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CONNECTA

# Technical Assistance for the Deployment of Smart and Sustainable Mobility in the Western Balkans

CONNECTA-TRA-CRM-REG-MOB-07

WORKSHOP no. 3

**Smart and green mobility**

22/11/2022, Tirana

***Progress & planning of implementation***

**Author: CONNECTA**

**[www.connecta-info.eu](http://www.connecta-info.eu)**

**M**  
MOTT  
MACDONALD

**M**  
CONNECTA CONSORTIUM

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- Component No.2: Strategic framework for deployment of e-charging infrastructure in the Western Balkans” – status, activities, implementation challenges



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# Project Synopsys

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- **Project title:** Technical Assistance to Connectivity in the Western Balkans (CONNECTA)
- **Sub-project title:** Technical Assistance for the Deployment of Smart and Sustainable Mobility in the Western Balkans
- **Contracting Authority:** European Commission – Directorate-General for Neighborhood Enlargement Negotiations (DG NEAR)
- **Area:** Connectivity Transport Reform Measures
- **Project followed by:** Transport Community Permanent Secretariat
- **Project implemented by:** Mott MacDonald Ltd. (UK) in Consortium with WYG, CeS COWI, TRENECON, SYSTEMA
- **Responsible CONNECTA Transport Key expert:** Giorgos Xanthakos
- **Project Manager:** Danijel Vučković
- **Project team:** 29 experts
- **Project duration:** 16 months (Mar 2022 – June 2023)



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# Purpose & Objectives & Expected Results

## Purpose/Scope of TA

Development of **strategic documentation** needed for the deployment of smart and sustainable mobility in the Western Balkans

## Objectives

**The main objective is to enhance mobility by focusing on sustainability and smart transport in the region**, especially along indicative extensions of TEN-T road network in Western Balkans.

The **specific objective of this TA is to** :

- Component 1 - Assess impact of the Sustainable and Smart Mobility Strategy for the Western Balkans and
- Component 2 - Develop strategic framework for deployment of e-charging infrastructure in the Western Balkans

## Expected results

### Component 1

- Baseline scenario
- Different impact scenarios
- **Action Plans** including targets for each Regional Party

### Component 2

- Current state of play/plans for deployment of e-charging stations
- Proposal on e-charging infrastructure needed to boost electric vehicle demand up to **2030, 2040, 2050**
- Contractual/Business models
- **Roadmap** for each regional partner on extending the e-charging stations



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# Targets

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- 1) **By 2030, at least 10 per cent of cars and 5 per cent of lorries in operation, to be zero-emission**
- 2) **By 2050, 90 per cent of all cars, vans, buses as well as new heavy-duty vehicles to be zero-emission.**
- 3) From 2022, all newly constructed railway lines to be electrified.
- 4) By 2050, greenhouse gases emissions from waterborne transport to be largely eliminated and airports to be made zero -emission nodes.
- 5) By 2023, InterCity Rail transport between capitals in the Western Balkans, on existing connections, to be re-established
- 6) By 2025, the Regional Rail Market to be opened.
- 7) By 2030, rail freight traffic to increase by 20 percent. This to double by 2050
- 8) By 2030, transport by inland waterways and short sea shipping to increase by 15 per cent. This to increase by 30 percent by 2050
- 9) By 2035, scheduled collective travel under 500 km, within the Western Balkans, to be carbon-neutral
- 10) By 2035, the Core Rail Network to be compliant with TEN-T standards.
- 11) By 2035, regional capitals and major urban nodes to be transport emission free.
- 12) By 2035, rail and waterborne-based intermodal transport to compete on equal footing with road-only transport in the Western Balkans.
- 13) By 2050, All external costs of transport within the Western Balkans to be covered by the transport users.
- 14) By 2035, seamless multimodal passenger transport to be facilitated by integrated electronic ticketing and freight transport to be fully digitalised.
- 15) By 2040, automated mobility to be deployed on a large scale.
- 16) By 2035, A multimodal Trans-European Transport Network equipped for sustainable and smart transport with high-speed connectivity to be operational for the core network, and, by 2050 for the comprehensive network.
- 17) By 2050, the death toll for all modes of transport in the Western Balkans to be close to zero.
- 18) By 2050, all process related to transport of dangerous goods (production, packing), as well as transport per se to be safe, eco-friendly, and more sustainable.



