

RADIONICA >>>

Budućnost javnog gradskog prijevoza u Hrvatskoj <<<

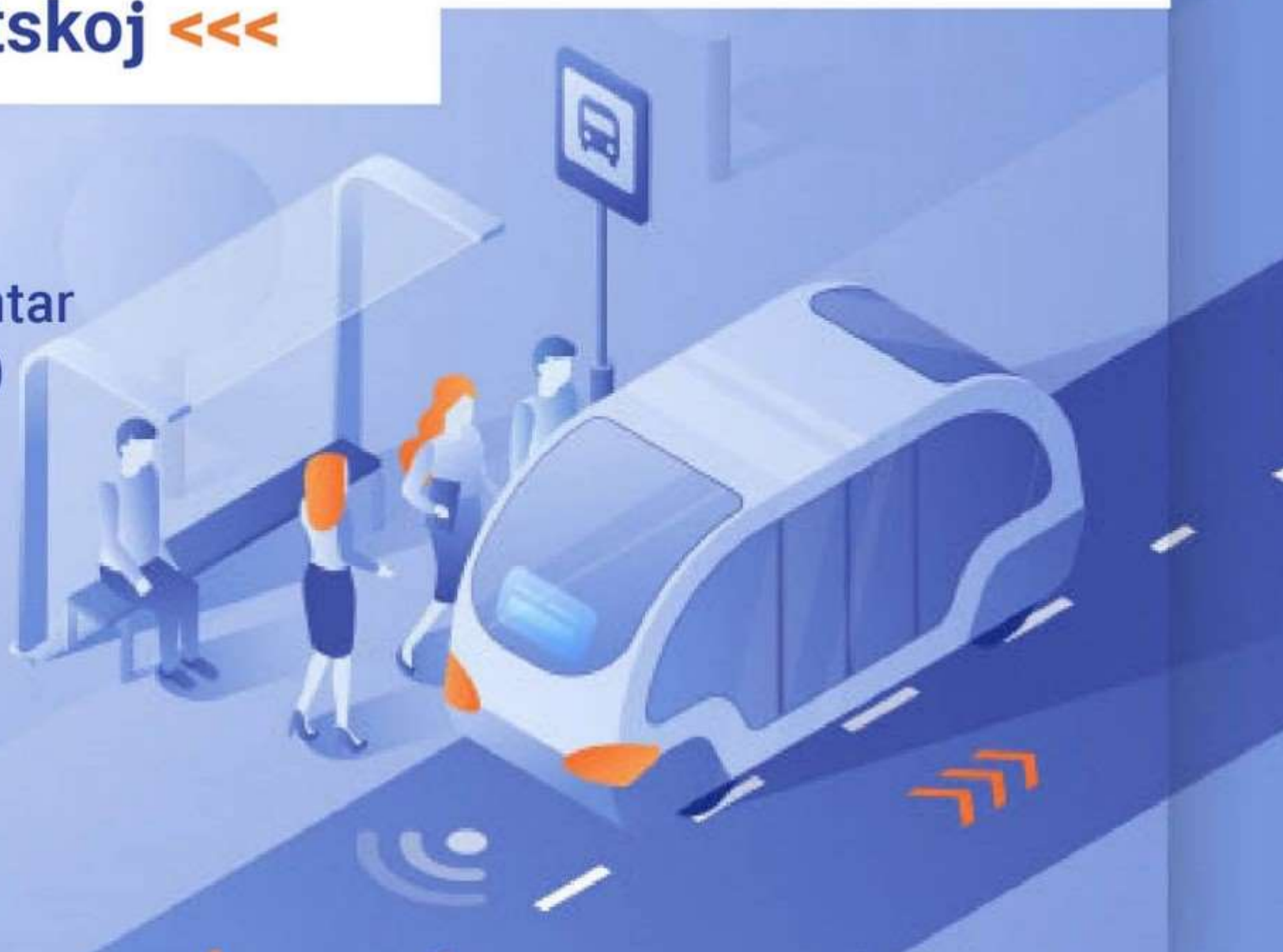


Grad
Koprivnica



28/2/2020

Napretkov kulturni centar
Zagreb (Bogovićeve 1)



