



MESTNA OBČINA
VELENJE



Hydrogen future in the SAŠA region

Niko Natek,
Energy agency of Savinjska, Šaleška
and Koroška region

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2nd project and stakeholder meeting, DanuP-2-Gas project

02.03.2021

Video conference (Zoom)

ENVIRONMENTAL DEGRADATION



SUSTAINABLE MOBILITY



MESTNA OBČINA
VELENJE

SUSTAINABLE MOBILITY

- Free system for automated rent of city bikes
- 71 bikes, 15 stations, 104 bike docks in Velenje and Šoštanj
- Free rent for users up to 14 hours (weekly); the system includes quality bike KR PAN (Slovenian manufacturer)
- Over 84,935 registered users since the beginning of operation of the system BICY;
- 104,526 times rented – weekly up to 1,500
- Annual Operational costs (maintenance, upgrades and additional purchases) of BICY: 53,214.31 € (2016)

- Free city public transport (minibus)
- 5 lines, 43 stations
- 35,000 passengers per month
- Saving 2,000,000 tons of CO2 annually.
- A specially-fitted bus runs the yellow route and is also disabled-friendly.
- Smart phone application enables up-to-date information on bus arrivals on the stations



INVESTMENT

The investment project is constituted from 3 key elements:

- 1.) Construction of a **Hydrogen Refueling Station**,
- 2.) **Upgrade local hydrogen production facilities** (electrolyser, compressor units, storage, etc.)
- 3.) Modernization of the existing public transport service Lokalç (currently operating EURO5 and EURO6 diesel-powered minibuses) with zero-emission **Fuel Cell Electric Vehicles**



AMBITION TO BECOME A HYDROGEN VALLEY

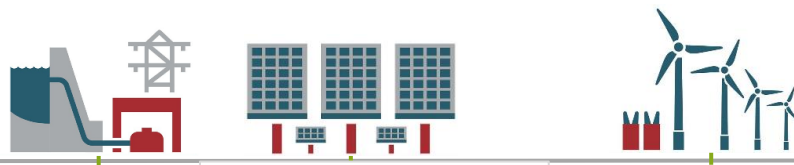
OBJECTIVE:

Develop and deploy a **replicable, balanced and integrated hydrogen economy** by facilitating investment into **market-ready hydrogen technologies**.

CONTEXT:

- Make use of available local hydrogen sources and develop applications for facilitating the **energy transition**, starting with zero-emission public transport.
- Apply the small-scale hydrogen economy as a first building block for making the energy supply **green**.
- Build upon the deployment project to carry out **coordination and support activities**, targeted at **raising awareness**, work to include hydrogen technologies into the **formal and informal educational curricula's** (local /national elementary schools) as well as **research and development programmes** (local/national vocational high-schools and academia)
- Establish the demonstration pilot as a **development platform** (transfer of knowledge) that can be used to **replicate similar projects** across SEE and other coal intensive regions in transition.