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# Updated workplan

Task	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	
Mobilization - Inception period (start on December 1, 2021)	■																
<b>INCEPTION REPORT</b>		★															
i Determining Baseline Scenario and analyzing Sustainable and Smart Mobility Strategy in the Western Balkans roadmap		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ii Development of different impact scenarios			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
iii Preparation of Action Plans and national targets for each Regional Party																	
<b>REPORT 2: Impact assessment and cost effectiveness analysis of the Sustainable and Smart Mobility Strategy for the Western Balkans</b>																	
i Assessment of current plans for deployment of e-charging stations along the indicative extension of the TEN-T network in the WB		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ii Proposal on e-charging infrastructure on the TEN-T network in the WB needed to boost electric vehicle demand up to 2030, 2040, 2050			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
iii Identification of the potential contractual/business models (public, private, public-private partnership)			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
iv Preparation of a Roadmap for e-charging stations, for each Regional Partner along the indicative extension of the TEN-T in the WB																	
<b>REPORT 3: Strategic Framework for deployment of e-charging infrastructure in the WB</b>																	
<b>Preparation of Draft Final Report (consolidation of key findings from all activities)</b>																	
<b>DRAFT FINAL REPORT</b>																	
Review and comments by stakeholders																	
<b>FINAL REPORT</b>																	
Approval by Contracting Authority																	
<b>Workshops</b>																	
<b>Progress Reports</b>																	



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## Component 1 Deliverables (D 1 - D 4)

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- Deliverable C1/D1 “Determining Baseline Scenario and analysing Sustainable and Smart Mobility Strategy in the Western Balkans roadmap”
- Deliverable C1/D2 “Development of different impact scenarios”
- Deliverable C1/D3 “Preparation of Action Plans and national targets for each Regional Party”
- Deliverable C1/D4 “Report of Component 1 - Impact assessment and cost effectiveness analysis of the Sustainable and Smart Mobility Strategy for the Western Balkans”



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# Deliverable C1/D1 – Status, Activities

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- C1/D1 **Status**: Ongoing (the draft version under reviewing process)
- C1/D1 **Activities implemented**:
  - Collection of information
    - Our NKEs experts
    - Authorities of the RPs
    - TCPS
  - Communications (remote meetings) with:
    - Authorities of the RPs
    - TCPS
  - Baseline scenario:
    - State of play of the SSMS actions
    - Transport modelling
    - Emission modelling
    - Energy consumption



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# Deliverable C1/D1 – Implementation challenges

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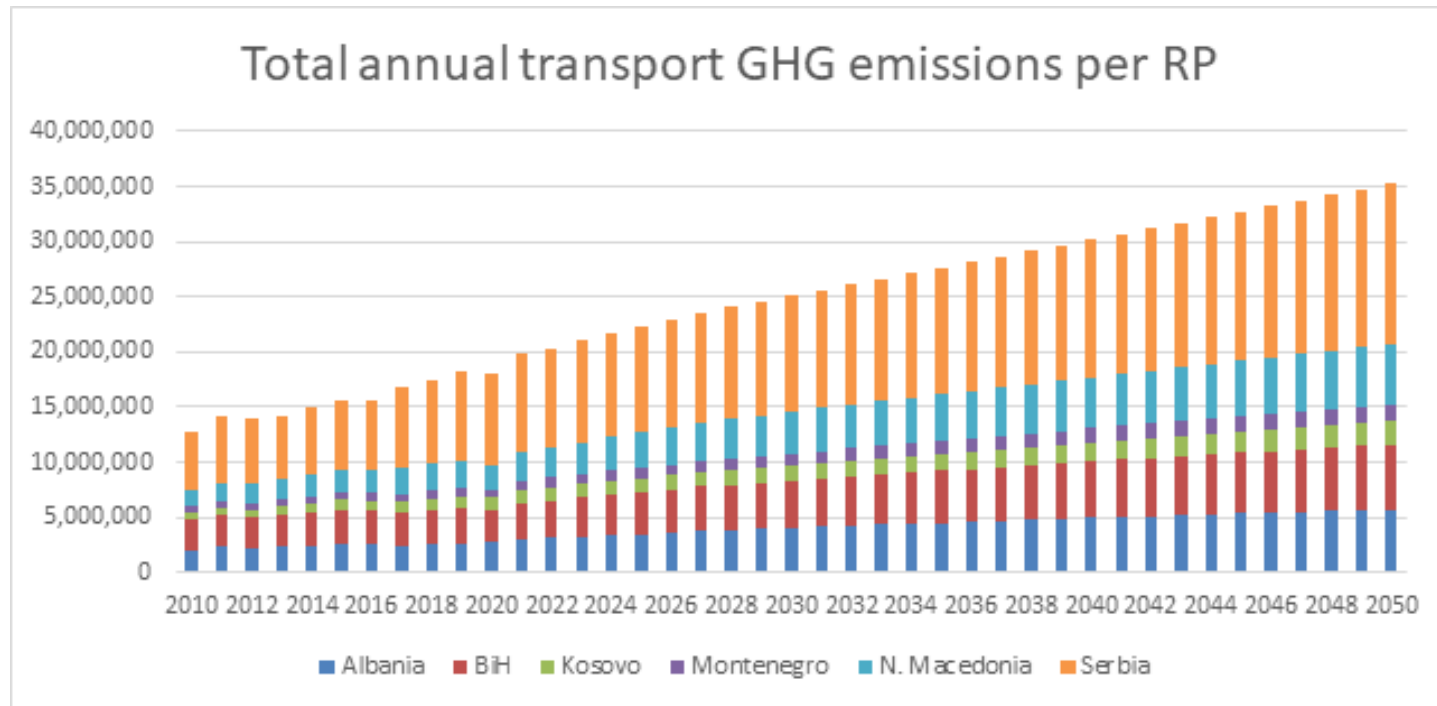
- Collection of information:
  - In many cases information does not exist or is not readily available;
  - In many cases information supply by the Authorities was very slow or has not happened.
- Slow/ no responses from the RPs' competent Authorities:
  - For communications with the project team (Management, NKEs, LEs)
  - For supply of requested information/ data
  - For comments on the Inception Report only received info from SRB authorities and the TCPS.
- Staff replacement:
  - Change of Transport Planner => Delays



