EnerNETMob
EnerNETmob Project – Financing schemes

CENIT at International Centre for Numerical Methods in Engineering (CIMNE)
Dynamic Vision
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HIGH LEVEL TRAINING COURSES ON SUSTAINABLE MOBILITY
Barcelona, 11-13 June 2019
ENERNETMOB OVERVIEW
EUROPEAN FRAMEWORK
NATIONAL FRAMEWORKS & SPECIFIC MEASURES
EnerNETMob is a Strategic project of the Interreg-MED Programme that has 3 phases: testing + pilot + capitalization phase.

Eventually it will promote policy recommendations and holistic SEMPs (Sustainable Electromobility Plans) that can be adopted by Member States.
4 Ministries, 5 regional authorities, academia partners, energy agencies, clusters, research centres and advocacy/communication experts
EnerNETMob OBJECTIVE

EnerNETMob aims to draft, test and improve parallel “Sustainable Electromobility Plans” according to common standards and low carbon policies, in order to set an Interregional Electromobility Network” crossing cities of all the Interreg MED area.

EnerNETMob develops electromobility solutions and tests pilot actions so as to overcome medium-trip limitations and provide shared technical standards and common low carbon policies following the 2014/94/EU Directive.
Small-Scale Infrastructure Network

13 “Electric Vehicle Supply Equipment” (EVSE), as single modules of the overall “Interregional Electromobility Network”, are placed in different nodes of the partner regions.

The networks will be tested within 3 types of pilots and 1 ITC platform.
Optimize the mileage of Battery Electric Vehicles for **sea-road trips** & (9 charging points and 5 electric vehicles: Malta, Albania, Greece (Thessaly), Croatia, Montenegro)

Let’s not forget inter-modality!
Sharing electromobility in combination with renewable energy sources by replicating car-sharing or bike-sharing systems already implemented in bigger urban areas of 5 EU countries.

(15 charging stations: Cyprus, Slovenia, Greece (Peloponnesse), Italy, Spain).
PILOT 3

Last mile freight transport connections. Battery Electric Vehicles in 3 cities in collaboration with SMEs and farmer associations to propose a sustainable business model for agri-food chains.
- To manage and monitor the charging infrastructures and Electric Vehicle services;
- To interconnect local "Small-Scale Infrastructure Network" within a transnational “Inter-regional Electromobility Network”.

Partners will interconnect and integrate the tested “Small-Scale Infrastructure Networks” using common technical standards through a shared ICT platform consisting of common tools and protocols for the charging stations.

The partners will be able to tackle longer displacements also at the transnational and interurban level even beyond the project end.
WHAT ABOUT FUNDING?

WHERE ARE WE?
WHERE WE ARE - POLICY ASSESSMENTS

Analysis phase 1
• Assessment of policies and Regulations/Directives adopted by EU Commission and Parliament and the benchmarks at EU levels.

Analysis phase 2
• National Policy Frameworks in the 12 countries from the consortium:
  - 2014/94/UE Directive;
  - Covenant of Mayors and SEAPs;
  - National Policy Frameworks according to SUMP;S
  - Local benchmarks and good practices.
# Current Development of Electromobility in the EU

## Development of Electric Mobility in the EU

<table>
<thead>
<tr>
<th>Framework</th>
<th>Directive/Plan</th>
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<tr>
<td>Sustainable Energy framework</td>
<td>Directive 2009/28/EC on the promotion of the use of energy from renewable sources</td>
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<tr>
<td>Sustainable Mobility framework</td>
<td>Com(2013) 913 C – Concept for SUMP</td>
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<tr>
<td>Air Quality framework</td>
<td>Directives 2008/50/EC and 2015/1480 on ambient air quality and cleaner air for Europe</td>
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<tr>
<td>Covenant of Mayors</td>
<td>Directive 2016/2284 on the reduction of national emissions of atmospheric pollutants</td>
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Project co-financed by the European Regional Development Fund
Electric Transport Framework in the EU

**Directive 2014/94/EU: On the deployment of alternative fuels infrastructure**

**GOALS**
- Common framework of measures for the deployment of alternative fuels infrastructure
- Minimum requirements for the building-up of alternative fuels infrastructure,
- Member States reporting state of implementation of their respective national policy every 3 years, November 2019 thereafter.