PROJECT CONCEPT



SYSTEM OPERATORS

MARKET

AGREGATORS

H2 USE – TEŠ GENERATOR COOLING

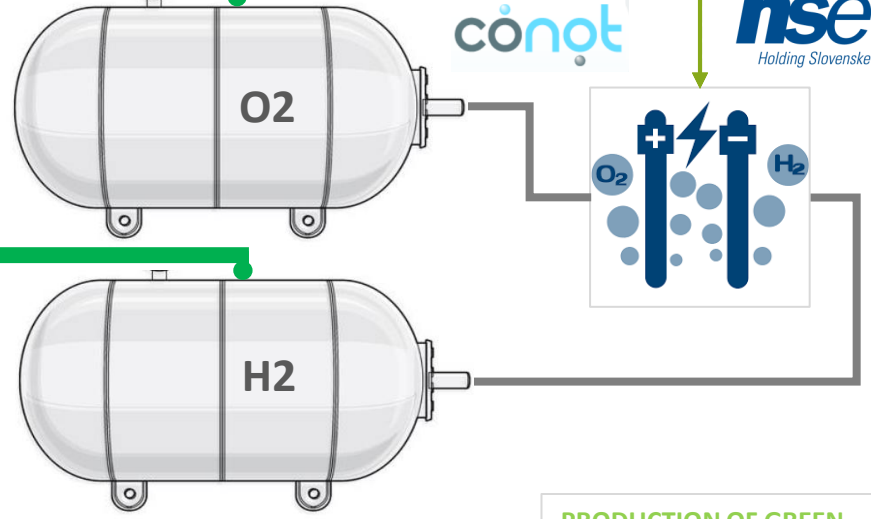
H2 USE – ZERO EMISSION TRANSPORT

PRODUCTION OF CLEAN ELECTRICAL ENERGY

PRODUCTION OF GREEN HYDROGEN FROM EXCESS RENEWABLE POWER

ENERGY TRANSITION

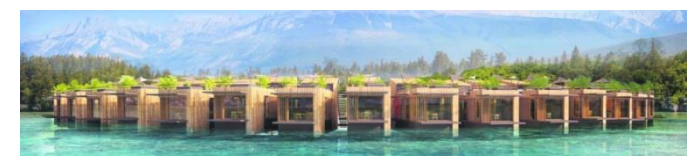
- high share of renewable energy
- stable and robust transmission grid
- development of local and regional economy
- reduced energy dependence
- environmental protection
- ...



Univerza v Ljubljani
Fakulteta za strojništvo
Laboratorij za procesno avtomatiko
Univerza v Mariboru
Fakulteta za energetiko

Research and development

Razvojni center za vodikove tehnologije
Knowledge transfer, skill development



RAZVOJNA AGENCIJA SAVINJSKO-ŠALEŠKE REGIJE, d. o. o.

Green tourism

Sustainable mobility

PETROL SRIPACS+ ECUBES ARCOLA
Strateško razvojno inovacijsko partnerstvo na področju Mobilnosti
Hydrogen & Flexibility



IMPLEMENTED ACTIVITIES

ADHERENCE TO THE FCH JUs CITIES AND REGIONS INITIATIVE



The image displays a large collection of logos for various companies and organizations, arranged in a circular pattern around the central text 'FCH'. The logos include:

- FERGUSON marine
- BMW Group
- AD-VENTA ONBOARD HYDROGEN SPECIALIST
- Air Liquide
- PLUG POWER EUROPE
- AsahiKASEI ASAHI KASEI EUROPE
- BALLARD
- NAVAL GROUP
- HydrogenHub
- CeresPower
- SOLID POWER
- PM PROTON MOTOR Fuel Cells - Power Systems
- HOLTHAUSEN GROUP
- HYSEAS ENERGY
- cEnergy
- ataway
- fuelcellenergy
- H2B2
- DAIMLER
- AFC Energy
- HyET Hydrogen
- Fronius
- cmi
- VDL BUS & COACH
- TOYOTA
- PersEE Innovation
- eps
- FAUN KIRCHHOFF GRUPPE
- ariema
- ITM POWER
- MARITIM FORENING SOGN OG EJDANDANE
- Linde
- AREVA
- SEIYA consulting
- SyngasCell
- sunfire
- storengy
- Nedstack
- cEnergy
- Logan Energy limited
- uni per
- VIESSMANN climate of innovation
- HYDROGENICS Advanced Hydrogen Solutions
- ALSTOM
- BOC A Member of The Linde Group
- CALVERA Hydrogen

IMPLEMENTED ACTIVITIES



MESTNA OBČINA
VELENJE

ESTABLISHMENT OF A WIDE PROJECT NETWORK OF SUPPORT ORGANIZATIONS



Univerza v *Liublani*
Fakulteta za *strojništvo*



Laboratorij za procesno avtomatiko



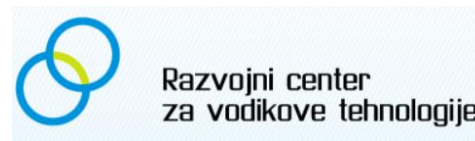
REPUBLIKA SLOVENIJA
MINISTRSTVO ZA INFRASTRUKTURO



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA OKOLJE IN PROSTOR



Univerza v Mariboru
Fakulteta za energetiko



FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING



PETROL



MOBILITY AND TRANSPORT



EKO SKLAD
SLOVENSKI OKOLJSKI
JAVNI SKLAD



REPUBLIC OF SLOVENIA
MINISTRY OF DEFENCE

IMPLEMENTED ACTIVITIES



MESTNA OBČINA
VELENJE

DEVELOPMENT AND ANALYSIS OF PUBLIC TRANSPORT ROUTES

- Joint development of routes, stops and travel itineraries together with local communities from MOV and OŠ.