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# Deliverable C1/D1 – Implementation – Emission Modelling

- The annual GHG emissions are projected to increase by almost 2 times between 2019 and 2050 (see the figures below). The projected total GHG emissions are expected to increase from 18.1 million tCO<sub>2</sub>eq in 2019 to 35.2 million tCO<sub>2</sub>eq in 2050 (see the graph below)



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## Deliverable C1/D1 – Implementation – Energy consumption

- Annual costs of fuel would increase from approximately EUR 10.1 billion in 2019 to EUR 19.6 billion in 2050 across the region (not reflecting inflation)

		<b>2019</b>	<b>2030</b>	<b>2050</b>
Energy consumption per RP (MWh/year)	Albania	10,039,345	15,035,093	21,125,283
	Bosnia and Herzegovina (BiH)	11,477,291	15,945,371	22,108,731
	Kosovo	4,295,227	5,370,004	8,036,088
	Montenegro	3,225,350	3,911,194	5,529,219
	N. Macedonia	9,057,329	14,110,460	20,390,243
	Serbia	29,955,511	39,785,623	54,675,250
<b>Baseline scenario energy consumption</b>		<b>68,050,054</b>	<b>94,157,744</b>	<b>131,864,815</b>



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# Deliverable C1/D2 – Status, Implementation