Member States must provide a national framework containing:
- Current state and future development of the market
- National targets by 2020: recharging points and registered EVs and measures to ensure they are reached
- Designating urban/suburban agglomerations to be equipped with recharging points
- Requirements for the recharging points deployed
Current Development of Electromobility in the EU

**Sustainable Mobility framework**
Com(2013) 913 C – Concept for SUMP

Establishes the concept of Sustainable Urban Mobility Plans (SUMP). Despite SUMPs not being specific to electromobility, these may foster the use of EV via indirect measures (tax relief, free parking, free use of recharging stations, low emission zones…).

**The Covenant of Mayors**
Sustainable Energy Action Plans (SEAP)

SEAPs demonstrate the commitment of local authorities to go beyond their own national climate and energy objectives. Concrete measures related to electromobility might include the installation of charging points.
Lines of action

Ongoing work is identifying the following financing strategies

Direct Measures
• Grants for purchasing electric vehicles
• Grants for installing recharging stations
• Purchase of electric vehicles for public transport

Indirect measures (often at a lower administrative level)
• Tax relief
• Parking free of charge
• Free use of recharging points
• Free tolls
• Exemption of local vehicle tax
• Entrance allowed in low-emission zones
• Use of bus lanes
• HOT lanes

Economic incentives

Right of use/prioritization
**Objectives**

- Long term infrastructure investments
- Spatial development
- Noise reduction
- Advancement of electro-mobility
- Reduction of greenhouse gases
- Reduction of pollution

**Measures**

- **Tax relief** for electromobility
- **NoVA exemption**, the exemption from motor-related insurance tax and the exemption from motor vehicle tax.
- The federal and state governments supports **electromobility** with funding, studies and the constant adaptation of the legal framework.

**Austria-wide support programme.** Subsidies to purchase EVs at federal, state and local levels. There are currently 4142 charging points publicly accessible.

**NATIONAL FRAMEWORKS - Austria**
NATIONAL FRAMEWORKS - Croatia

Objectives

• Establish a minimum infrastructure for the supply of electricity to the territory of the Republic of Croatia by 2020
• Boats for supply of electricity from land to inland waterways and seagoing vessels
• Increase the number of electric recharging points accessible to public
• Growth of electric vehicle market

Measures

• Government co-financing infrastructure for filling vehicles on an alternative drive (2014 – 2030)
• Tax relief for zero or reduced emissions (2014 – 2020)
• Incentives to purchase electric and hybrid cars
• Financing Research, Technological Development and Innovation (2014 – 2020)
NATIONAL FRAMEWORKS - Cyprus

Objectives

• Assessment of current state and future development of the alternative fuels market and the corresponding infrastructure incl. cross-border continuity
• National Targets and objectives on number of recharging/refueling points
• Designation of key areas to be equipped with charging points and CNG refueling stations
• Consideration of the need to install electricity supply at airports

Measures

Nicosia

• Charging stations for electric vehicles
• Operation of green buses, either Electric or Hybrid
• Nicosia SUMP

Limassol

• Limassol SUMP
Objectives

• Energy Transition for Green Growth Act of 2015 (LTECV) → target of 7 million recharging points for electric vehicles in 2030
• La stratégie pour le développement de la mobilité électrique en France
  • 0.2 million hybrid vehicles by 2030 (currently 56,000)
  • 7 million recharging points by 2030 (currently 15,900)
  • 8.1 million electrical vehicles by 2030 (currently 22,000)

Measures

• **Bonus for purchasing** new cars emitting the least CO2 and penalize the most polluting models
• Maximum amount of 6,300 €, reserved for vehicles that emit less than 20g CO2/km
• Bonus of 1000 €, reserved for the purchase of two-wheel electric
• Exemption for electric company vehicles from the **annual tax** applicable to company vehicles
NATIONAL FRAMEWORKS - Italy

Objectives

- Simplify authorization processes to build private charging infrastructures for the electric vehicles
- Guarantee the minimum uniform accessibility levels to the recharge service of electric vehicles
- Implementation of charging services at National, Regional and Local level
- Common minimum technical standards

Measures

- Direct incentives for the purchase of EVs.
- Spaces reserved for charging electric vehicles
- Obligation to equip the fuel distribution systems with high power charging points
- Authorizations for Local Authorities to establish pass permission of electric vehicle in limited traffic zones.

