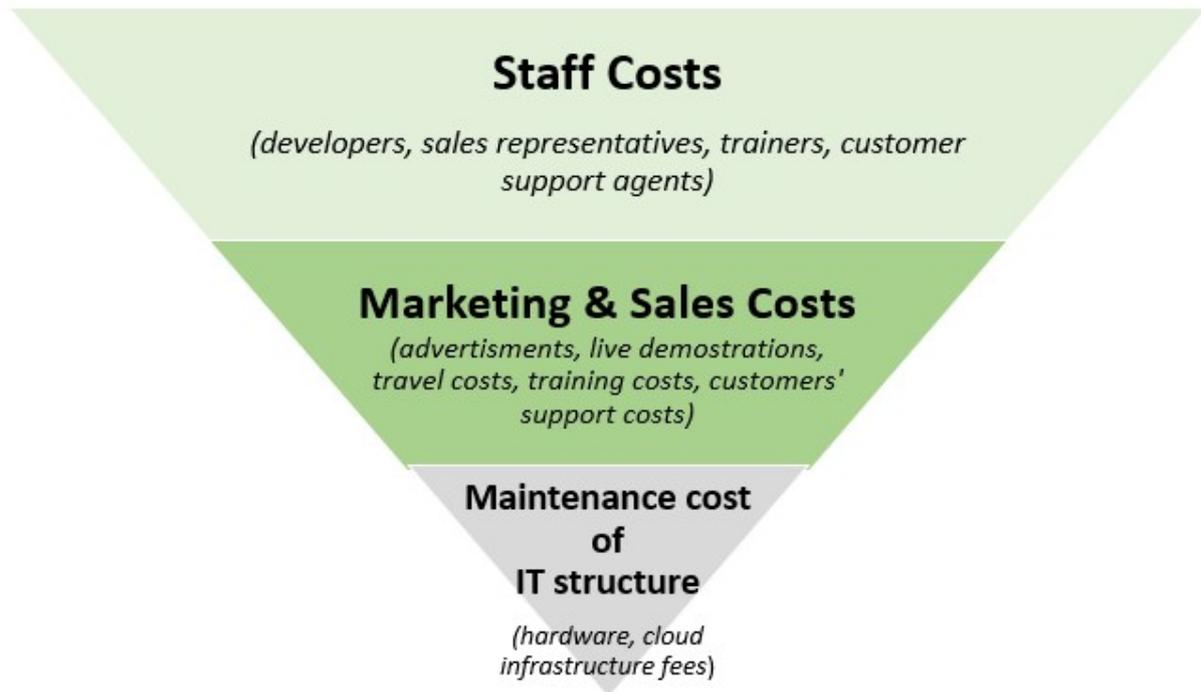


Figure 8: Operating Costs

A table that analyses all the identified – so far - costs along with a **3-year projection** of rough estimations is provided in Annex 1, that is submitted as a separate confidential attachment to this deliverable. All costs have been categorized into **variable** and **fixed** ones for assisting BAEM's board to better define the subscription fee (*pricing*) after the completion of NeMo project.