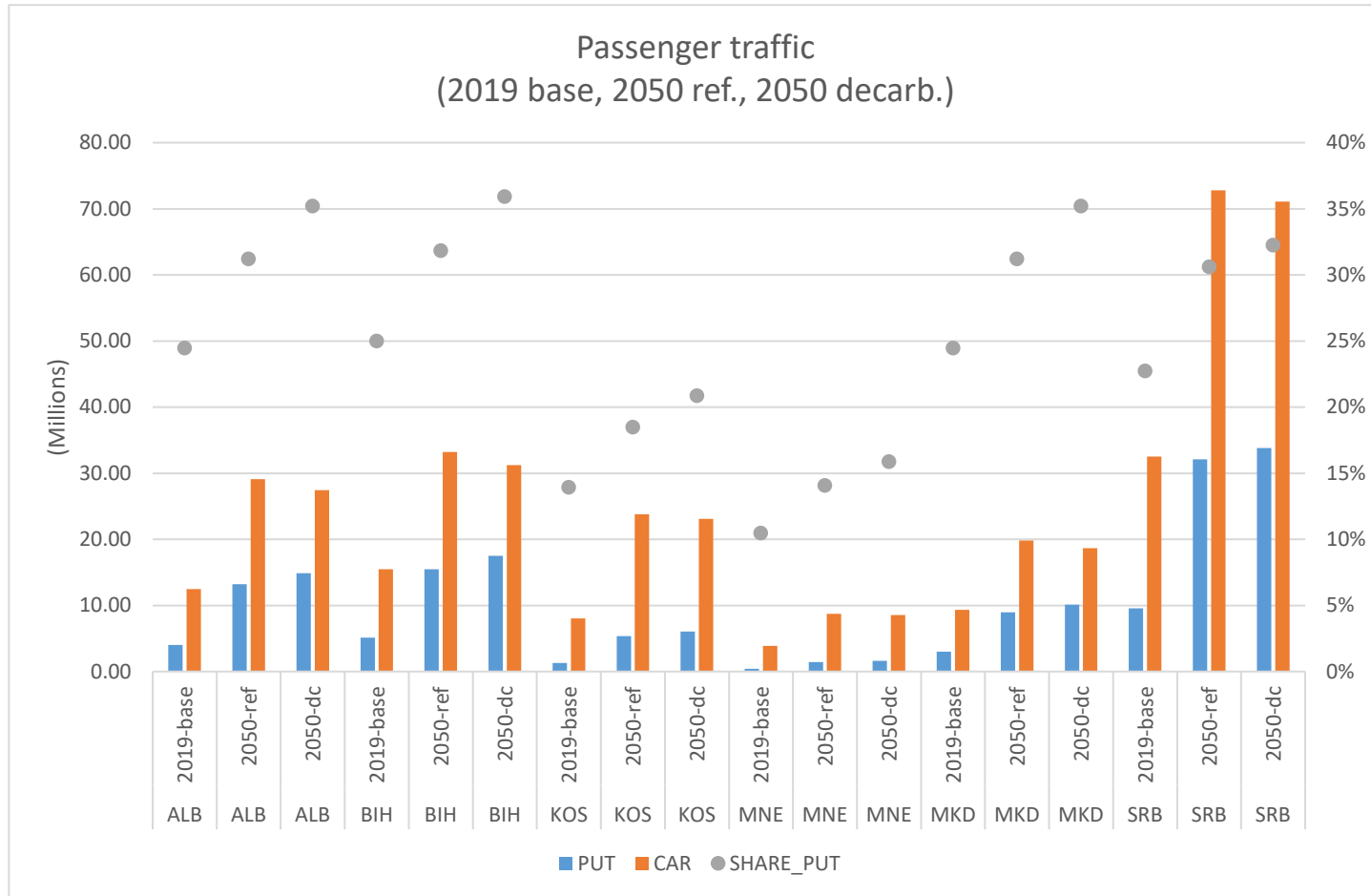
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- C2/D2 **Status**: Ongoing (drafting of the report in the final phase)
- C2/D2 **Activities implemented**:
  - Collection of information (traffic, emission, etc.)
    - Our NKEs experts
    - Authorities of the RPs
    - TCPS
  - Communications (remote meetings) with:
    - Authorities of the RPs
    - TCPS
  - Impact assessment of the SSMS actions through:
    - Activities needed for the SSMS' action implementations (done)
    - Timelines (done)
    - Institution/Stakeholder in charge for the SSMS' actions implementation (done)
    - Transport modelling (decarbonisation scenario done – waterborne transport to be extracted in the draft report, do-somethings scenario under development)
    - Emission modelling (both decarbonisation and do-something scenario under development)
    - Development of costs and benefits (draft version ready, under review)



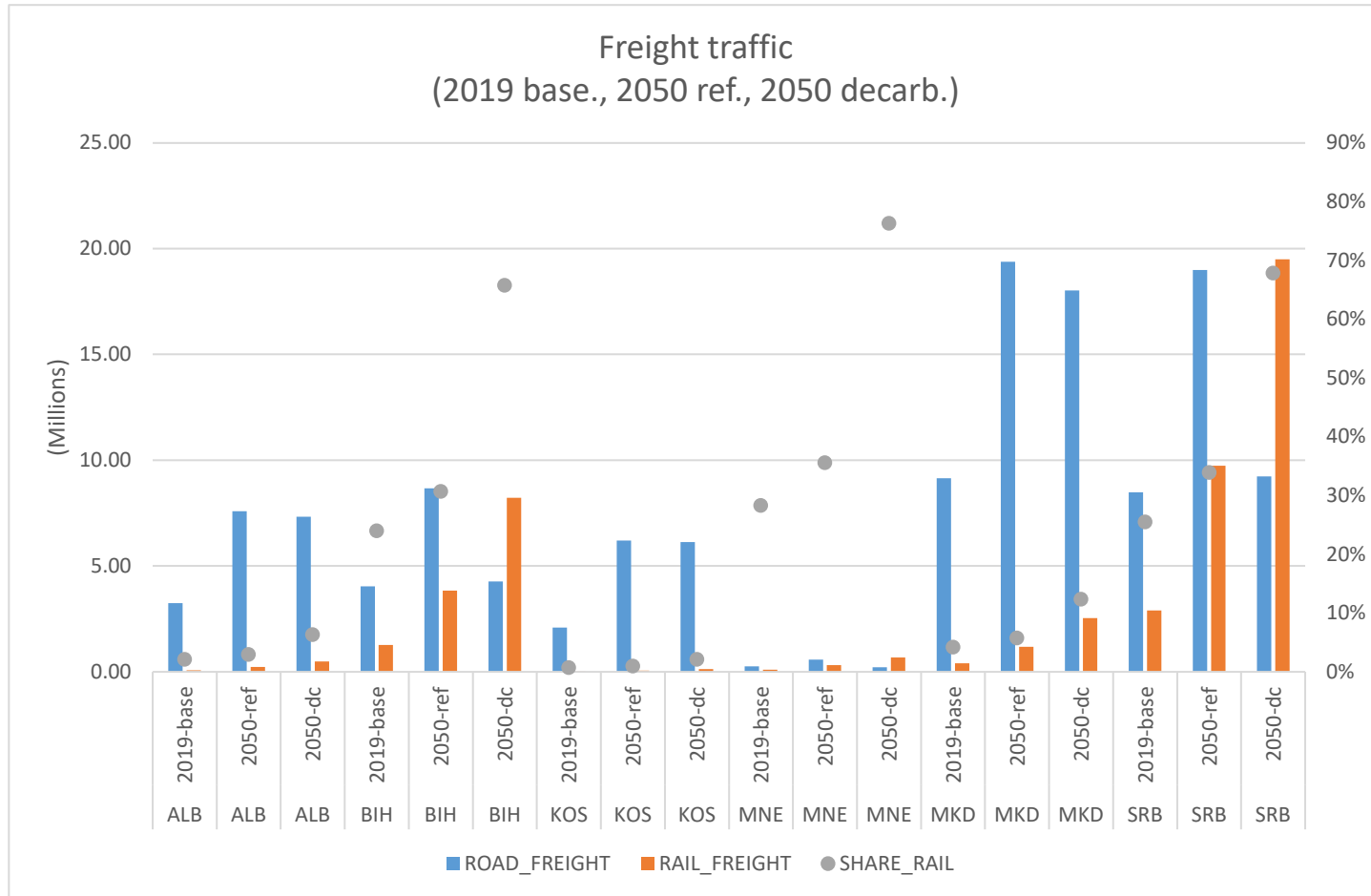
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# Deliverable C1/D2 – Implementation – Transport Modelling