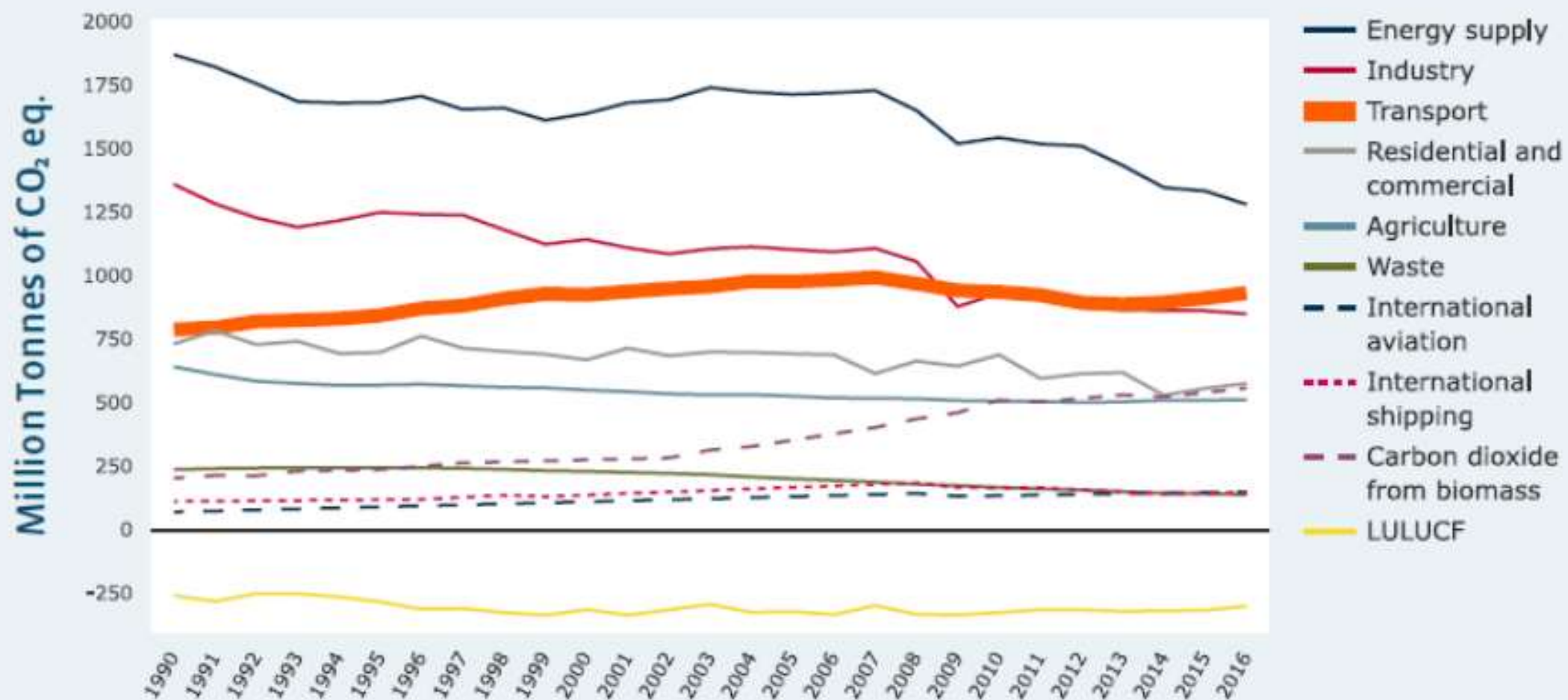
Elektromobilnost, SUMP i javni prijevoz

- Marko Stančec,
- Odraz, CIVINET mreža Slo-Cro-SÉE
- 28.2.2020.

Elektromobilnost i javni prijevoz

- SUMP i elektromobilnost
- Utjecaj na okoliš i energetska efikasnost
- Željeznica, tramvaj, Električni autobusi, trolejbusi, car-sharing, električni javni bicikli, mikromobilnost
- Razlika - Baterijski sustavi
- Proizvodnja baterija i održivost

Emisije CO₂ po sketoru od 1990.