Guiding principles:

- Improved access to PTS
- Adaptation of the scope and frequency of travel
- Increase the number of PTS users
- Encouragement of multimodality

7 prog

- Modra proga (Blue route)
- Oranžna proga (Orange route)
- Rdeča proga (Red route)
- Rjava proga (Brown route)
- Rumena proga (Yellow route)
- Turkizna proga (Turquoise route)
- Vijolična proga (Violet route)
- Zelena proga (Green route)

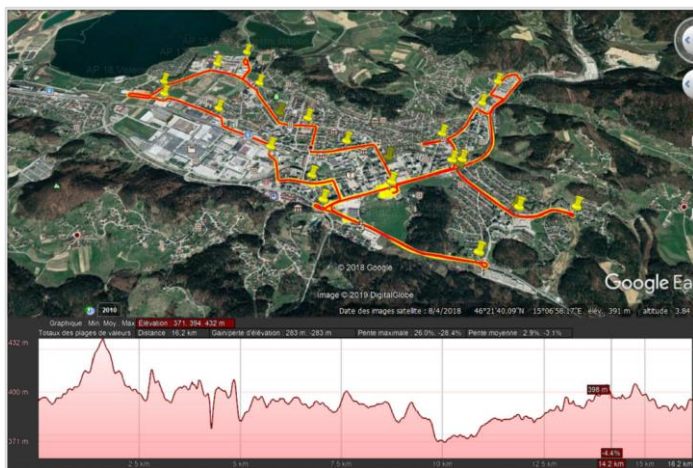
500.000+ km of traveled distance annually



IMPLEMENTED ACTIVITIES

ANALYSIS OF HYDROGEN REQUIREMENTS AND SCOPE OF PRODUCTION

Modeling of operational use of hydrogen on specific routes (stop and go, inclines, load, thermal management, etc.)



Bus line modelling | Calculation data and assumptions

- General data**
 - Average commercial speed (calculated) : 23.3 km/h
 - Service duration on 1 day : 14.7 hours
 - Loop distance : 16.3 km
 - (note : Velenje website mentions 21 km, but we calculate 16.3 km - TBC)
 - Stop time at each bus stop : 20 seconds
- BUSINOVA H2 Midibus L**
 - Unloaded weight : 12 900 kg
 - Passengers number considered : 25 and 45
 - Total weight
 - At 25 passengers : 14 600 kg
 - At 45 passengers : 15 960 kg
- Thermal management (passengers and driver compartments temperature)**
 - 3 cases studied (conservative)
 - No air conditioning, when external temperature around 15 to 22°C : 0 kW for thermal management
 - Moderate thermal management consumption : 3 kW when :
 - air conditioning for temperatures between approx. 22 to 28°C
 - Additional electrical heating for temperatures below - 5°C
 - High air conditioning for temperatures above 28°C : 5kW for thermal management

Yellow line modelling | 1st case : autonomy at full H2 consumption

- Useful H2 mass in tanks is 29.1 kg
- Simulation with all energy from H2, battery used only as a buffer (nominal mode)

Passengers #	Thermal management (kW)	Traction energy (excl. regeneration)	Auxiliaries energy (incl. thermal mgmt)	Regeneration (energy recovery)	Total energy (kWh/km)	Daily H2 consumption (kg)	Battery SOC final (%)	Autonomy range (km)	Equivalent H2 consumption (kg/100km)
25	0	1.012	0.173	-0.243	0.942	29.1	90%	448	6.50
	3	1.012	0.302	-0.243	1.071	29.1	90%	392	7.43
	5	1.012	0.389	-0.243	1.158	29.1	90%	363	8.02
45	0	1.096	0.173	-0.244	1.024	29.1	90%	410	7.09
	3	1.096	0.302	-0.244	1.154	29.1	90%	364	8.00
	5	1.096	0.389	-0.244	1.240	29.1	90%	339	8.59

- Autonomy in the range 339-448 km using the full H2 tanks and no battery energy
- With moderate thermal management, we can target an average autonomy between 364/392 km and H2 consumption between 7.5 to 8 kg/100km
- Please note that by end of life of the fuel cell, these values would decrease by 10%

→ in order to increase some autonomy, we can also use the batteries, see next slide

Parameter/proga	MODRA	ORANŽNA	RDEČA	RJAVA	TURKIZNA	VIJOLIČNA	ZELENA	SKUPAJ
Prepotovana pot [dan]	390,78	63,76	639,58	31,21	696,34	65,57	45,26	1981,7 km/dan
Prepotovana pot [leto]	101948,64	16634,03	166855,78	8141,70	181665,18	17104,93	2353,52	507539,3 km/leto
Obratovalni čas [leto]	1948,88	466,72	7769,94	313,06	8493,51	521,77	97,07	20028,3 ur
Poraba goriva [kg H2/100km]	8,01	6,23	6,94	7,98	6,93	6,20	6,75	7,16 kg/100 km
Poraba vodika [dan]	31,30	3,97	44,39	2,49	48,26	4,07	3,06	141,57 kg/dan
Poraba vodika [leto]	8166,09	1036,30	16542,56	649,71	14638,83	1060,51	158,86	43307,9 kg/leto
Povprečna hitrost [km/h]	52	36	21	26	21	33	24	30,58 km/h
Št. polnjenj (indikativno)	1,043	0,132	1,480	0,083	1,609	0,136	0,102	4,72