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# Deliverable C1/D2 – Implementation – Transport Modelling



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# Deliverable C1/D3 – Status, Implementation

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- C1/D3 **Status**: Some activities ongoing
- C1/D3 **Activities implemented**:
  - Prioritisation (MCA) methodology developed, including 5 criteria presented at the previous workshop
  - Questionnaire for Weighting criteria, completed 80%
  - CBA assessment (as one of the 5 criteria) ongoing for the quantifiable actions
- C1/D3 **Planned activities**:
  - Finalisation of the CBAs and MCA
  - Development of the Action plan and targets for each RP.



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# Time-line of the production of the C1 Deliverables

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- C1/D1: 30/ November/ 2022
- C1/D2: 15/ December/ 2022
- C1/D3: 28/ February/ 2023
- C1/D4: 30/ April/ 2023



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## Component 2 Deliverables

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- Deliverable C2/D1 “Assessment of the **current state of play/plans** for deployment of e-charging stations along the extension of TEN-T network in the Western Balkans”
- Deliverable C2/D2 “**Proposal on e-charging infrastructure** on the TEN-T network in the Western Balkans needed to boost electric vehicle demand up to 2030, 2040, 2050”
- Deliverable C2/D3 “Identification of the potential **contractual/business models** (public, private, public-private partnership)”
- Deliverable C2/D4 “Preparation of a **Roadmap for each Regional Party** on extending the e-charging stations on the extension of the TEN-T network in the Western Balkans”
- Deliverable C2/D5 “**Report of Component 2** - Strategic framework for deployment of e-charging infrastructure in the Western Balkans”



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# Deliverable C2/D1 – Status, Implementation

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- C2/D1 **Status**: Completed (latest revision 8/November/2022)
- C2/D1 **Activities implemented**
  - Organisation of implementation
  - Collection of information - 1
    - Our local experts
  - Establishment of contacts with the competent Authorities of the RPs
  - Collection of information - 2
    - Our local experts
    - Authorities of the RPs
  - Drafting of the Deliverable C2/D1
  - Communications (remote meetings) with the competent Authorities of the RPs
  - Collection of information - 3
    - Our local experts
    - Authorities of the RPs
  - Completion of Deliverable C2/D1
  - Comments by:
    - TCPS
    - Competent Authorities of RPs
  - Revised Report C2/D1



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## Deliverable C2/D1 – Implementation challenges

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- Installation of communications with the competent Authorities of the Regional Parties (RPs):
  - Extremely difficult/ time consuming;
  - Communications with the Authorities of N. Macedonia still not established.
- Collection of information:
  - In many cases information does not exist or is not readily available;
  - In many cases information supply by the Authorities was very slow.
- Slow/ no responses from the RPs' competent Authorities:
  - For communications with the project team (Management, NKEs, LEs)
  - For supply of requested information/ data
  - For comments on the report C2/D1