The Clean Energy Ministerial Electric Vehicles Initiative (EVI)



Members (2018-19)

(Co-lead)



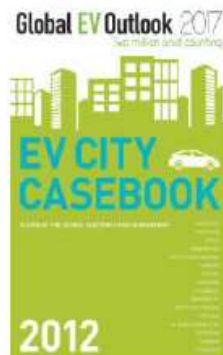
(Co-lead)



Coordinator **iea**

Activities

Analytical publications



Commitments

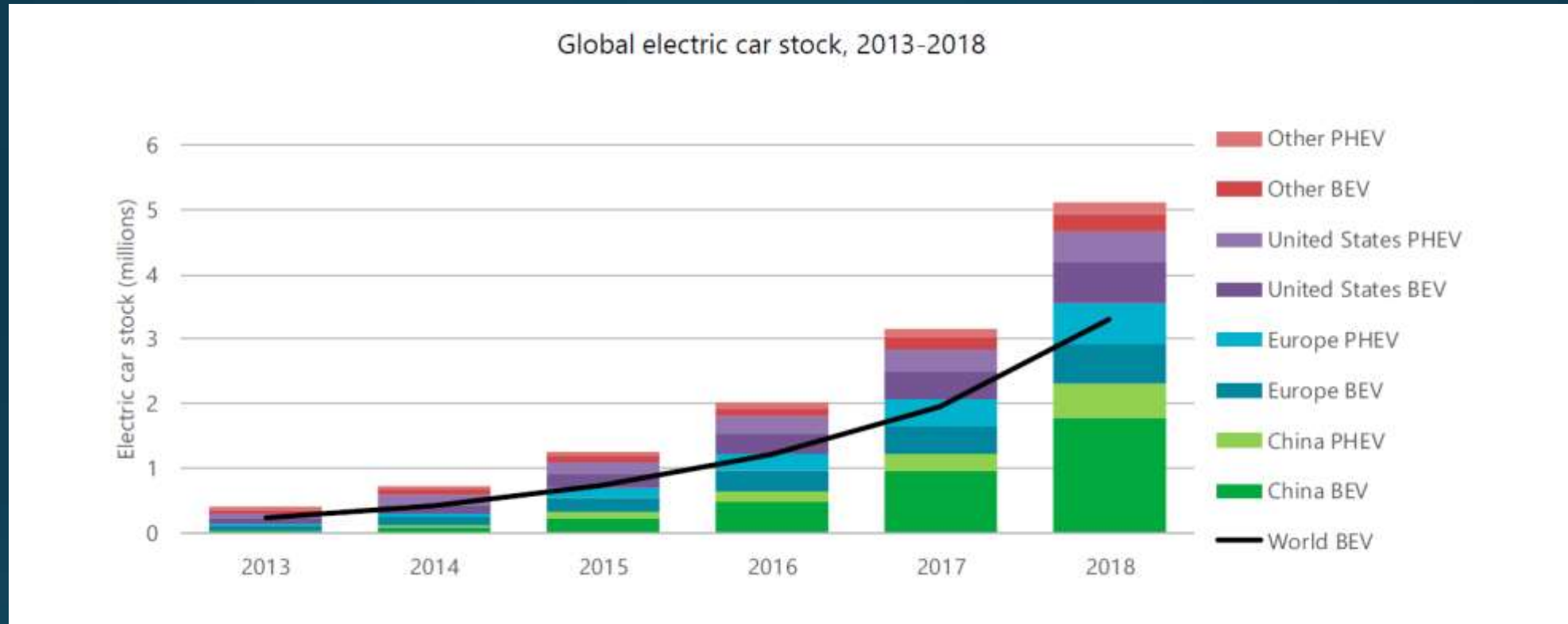
- **EV30//30**
EV3@30 Campaign (2017)
- Paris Declaration on Electro-Mobility and Climate Change (COP 21)
- Government Fleet Declaration (COP 22)

Collaborative projects

- Global EV Pilot City Programme
The logo for the EV Pilot City Programme, featuring a green circular icon with a stylized electric car and a plug, next to the text "EV Pilot City Programme" in a sans-serif font.
- € 4 million global electric mobility project for emerging economies (with UNEP and the GEF)



Broj električnih automobila na cestama (globalno)



- 5.1 el.automobila na cestama globalno do početka 2019. , 45 % u Kini.
- Udio prodanih el. automobila u ukupnoj prodaji u Norveškoj 11% do 32% u 3 godine



Počeci u Hrvatskoj

- Dostava
- Javni prijevoz
- Električni automobili i punionice
- www.puni.hr (7>700 u 5 godina)