BAEM Cost Structure Analysis



Figure 9: BAEM Cost Structure Analysis

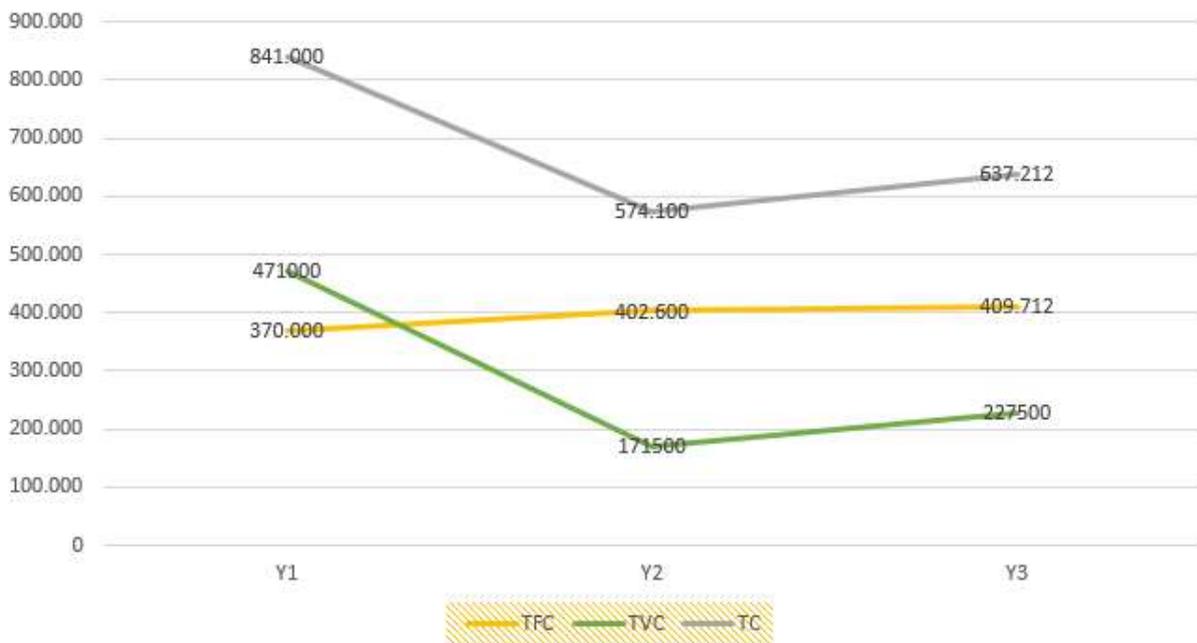


Figure 10: Cost Trends in short term period (Y1-Y3)



2.5.10 Expected Revenues

After calculating the total costs that will occur within the short-term period in order for BAEM to offer the Hyper-Network to the market and set the marketing goals for the same period, the expected revenues for both scenarios S1 and S2 were calculated (revenues are in Euro). The results of the profit / loss analysis are presented in the confidential Annex 2 to the deliverable.



3. Regulatory and business requirements for sustainability of the Hyper-Network

As previously discussed in Deliverable 1.3 of the NeMo project, the interoperability between different actors from different domains is one of the major barriers for electromobility. NeMo has tackled this barrier via its Common Information Models and via the establishment of the Hyper-Network components that ensure the interoperability of service execution across providers via the Hyper-Network.

But apart from technical issues, also legal and businesswise issues need to be harmonised to ensure interoperability, and this requires cooperation between countries and between actors from different domains.

Below there is a list of requirements and recommendations to support the sustainability of the NeMo Hyper-Network.

3.1 Regulatory requirements

An important barrier in the regulatory framework was identified in NeMo Deliverable 3.2, and is relevant to the assignment of IDs, the unique identifiers for CPOs and eMSPs, that should be specifically defined by a respective national institution and controlled by authorities. Four countries have defined a specific association responsible for these IDs assignments, France with AFIREV, Germany with BDEW, Netherlands with eViolin and Austria with AMP, while in other countries, CPOs and eMSPs assign themselves their operator IDs, creating a risk, as there is no central entity ensuring the uniqueness of the identifiers. The above mentioned entities have tried, via the eMI3 working group, to address this topic and presently this has been transformed into a relevant programme support action, the IDACS project: ID AND DATA COLLECTION FOR SUSTAINABLE FUELS IN EUROPE, where all ID issuing bodies from countries that these do exist are participating with the directive that each member state needs to set up one official authority taking care of ID issuing. The results of this action will meet and support the regulatory requirements of the Hyper-Network.

Another important barrier results from the regulatory framework for grid operators, who have a natural monopoly position under regulated rules and tariffs that could be unsuitable for the further development of e-mobility market [5]. Regulation is typically inefficiently constrained by asymmetries of information between the utility and the regulator, or, possibly worse, the form of regulation discourages collecting the information that would be needed for efficient charges. Industrial players active in EV charging are driven by their interest to localize CPs according to final user's needs while DSOs choices are driven by other aspects, as needs and constraints of the distribution network. There is considerable experience with incentive regulation, and a recognition that innovation needs active stimulation, ideally through competitive processes, and in large part that is left to Member States subject to EU Directives (e.g. on unbundling, independence of the regulator, etc.).