<table>
<thead>
<tr>
<th>IMPACTS</th>
<th>2020</th>
<th>2030</th>
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<tbody>
<tr>
<td>Estimated number of electric vehicles (BEV)</td>
<td>45,000-130,000</td>
<td>n.a.</td>
</tr>
<tr>
<td>Estimated number of electric vehicles (hybrid and BEV)</td>
<td>n.a.</td>
<td>6,000,000</td>
</tr>
<tr>
<td>Estimated number of electric passenger cars (BEV M1 categories)</td>
<td>n.a.</td>
<td>1,600,000</td>
</tr>
<tr>
<td>Number of electric recharging points accessible to the general public</td>
<td>4,500-13,000  slow-normal 2,000-6,000 high power</td>
<td>n.a.</td>
</tr>
<tr>
<td>Electrical vehicle on recharging points ratio</td>
<td>10:1</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
NATIONAL FRAMEWORKS - Spain

Catalonia

• Promote an electric mobility infrastructure
• Ensure that public electric recharging electrical stations are exempt from barriers
• Accessible and sufficiently distributed electrical recharging infrastructures

Measures

PIRVEC (Catalonia)

• 100 fast charging stations (800,000 €)
• 400 semi-fast charging stations (2,340,000 €)
• 25,000 domestic charging stations (2,625,000 €)

Barcelona – PMU 2019-2024

• 5000 € subsidy for purchase
• Exemption of registration tax, payment tolls, free parking, use bus lane, free use of recharging infrastructure.
• 70-85 % of recharging point cost subsidy

Balearic Islands

• Spanish region with more electric recharging points per habitant (ERDF and Balearic Islands grants)

Measures

• Replace vehicle fleet for electric vehicles
• Installation of private and public recharging points
• Promotion
• Prohibit usage of low sustainable vehicle from 2025
### Zaragoza SUMP
- 1,635 electrical vehicles and 13 recharging points within 2020
- Increase number of e-vehicles
- Public transport electric fleet

### Measures
- Discriminatory tax system
- Free parking in regulated area
- Solar energy for recharging points
- Funding installation of 97 fast charge points

### National aids

<table>
<thead>
<tr>
<th>Norm</th>
<th>Budget</th>
<th>State Aid Vehicle Electric</th>
<th>State Aid Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.D. 648/2011</td>
<td>72 M€</td>
<td>25% Price with battery / max depending on autonomy</td>
<td></td>
</tr>
<tr>
<td>R.D. 294/2013</td>
<td>9.9 M€</td>
<td>According to autonomy and vehicle typology</td>
<td></td>
</tr>
<tr>
<td>R.D. 414/2014</td>
<td>10 M€</td>
<td>According to autonomy and vehicle typology</td>
<td></td>
</tr>
<tr>
<td>R.D. 1078/2015</td>
<td>13 M€</td>
<td>According to autonomy and vehicle typology</td>
<td>15,000 € fast 2,000 € semi-fast</td>
</tr>
<tr>
<td>Real Decreto 617/2017</td>
<td>12.3 M€</td>
<td></td>
<td>15,000 € fast 2,000 € semi-fast 1,000 € conventional</td>
</tr>
<tr>
<td>IDAE Res November 7 2017</td>
<td>5 M€</td>
<td>Supplement of Real Decreto 617/2017</td>
<td>15,000 € fast 2,000 € semi-fast 1,000 € conventional</td>
</tr>
<tr>
<td>IDAE Res November 21 2017</td>
<td>20 M€</td>
<td>Amount never exceed the cost of the investment to be made, before taxes</td>
<td></td>
</tr>
</tbody>
</table>
NATIONAL FRAMEWORKS - Malta

Objectives
The Maltese transport plan:
• 20% vehicle fleet being EV in 2025
• 590 charging points by 2020 meaning 1 charging point per 8.5 EVs

Measures
Maltese government
• 2016: 2000 to 10000 € grants for the installation of charging stations by private companies resulted in failure
• 2017: 101,000 € budget that resulted in 16 EV purchases by private companies.
• 114 charging stations publicly available
  • 3 of which charged by solar panels free of charge for users

Awaiting for future EU funding
• 8 electric buses
• 10 medium-fast chargers (for public transport and private BEV owners)

EnerNETMob
• 2 recharging stations at both ends of Malta/Sicily ferry services

Additionally, a budget of 80,000€ for an expected three garages that will receive staff training on electromobility, and upgrade its services specialised for EVs.
NATIONAL FRAMEWORKS - Portugal