SUMP i elektromobilnost

- Energetska efikasnost
- Dostava robe i javni prijevoz
- Razvoj standarda za baterije
- Infrastruktura za punjenje
- Oporezivanje i financiranje
- <https://www.eltis.org/mobility-plans/topic-guides>



Commercial Fleets



Users of Shared
e-mobility services



Urban residents without
own parking



Long range commuters

Eu projekti - iskustva

Box 4 Factor 100: the impact of electrifying buses

Best Practice Example

The EU project ELIPTIC looked at the electrification of public transport in cities and advocated for providing more funding for the electrification of buses. The main message of the campaign was that the impacts of the electrification of one (18m) e-bus equals the impacts of the electrification of 100 e-cars – but there is not 100 times the funding for e-buses as for e-cars.

This argument was based on the fact that buses are operating 12 to 16 hours per day (against less than an hour for cars), the fleet of buses is currently quasi exclusively running on diesel engines (against 50 to 60% for cars). Due to the size of the engine, buses are consuming on average 40,000 l of fuel (mainly diesel) per year, against 500 l for cars.

Reference: Factor 100 brochure,
http://www.eliptic-project.eu/sites/default/files/Faktor100_Folder_EN_RZ_web.pdf

Box 5 Using existing electric infrastructure for bus charging

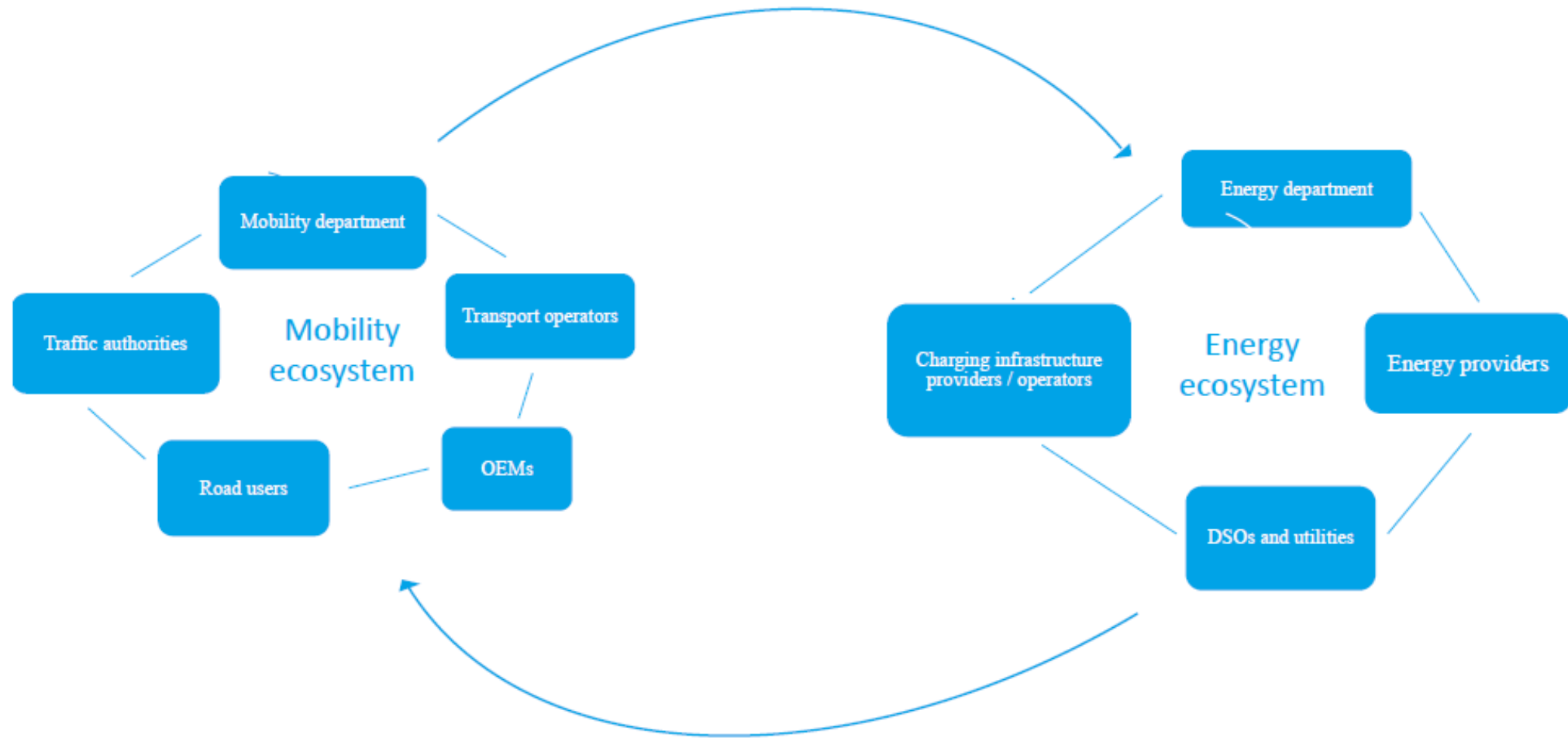
Best Practice Example

The ELIPTIC project investigated the possibility to use the existing public transport electric grids (i.e. metro and tramway) to charge buses and other EV types.

The demonstrations showed the technical feasibility of the solution. In Oberhausen (Germany), buses are recharged at a line terminal with the electricity of the tram electricity grid. Charging other kinds of electric vehicles (e.g. e-cars, e-vans) is also possible. However, selling the energy to external parties currently still faces legal and regulatory hurdles.

Reference: ELIPTIC use cases in Oberhausen
<http://www.eliptic-project.eu/eliptic-use-cases/oberhausen>

- BuyZET handbook
- JRC methodology
- E-bus decision support tool
- ELIPTIC policy recommendations
- FREVUE results and Guidance for Local a