Electricity suppliers, DSOs and TSOs or energy aggregators, within the Hyper-Network may be directly involved in the EV value chain as EMSPs, but others will be interacting with EMSPs or



CPOs and will need to ensure that these interactions are possible and efficient. The most important change to make to the regulatory framework governing these actors is to allow / incentivise them to secure these various services competitively, rather than restricting the eligibility of service providers. Thus, if balancing services can only be procured under restrictive contract conditions (e.g. above some minimum size, and with registration as a balancing responsible party and with various equipment requirements) then it may be difficult to overcome the barriers for new entrants such as aggregators. The main regulatory/legal barrier to remove is any restrictions on what agents are allowed to sell and/or meter electricity making use of intelligent metering systems and offer services to or as aggregators. Prices at which they transact should reflect the relevant costs and the system should allow the provision of smart charging services, flexible consumption and energy storage via dynamic pricing services/ad-hoc solutions, bidirectional services based upon the network capacity, the availability of RES, the EVs storage power capabilities, etc. The main action needed will be requirements to support flexibility services to the power system and frequency regulation and participation of EVs for dispatching services.

Finally, 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 electro-mobility and thus the NeMo sustainability.

3.2 Businesswise requirements

3.2.1 For Hyper-Network partners

After subscribing to BAEM and using the NeMo Hyper-Network, a new partner will have access to the services available on the Hyper-Network as well as their owners. The Hyper-Network facilitates their contact in order to make a partnership and for the service consumer to use the service provided. In case the new partner is a service provider, he will be able to create or integrate (in case of existing service), publish and commercialize the developed service. The Hyper-Network provides all the tools for developers to create a service.

When a business partner develops a service, he will have to define its business model. One of the parameters to consider is the variable cost to run his service within the Hyper-Network, which will depend of the service usage rate from the service consumers. A module in the Hyper-Network should give some guidelines regarding these running costs. The service providers should have access to technical and business support that will be managed by the BAEM and will guide the partners on how to create and consume different services. The support should be reachable through the Hyper-Network web portal (an email address or a phone number should be created for this purpose).

To implement an added value service, a service that relies on other services available on the Hyper-Network, the developer of the new service will have to contact the concerned service owners, and agree with their commercial service offerings by concluding the related service contracts in order for him to be able to invoke these services.

Once any service is developed, before publishing it on the Hyper-Network, the service provider will have to check several things:

- Creation of the commercial offer (usage rate, price, eligible service consumer)



- Quality check (as explained in the D7.1)
- Validation by the support (quality & performance test)

Once the service provider has passed this checklist, he will be able to publish the service on a pre-production environment of the Hyper-Network. The environment will be accessible to designated service consumers for testing the service.

3.2.2 For CPOs and EMPs

Within NeMo, the Open Inter-Roaming protocol was developed and implemented by the two e-roaming platforms members of the project, Hsubject and Gireve, in order to expose their eRoaming features to the network via inter-connection with each other, and establish a functional implementation for any third similar player (*this work is presented in D3.2*). Besides these two platforms, the solution extends to the Charging Point Operators (CPOs) who manage the infrastructure of chargers and the Electromobility Service Providers (EMSPs or EMPs) who enable customers to charge their cars.

The technical implementation should be followed by the respective commercial agreement so that the connections allow the customer to charge his EV and clear payment at any CPO connected to any of these two eRoaming platforms.

Within NeMo, the data and information exchanged by the different actors are standardized. For example, in the case of Hsubject and Gireve:

Case #1: the customer using an EMP connected to Hsubject is able to charge his EV by using a CPO connected to Gireve, via the following clearance (image simplified to end points flow).