IMPLEMENTED ACTIVITIES



MESTNA OBČINA
VELENJE

ACQUIREMENT OF NATIONAL CO-FINANCING SOURCES (GRANT)

– vozi drugih kategorij (razen M1) z vsaj petimi sedeži poleg vozniškega sedeža (npr. minibus) ali nadgradnjami z najmanj enim ali največ tremi priklopniki (npr. cestni turistični vlek), ki bodo namenjena izključno za javni prevoz potnikov (tudi otrok, mlajših od 12 let) in ki bodo namenjena širitvi ali vzpostavitvi novih linij javnega mestnega ali medkrajevnega potniškega prometa oziroma bodo na obstoječih linijah javnega mestnega in medkrajevnega potniškega prometa nova vozila nadomestila obstoječa vozila namenjena javnemu ali medkrajevemu potniškemu prometu emisijskega razreda EURO III in nižje ali bodo namenjena za prevoz potnikov in njihove prtljage.

Kategorije vozil so določene v Prilogi I Pravilnika o ugotavljanju skladnosti vozil (Uradni list RS, št. 105/09, 9/10, 105/10 – ZMV in 75/17 – ZMV-1), skladno z Zakonom o motornih vozilih (Uradni list RS, št. 75/17). Morebitna nadgradnja vozil mora biti namenjena prevozu potnikov (tudi otrok, mlajših od 12 let).

2. VIR IN VIŠINA SREDSTEV, VIŠINA NEPOVRATNE FINANČNE SPODBUDE TER PRIZNANI STROŠKI NALOŽBE

a) vir in višina sredstev
Sredstva za dodeljevanje nepovratnih finančnih spodbud se zagotavljajo na podlagi Odloka o Programu porabe sredstev Sklada za podnebne spremembe v letu 2019.

Skupna višina sredstev po tem javnem pozivu znaša skupaj za vse občine 10.000.000,00 EUR, od tega bo najmanj 2 mio EUR namenjenih občinam, ki imajo določen delež ozemlja v zavarovanem območju, najmanj 2 mio EUR pa občinam, ki imajo sprejet Odlok o načrtu za kakovost zraka.

b) višina nepovratne finančne spodbude
Višina nepovratne finančne spodbude znaša do 80 % vrednosti cene za posamezno vozilo, ki ne vključuje DDV, vendar ne več kot:
– 300.000,00 EUR za posamezno novo vozilo na električni pogon, brez emisij CO₂;
– 500.000,00 EUR za posamezno novo vozilo na vodik, brez emisij CO₂.

V primeru, da bo do objave zaključka javnega poziva v Uradnem listu Republike Slovenije prispele več vloge, na podlagi katerih bi vsota nepovratnih finančnih spodbud presegla razpisana sredstva po tem javnem pozivu, bo nepovratna finančna spodbuda za vozila zadnje prišlele popolne vloge dodeljena v sorazmerni nižjem znesku do skupne višine še razpoložljivih sredstev.

c) priznani stroški naložbe
Priznani stroški naložbe vključujejo strošek nakupa novega vozila brez DDV.

3. UPRAVIČENE OSEBE ZA KANDIDIRANJE NA JAVNEM POZIVU

Na javnem pozivu lahko kandidirajo občine, ki imajo sprejet občinski proračun z vključeno postavko nakupa predmetnih vozil oziroma sprejet načrt razvojnih programov (NRP) s finančno konstrukcijo za naložbo, ki bo predmet spodbude.

4. DODATNE ZAHTEVE IN POGOJI

a) pravočasna in popolna vloga
Osnovni pogoji za dodelitev nepovratne finančne spodbude je pravočasno oddana in popolna vloga. Vloga je pravočasna, če je oddana v času trajanja tega javnega poziva.