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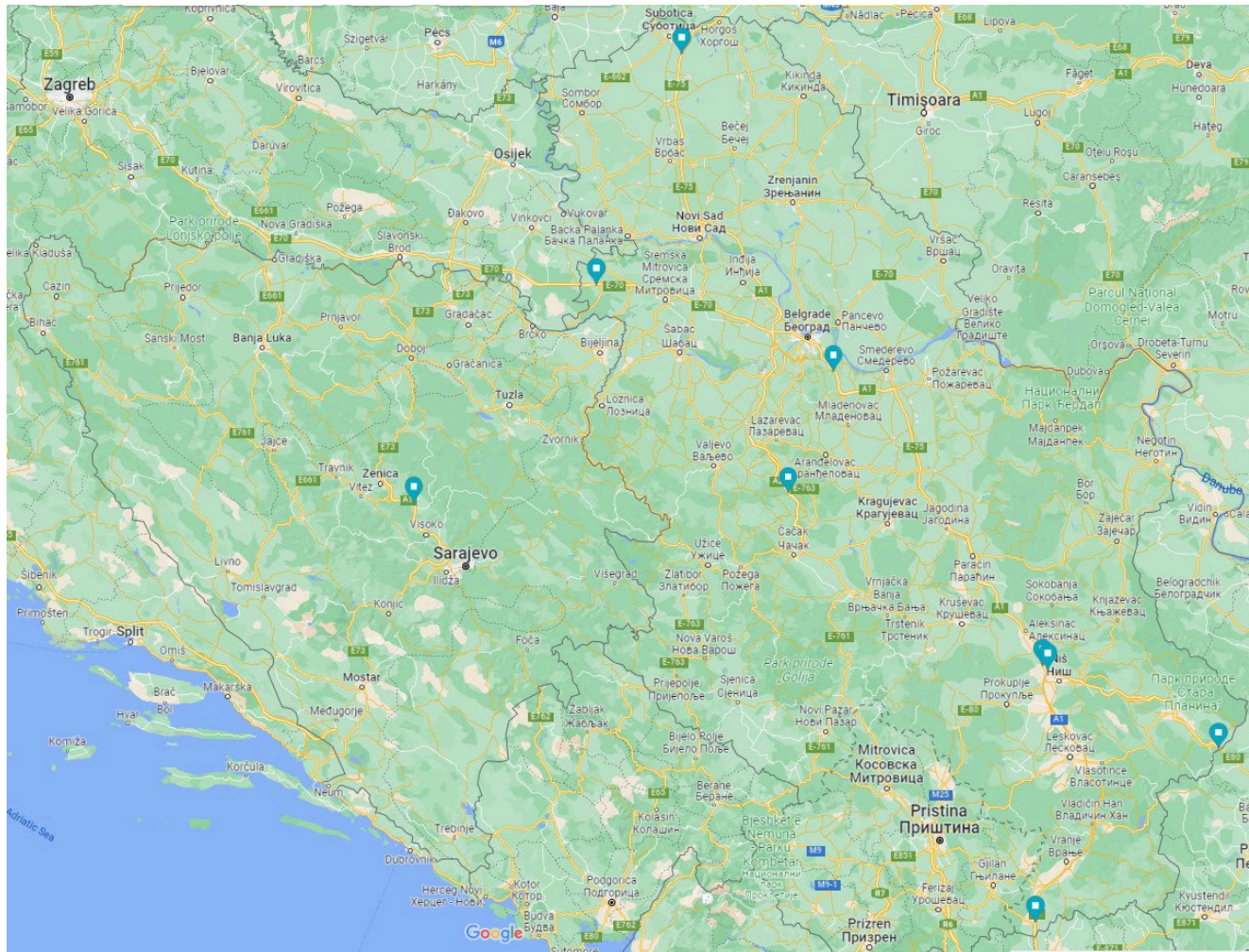
## Deliverable C2/D1 – Some findings

#	RP	No. of EVCS	EVCS/ 100 km	No. EVCS on TEN-T		Plans for EVCS	EVCS Tech. specs	EVCS legal acts	Payment methods	Incentives
				Exist.	Plan					
1	Albania	20	0.15	0	0	Yes	Yes	No	Free 1 <sup>st</sup> year	Yes
2	Bosnia & Herzegovina	93	0.48	1	0	No	No	No	Free at state EVCS	Yes
3	Kosovo	13	0.15	0	0	No	No	No	Free 1 <sup>st</sup> year	No
4	Montenegro	49	0.69	0	0	No	No	No	Free 1 <sup>st</sup> year	Yes
5	North Macedonia	59	0.42	0	0	No	No	No	Payment	Yes
6	Serbia	85	0.28	8	10	Yes	No	No	Free at state EVCS	Yes
<b>T</b>	<b>WB</b>	<b>320</b>	<b>0.35</b>	<b>9</b>	<b>10</b>	<b>Not in all RPs</b>	<b>Not in all RPs</b>	<b>No</b>	<b>N/A</b>	<b>Not in all RPs</b>