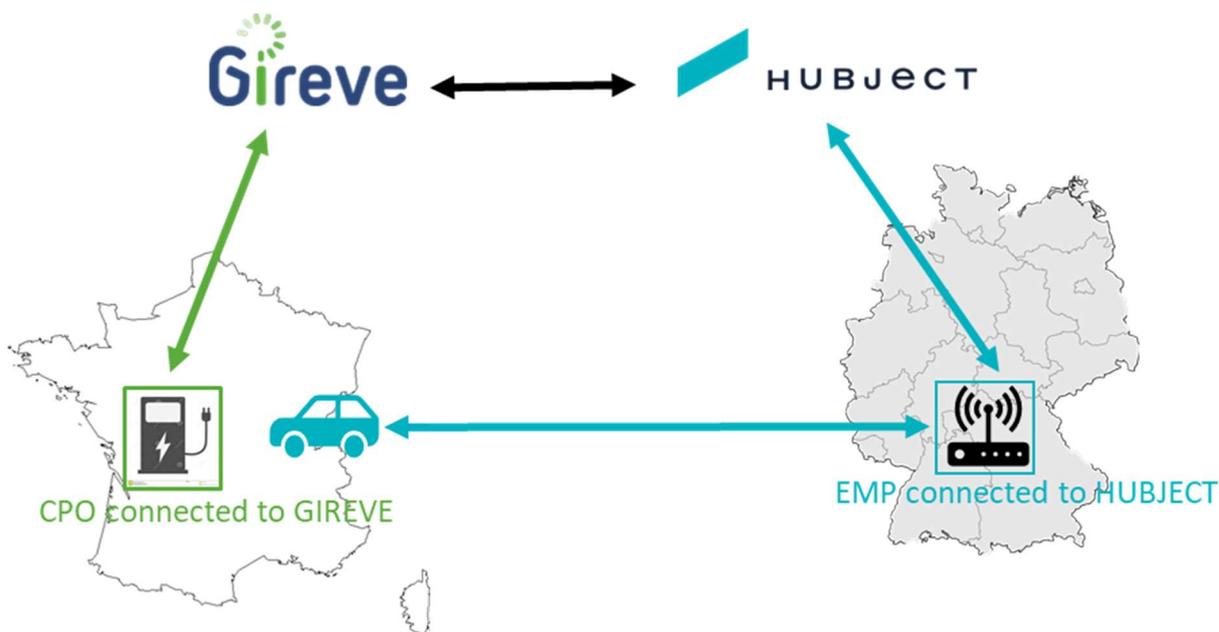


Figure 11: Hsubject's user charges at Gireve's CPO

Case #2: the customer using an EMP connected to Gireve, is able to charge his EV by using a CPO connected to Hsubject, via the following clearance (images simplified to end points flow).

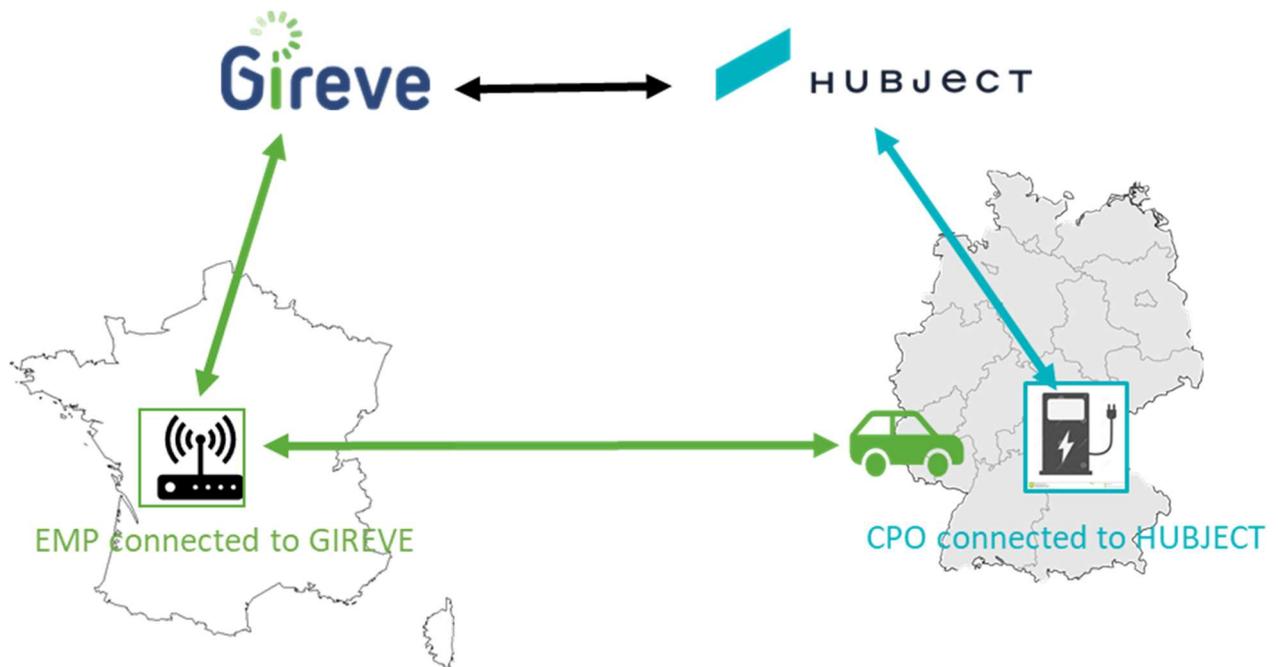


Figure 12: Gireve's user charges at HUBJECT's CPO

To enable the above mentioned connections in the business world among any two actors, it will be necessary to make a technical agreement between the two similar to that prepared in NeMo: the «**Connection Service Agreement**» with Pan European eRoaming conditions. The purpose of this agreement is to set forth the terms and conditions under which the parties shall provide a connection service to each other, and defines the object and target of the contract, the connection services and the quality of these service (SLA: Service level agreement), the governance and the mutual obligation, the intellectual property and confidentiality, the law and jurisdiction.