- SIMPLA guidelines



Elektromobilnost i održivost?

OEM	Country	Announcements
Panasonic	United States	35 GWh/year factory by 2020.
	China	24 GWh/year and 18 GWh factories in 2020.
CATL	European Union	14 GWh/year factory in 2021. 98 GWh/year factory (date to be determined) to be launched.
	China	24 GWh/year factory in 2019. 20 GWh/year and 30 GWh factories in 2023. 10 GWh/year factory (date to be determined).
BYD	European Union	15 GWh/year factory in 2022.
	China	32 GWh/year factory in 2023.
SK innovation	China	7.5 GWh/year factory in 2020.
	European Union	7.5 GWh/year factory in 2021.
	United States	9.8 GWh/year factory in 2022.
LIBCOIN/BHEL	India	30 GWh/year factory, in 2025, 2026 and 2027.
Samsung SDI	European Union	1.65 GWh/year factory in 2020.
Northvolt	European Union	32 GWh/year factory in 2023.
Lithium Werks	China	8 GWh/year factory in 2021.
Terra E	European Union	4 GWh/year factory in 2020.

Trenutna proizvodnja baterija i kapacitet 3-8 GWh/godišnje.

8 novih proizvodnih pogona lokacija sa više od 20 GWh/ godišnje očekuje se do 2023.

- Radni vijek baterije - ponovno korištenje u kućanstvu s obzirom na kapacitet baterije nakon korištenja za transport 70% (ECOS)
- Standard za baterije ne postoji - informirana odluka
- Proizvodnja 1 el. baterije CO₂ = Prosječni automobil u EU nakon 50 000 km²
- Norveška u 3 god. od 11% do 32% udjela električnih vozila
- Ako se sada ne uloži u R&D u idućih pet godina povećanje potražnje za sirovinama = Litijum 3x, Kobalt 60%
- Proizvodnja sirovina na području EU - kontroverzna i neistražena

Pretvaranja kratkoročnih izazova u dugoročne mogućnosti



- Uspješna integracija elektroenergetskih prometnih sustava u prometnu mrežu može smanjiti potražnju energije i povećati fleksibilnost mreže



- Elektromobilnost povećava potražnju za materijalima/sirovinama za proizvodnju baterija, transparentnost u proizvodnom lancu - smanjenje rizika i utjecaja na okoliš (održivost)



- Upotreba alternativnih goriva i pogonskih postrojenja u velikoj mjeri utječe na državne prihode od oporezivanja prometa

Hvala na pažnji!

ODRAZ – Održivi razvoj zajednice

Lj. Posavskog 2, Zagreb

T: 01 / 46 55 203

www.odraz.hr

marko@odraz.hr