Implemented measures

- **MOBI.E** installs recharging stations
  - 1117 charging points of which 55 fast charging points. 4 fast charging points awaiting certification and 12 in installation process. Problem: fast charging points installed but not connected after several months.
- The Portuguese State finances with **aids**
  - Recharging network infrastructure
  - Electric vehicle purchase
- **Free parking** in some cities
- **Free slow charge** in national network until, at least, end of 2019.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tbody>
<tr>
<td>Purchase Subsidies</td>
<td>Portugal - Purchase subsidies&lt;br&gt;National Subsidy for BEV's: 3000€(persons), 2.250€ (companies) and PHEV's: 1.125 €</td>
</tr>
<tr>
<td>Registration Tax Benefits</td>
<td>Portugal - Registration tax benefits&lt;br&gt;Tax reduction / exemption - CO2 based tax</td>
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<tr>
<td>Ownership Tax Benefits</td>
<td>Portugal - Ownership tax benefits&lt;br&gt;Tax reduction / exemption - CO2 based tax&lt;br&gt;20% up to the maximum of € 400,00</td>
</tr>
<tr>
<td>Company Tax Benefits</td>
<td>Portugal - Company Tax Benefits: 250€</td>
</tr>
<tr>
<td>Local Incentives</td>
<td>Portugal - Local incentives&lt;br&gt;Free parking in several Municipalities (Lisbon&lt;br&gt;Local energy utility company offers 1 year discount in house electricity rates for BEV buyers</td>
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<tr>
<td>VAT Benefits</td>
<td>Portugal - VAT Benefits&lt;br&gt;Tax reduction / exemption - CO2 based tax</td>
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<thead>
<tr>
<th>Year</th>
<th>Number of BEV &amp; PHEV sold</th>
<th>Inter-annual growth (%)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>8 241</td>
<td>94,50</td>
<td>Record in annual sales</td>
</tr>
<tr>
<td>2017</td>
<td>4 237</td>
<td>115,08</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>1 970</td>
<td>50,96</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>1 305</td>
<td>260,50</td>
<td>Incentives reintroduced</td>
</tr>
<tr>
<td>2014</td>
<td>362</td>
<td>61,61</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>224</td>
<td>39,13</td>
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<tr>
<td>2012</td>
<td>161</td>
<td>-23,33</td>
<td>Incentives withdrawn</td>
</tr>
<tr>
<td>2011</td>
<td>210</td>
<td></td>
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<tr>
<td>Total</td>
<td>16 710</td>
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NATIONAL FRAMEWORKS - Albania

Goodwill, slow action

Tirana lead: Saytaxi, Greentaxi, electrified bus line 16,

Needs

• to adopt a law in compliance with Directive 2014/94 EU affecting electric transport.
• concrete incentives for purchasing electric vehicles should be taken by the Government.
• non-financial incentives, for example preferential access to restricted areas, parking policy and dedicated lanes.
• spread the use of electric vehicles implement the use of electric buses in public transport.
• monitoring of the process.

Sustainable Transport Plan for Albania 2015-2030
Finished but not approved

Tirana City SEAP

Shkodra SUMP (2017 – 2023)
Not approved officially yet
NATIONAL FRAMEWORKS - Montenegro

Despite having 74 EV registered (end 2018) it does not have any dedicated electromobility policy or infrastructure.

Measures

- **Poly-SUMP** developed in the Boka Bay and the Old Royal Capital Cetinje 2016-2020 (13.6% Montenegro population) financed by the United Nations Development Programme (UNDP).
- There are currently 6 charging stations in hotels in Tivat, one public fast charger in Lustica Bay.
- The Port of Bar will use the EnerNETMob project opportunity to encourage the development of electromobility in Montenegro.
NATIONAL FRAMEWORKS - Slovenia

The Ministry of Infrastructure manages the resources coming from the EU, its beneficiaries will be the Ministry of Infrastructure, local communities and private companies.

Established a network of fast charging station on the motorway network (2015).

Implemented measures

• 2016-2022: 213.65 million EUR
## BENCHMARKING

<table>
<thead>
<tr>
<th></th>
<th>Grants to purchase EV</th>
<th>Funding to install charging points</th>
<th>Tax relief</th>
<th>Aggressive Infrastructure targets</th>
<th>SUMPs</th>
<th>Indirect measures</th>
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