Vloga je popolna, ko občina predloži v celoti izpolnjen obrazec Vloga 70SUB-PP19 in obvezne priloge:
– predračun/ponudbo za nakup vozila;
– tehnično dokumentacijo proizvajalca vozila, iz katere izhaja, da vozilo izpolnjuje pogoje javnega poziva in iz katere so jasno razvidni podatki o vozilu (znakna, tovamiška in komercialna oznaka, kategorija in vrsta vozila ter nazivna moč motorja in vrsta goriva oziroma pogona), ki so lahko vključeni v predračun/ponudbo ali podani ločeno v specifikaciji vozila;

**EKO SKLAD**
SLOVENSKEGA OKOLJSKEGA
JAVNEGA SKLADA
www.ekosklad.si
Razpisna enota 03
1000 Ljubljana
01 47 46 40
sklad@ekosklad.si

Številka: 36013-2/2019-2
Datum: 15. 7. 2019

Eko sklad, Slovenski okoljski javni sklad (v nadaljnjem besedilu: Eko sklad), na podlagi prvega odstavka 146. g člena Zakona o varstvu okolja (Uradni list RS, št. 39/06 – uradno prečiščeno besedilo, 49/06 – ZMleD), 69/06 – odl. US, 33/07 – ZPNačrt, 57/06 – ZFO-1A, 70/08, 106/09, 106/09 – ZPNačrt-A, 48/12, 57/12, 92/13, 59/15, 102/15, 30/16, 61/17 – GZ 2/17B – ZNOrg in 84/18 – ZURKOE) in 18. člena Splošnih pogojev poslovanja Eko sklada, Slovenskega okoljskega javnega sklada, št. 0141-7/2019-2 z dne 7. 5. 2019 (objavljeni na spletni strani: <https://www.ekosklad.si/cms/hinymceupload/dokumenti/SPP.pdf>) ter na osnovi vloge, ki jo je vložila MESTNA OBČINA VELENJE, TITOV TRG 1, 3320 VELENJE, matična št. 5864268000, devčna št. SI49082884, ki jo zastopa podpisani Peter Dermol, za pridobitev nepovratne finančne spodbude na javnem pozivu 70SUB-PP19 Nepovratne finančne spodbude občinam za nakup novih vozil za prevoz potnikov (Uradni list RS, št. 34/19; v nadaljnjem besedilu: javni poziv), odzija

ODLOČBO
o dodelitvi pravice do nepovratne finančne spodbude

- Vlagateljka MESTNA OBČINA VELENJE, TITOV TRG 1, 3320 VELENJE, matična št. 5864268000, devčna št. SI49082884 (v nadaljnjem besedilu: občina), je upravičena do nepovratne finančne spodbude v višini do:
2.000.000,00 EUR
za naložbo v nakup novih vozil, ki bodo uporabljena za namen, določen z javnim, in sicer:
* 4 vozila kategorije M3, s pogonom na vodik, brez emisij CO₂, ki izpolnjujejo pogoje javnega poziva in bodo prvič po proizvodnji registrirana v Republiki Sloveniji na ime občine in ki bodo kupljena s strani občine kot prve lastnice po oddaji vloge na javni poziv.
- Nepovratna finančna spodbuda bo izplačana na podlagi sklenjene pogodbe o izplačilu nepovratne finančne spodbude, s katero se določijo pogoji za izplačilo nepovratne finančne spodbude ter 1. točke tega zveza.
- Strošek postopka ni bilo.

Obrazložitev:

Občina je dne 27. 5. 2019 na Eko sklad pravočasno vložila vlogo za dodelitev nepovratne finančne spodbude, in sicer za nakup:
* 4 vozila kategorije M3, s pogonom na vodik, brez emisij CO₂, po navedenem javnem pozivu. Vloga se vodi pod oznako zadeve 36013-2/2019.

Po pregledu vloge je bilo ugotovljeno, da je ta popolna in da je vlogi priložena vsa zahtevana dokumentacija, kot to opredeljuje javni poziv v 4.a) točki. Občina ima sprejet občinski proračun z vključeno postavko nakupa predmetnih vozil oziroma sprejet načrt razvojnih programov (NRP) s finančno konstrukcijo za naložbo, ki bo predmet spodbude, kot to izhaja iz pisne izjave občine, in je upravičena zaprositi za nepovratno finančno spodbudo, kot to določa 3. točka javnega poziva.

Ugotovljeno je bilo, da načrtovana naložba izpolnjuje zahtevane pogoje, opredeljene v 1. in 4. točki javnega poziva.

Priložena pravočasna in popolna vloga in ostale zahtevane dokumentacije izhaja, da gre za nakup novih vozil, za katere se skladno s pogoji 2.b) točke javnega poziva dodeli nepovratna finančna spodbuda v višini:

Ukrep	obseg	priznani stroški	višina spodbude
vozilo kategorije M3, s pogonom na vodik, brez emisij CO ₂	1 kom	630.745,00	500.000,00
Finančna spodbuda je določena glede na z javnim pozivom omejeno višino spodbude na vozilo.			
vozilo kategorije M3, s pogonom na vodik, brez emisij CO ₂	1 kom	630.745,00	500.000,00
Finančna spodbuda je določena glede na z javnim pozivom omejeno višino spodbude na vozilo.			
vozilo kategorije M3, s pogonom na vodik, brez emisij CO ₂	1 kom	630.745,00	500.000,00
Finančna spodbuda je določena glede na z javnim pozivom omejeno višino spodbude na vozilo.			
Nepovratna finančna spodbuda skupaj			2.000.000,00 EUR

V skladu s točko 4.e) javnega poziva občini za nakup vozil, navedenih v zvezi te odločbe, ni bila dodeljena nepovratna finančna spodbuda s strani dobaviteljev električne energije, toplote, plina ter tekočih in trdnih goriv po Uredbi o zagotavljanju pritranskoražne energije (Uradni list RS, št. 95/14). Navedeno izhaja iz pisne izjave občine.