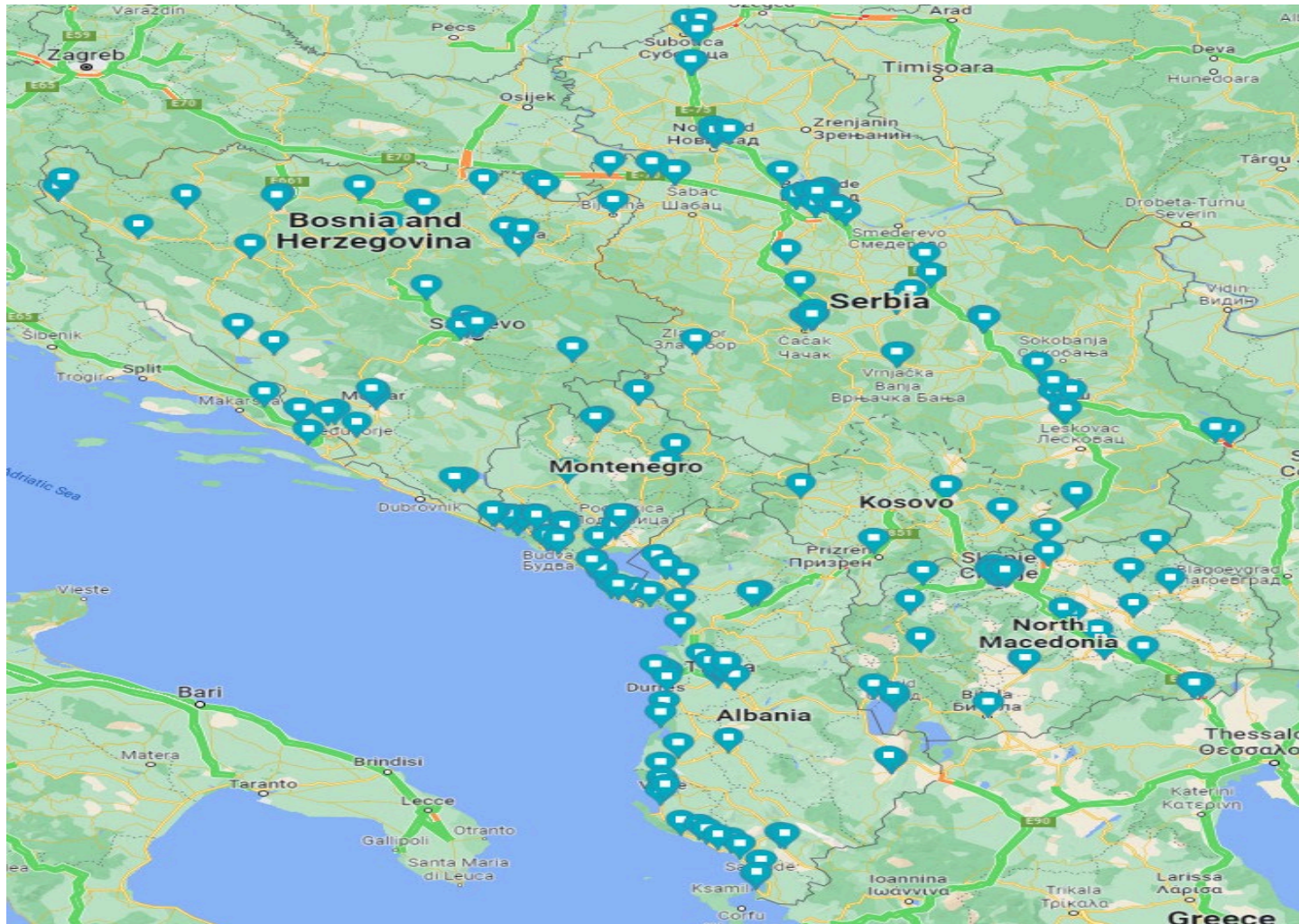
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# Deliverable C2/D1 – EVCS on the TEN-T in the Western Balkans



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# Deliverable C2/D1 – AII 320 EVCS in the Western Balkans



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## Deliverable C2/D1 – Implementation of alternative fuels EU Directive