Here for example is the preamble of this agreement prepared within NeMo, summarized at the following points:

1. Platform-A and Platform-B both have developed an e-roaming platform to facilitate exchanges between e-mobility service providers (EMPs) and charge point operators (CPOs) in Europe.
2. The parties are willing to support an open and interoperable e-mobility market based on e-roaming.
3. The parties wish to give their clients, either EMPs or CPOs, when connected to their platform, the opportunity to access to the platform of the other party and to the services offered by the other party.
4. The parties agree to set up a connection service between both platforms based on existing protocols.

Once this agreement is signed between the two actors, the technical connection can be established. Since there are and there will be more CPOs than EMPs, EMPs shall lead the connection to new CPO they want to be connected with.



Here below is the description of the agreement process led by EMPs in each case:

An EMP "H" Connected to HUBJECT wants to be connected with the CPO "G" connected to Gireve

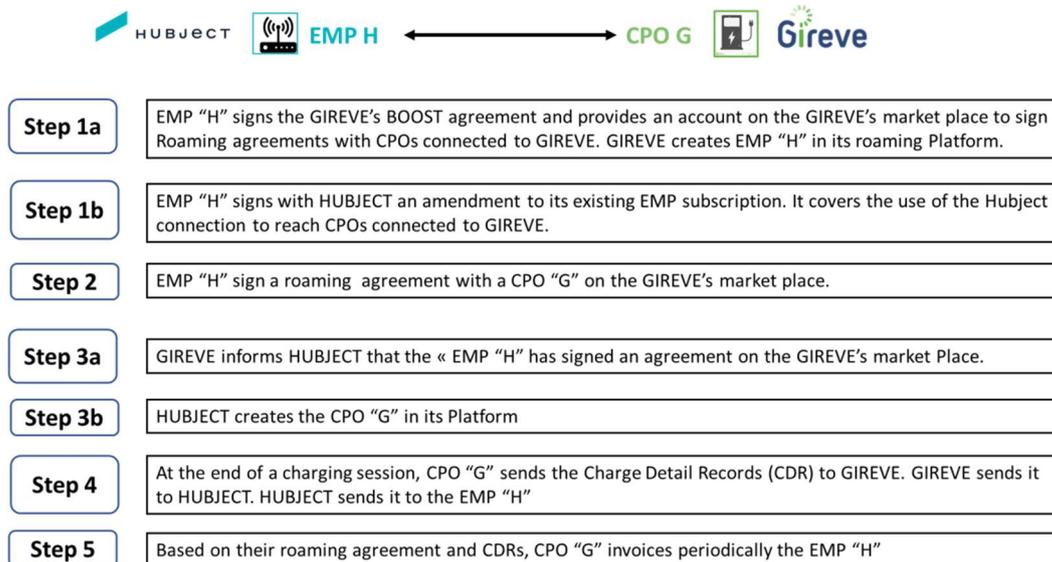


Figure 13: Hubject's EMP connection agreement with Gireve's CPO

An EMP "G" Connected to GIREVE wants to be connected with the CPO "H" connected to Hubject