1

3. člen
(višina in izplačilo nepovratne finančne spodbude)

Občini se, ob upoštevanju pogojev javnega poziva, nepovratna finančna spodbuda izplača v višini do **2.000.000,00 EUR** oziroma ne več kot v višini 80 % vrednosti cene za posamezno vozilo, ki ne vključuje DDV, in je razvidna iz predloženih računov. Znesek izplačila se uskladi s predloženimi računi ob upoštevanju pogojev javnega poziva.

Izplačilo nepovratne finančne spodbude se izvede predvidoma v šestdeseti (60) dneh, ob izpolnjevanju pogojev iz 2. člena te pogodbe, na bančni račun občine št. **SIS6 0133 3010 0018 411**.

Eko sklad ne odgovarja za posledice nepravilnega izplačila nepovratne finančne spodbude, nastale zaradi napaknih podatkov o številki transakcijskega bančnega računa občine.

4. člen
(preprečevanje odtujitve)

Vozilo mora najmanj tri (3) leta po prvi registraciji vozila ostati registrirano in v lasti občine – prejemnice nepovratne finančne spodbude. Če se ugotovi, da občina vozilo ni podaljšala registracije oziroma je vozilo odtujila prej kot v treh letih, mora prejeta sredstva vrniti Eko sklada z zakonskimi zamudnimi obrestmi. Čas od oddaje vozila iz prometa zaradi višje sile do dneva ponovne prijave v promet se ne všteta v triletno obdobje preprečitve odtujitve. Pri tem mora biti občina vsaj čas lastnika vozila.

5. člen
(nadzor)

Eko sklad ima pravico kadarkoli, v obdobju od izdaje odločbe o dodelitvi nepovratne finančne spodbude do pet (5) let po registraciji vozila, z ogledi, preverjanjem dokumentacije ali na drug način preveriti namensko porabo prejetih sredstev, skladnost dokumentacije in izvedbe naložbe z določili javnega poziva in veljavnimi predpisi ter spoštovanje preprečitve odtujitve predmeta nepovratne finančne spodbude. V primeru ugotovljene nenamenske porabe sredstev, kršitev predstov ali določitve pogodbe o izplačilu nepovratne finančne spodbude, je občina prejemnica nepovratne finančne spodbude dolžna Eko sklada vrniti prejeta sredstva skupaj z zakonskimi zamudnimi obrestmi za obdobje od prejema do vračila neupravičeno pridobljene nepovratne finančne spodbude.

6. člen
(reševanje sporov)

Morebitne spore v zvezi s to pogodbo bosta pogodbeni stranki reševali sporazumno oziroma z mediacijo. Če do sporazuma ne pride, je za spore pristojno sodišče v Ljubljani.

7. člen
(veljavnost)

Ta pogodba je sklenjena v dveh (2) enakih izvodi, in sicer za vsako pogodbeno stranko po eden (1) izvod. Oba izvoda štejeta za original. Ta pogodba stopi v veljavo, ko jo podpisata obe pogodbeni stranki.

Številka: 009-07-0009/2019

Kraj in datum: Velenje, 23. 7. 2019

Občina: MESTNA OBČINA VELENJE

Ime in priimek: Peter Dermol
podpisani

Podpis: [Podpis]

Ljubljana, 15. 7. 2019

Eko sklad, j. s.
mag. Vesna Črnlogar
sekretarka Eko sklada
po pooblastilu mag. Mojbe Vendramin,
direktorice Eko sklada

2

IMPLEMENTED ACTIVITIES

DEVELOPMENT AND PUBLICATION OF A TENDER FOR FCEVs (HYDROGEN BUSES)

OBJECT OF ORDER																									
Hydrogen urban bus																									
SPECIFICATIONS																									
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<p>Noise</p> <p>Conformity with ECE Law 51-02 External noise must comply with EEC Directive 92/97 and internal noise must comply with CUNA Directive NC504 / 01-02. The values and method of detection must be specified in the technical tender. In particular internal noise and vibration protection and sound insulation in the area above the engine compartment More than 70 dB in the driver's seat is not permitted, 71 dB in the center of the bus and 72 dB in the rear. It is appropriate, in accordance with UN / ECE Regulation 51.</p>																									
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MESTNA OBČINA
VELENJE