RP	Number of alternative fuel stations					Existing legal frame	EU Dir. Transp osit.	Install ationsr egulati on	Com ments
	EV	LPG	CNG	LNG	Hydr ogen				
Albania	20	210	0	0	0	Yes	No	No	--
Bosnia & Herzegovina	93	273	2	0	0	Yes	No	No	--
Kosovo	13	8	0	0	0	Yes	No	No	--
Montenegro	49	56	0	0	0	Yes	No	No	--
North Macedonia	59	105	5	0	0	Yes	No	No	--
Serbia	85	683	0	26	0	Yes	No	No	300 km of the TENT-T Core Network meets the requirements
<b>TOTAL WB</b>	<b>320</b>	<b>1335</b>	<b>7</b>	<b>26</b>	<b>0</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>N/A</b>



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## Deliverable C2/D1 – Some conclusions

Features	Good progress	Small/ no progress
EVCS density No./100km	<b>MNE</b> , B&H, MKD	SRB, ALB, KOS
No. of EV/ EVCS	<b>B&amp;H</b> , KOS, MNE	SRB, MKD, ALB
Existing EVCS on TEN-T	<b>SRB</b> , B&H	ALB, KOS, MNE, MKD
Installed fast chargers	<b>SRB</b> , B&H, MNE	ALB, KOS, MKD
Free charging in 1 <sup>st</sup> year	ALB, KOS, MNE	SRB, B&H, <b>MKD</b>
Free charging at state stations	SRB, B&H	ALB, KOS, MNE, <b>MKD</b>
Progress on EVCS planning	<b>ALB</b> . SRB	MNE, B&H, KOS, MKD
Incentives for EV purchase	<b>All</b> except KOS	KOS
Incentives for EVCS install.	<b>None</b>	All
EVCS Legal/ Institutional frame	<b>None</b>	All
Transposition of 2014/94/EU	<b>None</b>	All
Regulation of a.f. stations' install.	<b>None</b>	All
Install. of alternative fuel stations	<b>SRB</b> , MKD, B&H	ALB, KOS, MNE



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# Deliverable C2/D2 – Status, Activities, Challenges

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- **C2/D2 Status:** On-going
- **C2/D2 Planned Activities**
  - Development of Transport model - Estimation of traffic (at 2030, 2040, 2050)
  - Identification of the needed EVCS locations on the extended TEN-T (at 2030, 2040, 2050)
  - Assessment of the needs for the development of each EVCS on the extended TEN-T (at 2030, 2040, 2050)
  - Impact analysis of the development of the EVCS
- **C2/D2 Challenges**
  - Change of Transport Planner => Delays
  - Data collection (mainly on costs of EVCS development in each RP)



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# Deliverable C2/D3 – Status, Activities, Challenges

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- **C2/D3 Status:** On-going
- **C2/D3 Planned Activities**
  - Collection of information:
    - Business models / contracting modalities used for the installation of EVCS in the RPs
    - Business models / contracting modalities used for the installation of EVCS in the EU (examples) and other countries
    - Existing legal framework for the implementation of projects with public- private- partnership (PPP) schemes (models) in the RPs and internationally
  - Estimation of (basic, unit) costs for the development of EVCS – (CAPEX/OPEX Sub-team)
  - Calculation of costs for the development of each EVCS on the extended TEN-T (at 2030, 2040, 2050) – (CAPEX/OPEX Sub-team)
  - Identification/ proposal of business model(s) for each RP, for the deployment of EVCS
  - Elaboration a PPP contract model (in case PPP model is selected)
- **C2/D3 Challenges**
  - EVCS cost data (CAPEX and OPEX)
  - Availability of grid electricity close to the locations of the new EVCS



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# Deliverable C2/D4 – Status, Activities, Challenges

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- **C2/D4 Status:** Not started yet
- **C2/D4 Planned Activities**
  - Identification of additional legislation required for each RP (at 2030, 2040, 2050)
  - Identification of institutional framework modifications required for each RP (at 2030, 2040, 2050)
  - Identification of potential sources of funding for the development of EVCS in the RPs (at 2030, 2040, 2050)
  - Planning for coordinated development of EVCS in all RPs (at 2030, 2040, 2050)
  - Preparation of a roadmap for each RP (2030, 2040, 2050).
- **C2/D4 Challenges**
  - N/A



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# Time-line of the production of the C2 Deliverables

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- C2/D1: Completed
- C2/D2: 15/ December/ 2022
- C2/D3: 31/ December/ 2022
- C2/D4: 28/ February/ 2023
- C2/D5: 30/ April/ 2023



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## Contact information

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# Questions and Discussion

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**Any comments/suggestions?**



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# Thank you!

## **CONNECTA Project team**

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