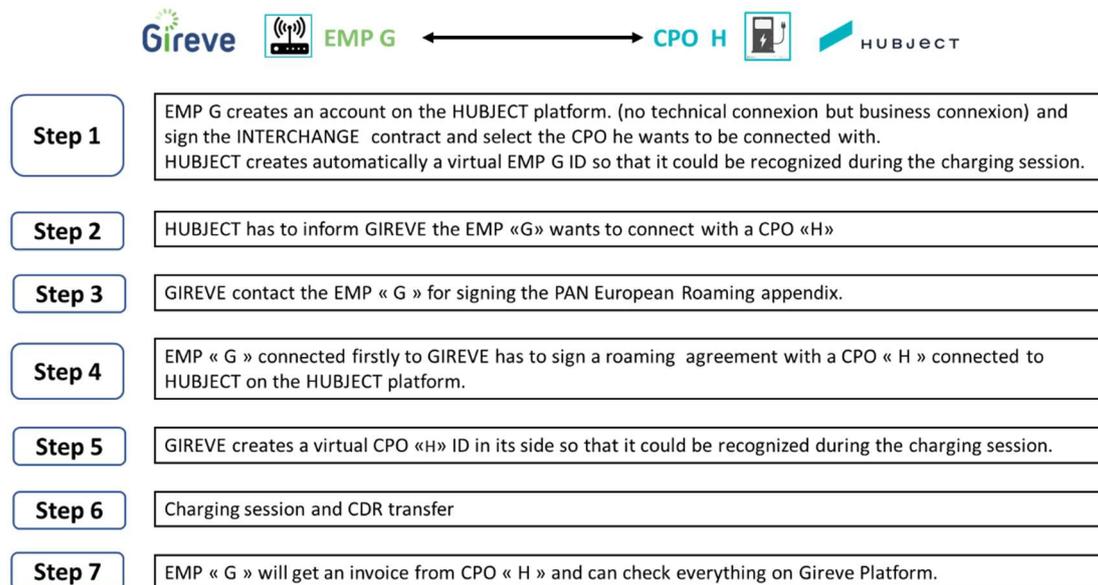


Figure 14: Gireve's EMP connection agreement with Hubject's CPO

As regards to the business aspects of the agreement, the solution focused on small over cost for the final customer. Consequently, only the e-roaming platform of the CPO will receive flat



fees, while the e-roaming platform that the EMP belongs to will not receive any fees for enabling the roaming. Here below are two business schemes that describe the above:

When a customer of a Hubject EMP charges on a Gireve CPO:

1. The Gireve CPO sends the Charge Detail Record to Gireve
2. Gireve receives a fee of commissioning depending on its EMP subscription
3. Hubject receives a fee equal to the cost of working
4. The EMP sends an invoice to its customer
5. The customer pays the EMP
6. The EMP returns the money to CPO and platforms

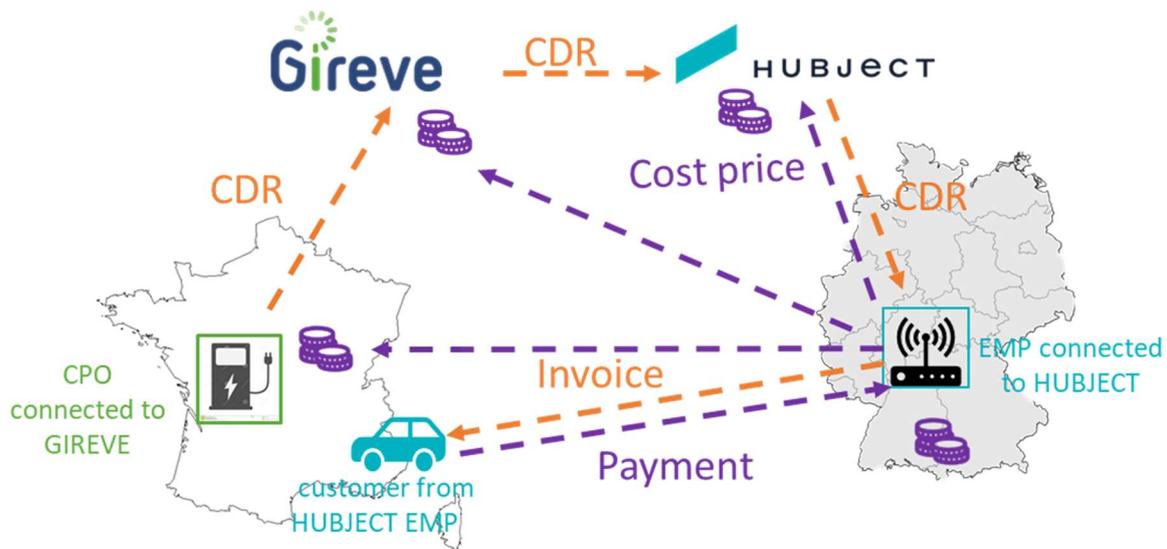


Figure 15: Hubject's EMP payment clearance flow

When a customer of a Gireve EMP customer charges on Hubject CPO:

1. The Hubject CPO sends the CDR to HUBJECT
2. Hubject receives a flat fee of commissioning
3. Gireve receive a fee equal to the cost of working
4. The EMP send an invoice to its customer
5. The customer pays the EMP
6. The EMP returns the money to CPO and platforms