Mestna občina Velenje
Titov trg 1
3320 Velenje

Občina Šoštanj
Trg svobode 12
3325 Šoštanj

Investicijski program (IP)
Vodivke tehnologije v brez-emisijskem transportu



Velenje, september 2019

THE CONTRACTING AUTHORITY:
CITY MUNICIPALITY OF VELENJE
TITOV TRG 1
3320 VELENJE

TOGETHER WITH:
MUNICIPALITY OF ŠOŠTANJ
TRG SVOBODE 12
3325 ŠOŠTANJ

CONTRACT TITLE:
PUBLIC CONTRACT FOR THE PURCHASE OF EMISSION-FREE BUSES FOR URBAN PASSENGER TRANSPORT USING HYDROGEN ENERGY

INSTRUCTIONS FOR PREPARATION OF THE TENDER

A) BASIC REQUIREMENTS AND INFORMATION ON THE SUBJECT MATTER OF THE CONTRACT
B) SELECTION CRITERIA
C) CRITERIA FOR QUALITATIVE SELECTION
D) REQUIRED CONTENT OF THE TENDER DOCUMENTATION

Velenje, September 2019

IMPLEMENTED ACTIVITIES

JIVE 2 – Reserve City Summaries



	Essen (Replacement Akershus moved to German Cluster)	Velenje (Replacement Reykjavik, within NE Cluster)	Emmen (Replacement Flevoland, within Benelux Cluster)
Background	<ul style="list-style-type: none"> Applied to be one of the NOW H2 cities. Advantage: close to RVK/WSW -> Ruhrbahn and WSW/RVK can both use the addition of 10 buses to Essen as leverage in negotiations with suppliers to receive more offers. 90% funding on the total costs for infrastructure by NRW; regional sources Ruhrbahn (operator) procure the buses + as JIVE 2 beneficiary. 	<ul style="list-style-type: none"> Have secured state funding for the project (€4mn). JIVE 2 beneficiary will be Velenje Municipality (possibility to add Sostanj Municipality). First FC bus project in Slovenia. Current concession running until Oct2020 -> replacement FCBs needed by Dec2020 latest. 	<ul style="list-style-type: none"> Have secured co-financing for the project (€0.75mn) from national sources. Regional co-financing (€2.5+2.5mn) in place Links to the development of the Northern Netherland 'hydrogen valleys' project HEAVENN. Emmen project will be carried out by existing JIVE 2 partner OBGD and operator Qbuzz.
Buses	<ul style="list-style-type: none"> 10 buses – 12m (would prefer 18m – 70% current fleet is 18m but not enough choice) Preferred manufacturer is Daimler, but likely to receive 3 offers from Solaris, Caetano, VH for the RVK, WSW tender. Ruhrbahn would publish an individual tender, with contract award 3 months from date of publication. 	<ul style="list-style-type: none"> 6 11m-buses - funding for 5 (requested more). Buses to be split between 2 municipalities: 4 in Velenje, and 2 in Sostanj PTO identified already. Tender open for buses. In discussion with a suppliers (currently Safra, Rampini) on price/ technical details. Delivery forecast by Dec 2020 (est. 12-14 months from date of order). 	<ul style="list-style-type: none"> 10 12-metre buses, tender procedure ongoing PTO already identified as Qbuzz (same as Groningen) JIVE 2 partner would be OBGD (same as Groningen) Buses will operate on the regional lines from Emmen Buses will be ordered by Dec 2019 and delivered between by December 2020.
HRS	<ul style="list-style-type: none"> Currently have a mobile refuelling solution from Air Liquide for interim refueling option. Tender for infrastructure and h2 supply (blue or green H2 only). €3mn HRS cost; preference to build it themselves (90% total cost DE/NRW funded). Estimate 6-12 months from tender launch to commissioning – site on existing depot => easier predicted permitting. 	<ul style="list-style-type: none"> Expected timescales for commissioning: 9-12 months from award of contract. Advantage: site is 'semi-private' (i.e. can refuel with prior permission). There is no need to obtain HRS permits due to national regulations for private sites. HRS civil works to begin Jan 2020. Site owned by energy company. On site production of H2 by electrolysis. 	<ul style="list-style-type: none"> Expected timescales: Dec 2020/Q1 2021, fallback at HRS Groningen and HRS Delfzijl An HRS will be built in Emmen at GZI location The site is owned by NAM Hydrogen production by GZI On site production of Green hydrogen Status of permitting: preliminary HRS design discussed with Omgevingsdienst Drenthe
Milestones	<ul style="list-style-type: none"> Board approval – 3-4 weeks from date of FCH JU in principal agreement Delivery timescales buses = risk (as with existing JIVE 2 cities) Infrastructure co-financing confirmed - 2 months from application submission Award of bus contract to OEM – 3 months from launch – Q1 2020. 	<ul style="list-style-type: none"> Sostanj municipality needs to register for a PIC code + appoint a LEAR Need to launch H2 supply + HRS tender by end of 2019 to meet timescales. Bus procurement prolonged by 2 months; award of contract between Oct/Dec. 19 (following in principal agreement from FCH JU). 	<ul style="list-style-type: none"> In principal confirmation of JIVE 2 funding – end of October Join JIVE 2 via amendment – 01/02/2020 Order for 10 buses from OEM – Dec 2019 HRS operational – expected Dec 2020/Q1 2021 Buses delivered – expected Dec 2020 Start of operation – Dec 2020