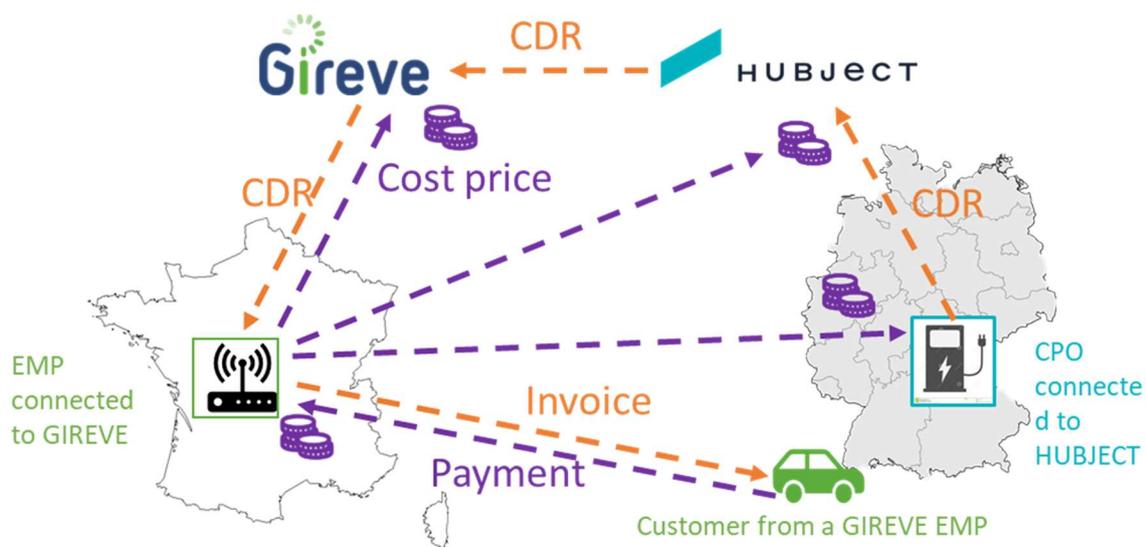


Figure 16: Gireve's EMP payment clearance flow

In conclusion, a contractual framework between eRoaming platforms or other actors like CPOs and EMPs, members of the Hyper-Network, will be necessary to ensure the value proposition of the project. To realise interoperability in the productive environment, the regulatory requirements of all the project stakeholders must be taken into consideration. The Hyper-Network will need a continuous development, which should be managed in a predefined governance structure. The regulatory framework for the NeMo Hyper-Network should cover the following aspects:

- Agree and establish contracts for Inter-roaming between the connected actors, platforms and the Hyper-Network;
- Produce a requirements whitepaper for a European wide contractual framework for the Hyper-Network including the eRoaming;
- Define the governance structure of the Hyper-Network, aligned with the requirements of the project stakeholders.

These are the reasons why NeMo envisages the establishment of the Business Alliance for Electromobility which will be required to meet the dynamic market trends and regulation changes.



4. Conclusions

In the present deliverable, the analysis of the NeMo Business Alliance for Electro-Mobility (BAEM) business model was presented based on the methodology of the Business Model Canvas, a widely accepted business modelling tool. The document presented the proposition of a draft marketing plan based on the market and competitors' analysis keeping in consideration the BAEM marketing goals, and proposing a first years' financial plan of the association with estimations of the expected revenues. BAEM, being the managing entity of the Hyper-Network, builds a sustainable business model for the technical network beyond the project timeline. The BAEM Business Canvas template was filled in, and the analysis described the value sharing model among the actors; the targeted customers and their relationships; the appropriate channels; the main activities, resources and partners; the revenue streams; and the cost structure of the alliance. This analysis sets the basis for the future business plan of BAEM.

Finally, requirements are proposed for building the regulatory and business framework for the Hyper-Network's sustainable and interoperable operation within the EU. A business solution is being proposed for a Connection Service Agreement between charging network operators and mobility service providers that would support their business inter-connection.

NeMo envisages the establishment of the Business Alliance for Electromobility which will need to meet the dynamic market trends and regulation changes and take action over the needed regulatory and business tasks mentioned in this deliverable, establishing standardizations update processes, enabling commercial framework for Inter-roaming and service provision, and participating in policy recommendations, etc.



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

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