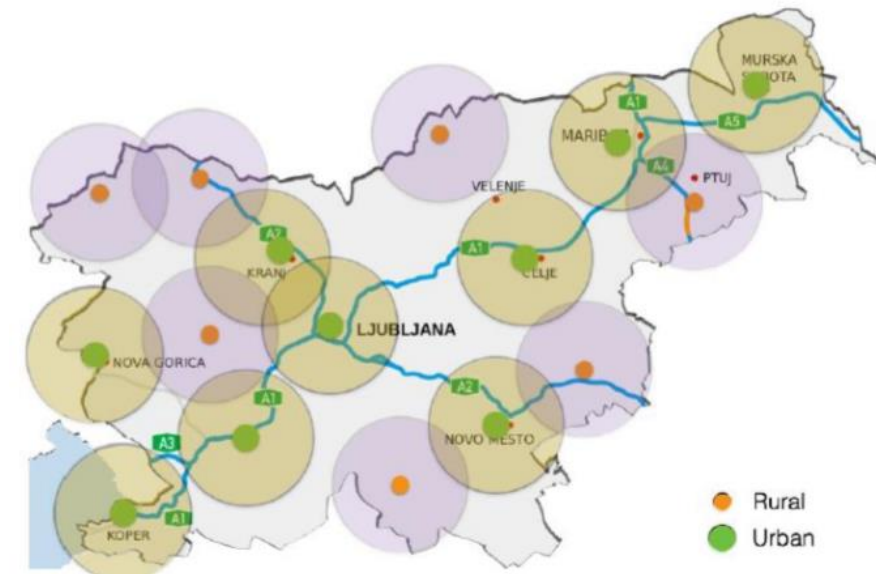
THIRD DEVELOPMENT AXIS (NORTH), RESHUB AND ZEMC-S

- The northern part of the third development axis in development will put the City of Velenje on a strategical location between the Koroška region and the main national motorway connecting east to west (A1 Šentilj – Koper = Core TEN-T network)
- The strategic focus of the project is to provide hydrogen refueling capability to the Graz-Ljubljana-Zagreb corridor and expand the European network of refueling stations, by placing the station nearby the third national development axis (Fastlane on route F2-2 connecting the lower part of the Savinjska valley with Velenje and beyond to Koroška region, that has already started with construction).

ECUBES ARCOLA
Hydrogen & Flexibility



REPUBLIC OF SLOVENIA
MINISTRY OF DEFENCE





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1

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NEXT STEPS

- Acquisition of co-financing sources for infrastructure development
- Order of FCEVs
- Vehicle delivery and testing
- Civil works and equipment installation (start-up)
- Co-operation with the MORS and Ecubes Arcola on projects RESHUB and ZEMC-S
- Development and signature of the service concession with the chosen PTO
- Training of drivers, maintenance crew and infrastructure operators
- PTS launch
- Development of R&D as well as capacity development projects in cooperation with existing stakeholder networks
- Awareness raising and promotion
- Establishment of the knowledge transfer platform for FCH technology uptake in SEE and the Western Balkans
- ...

INDICATIVE TIMELINE



MESTNA OBČINA
VELENJE

DP	Aktivnosti	2020												2021					2022					2023									
		Mesec												jan	feb	mar	apr	maj	jun	jul	avg	sep	okt	nov	dec	jan	feb	mar	apr	maj	jun	jul	avg
1	Upravljanje projekta in koordinacija																																
1.1	Vzpostavitev in uvedba struktur za nadzor aktivnosti, časovnice, sredstev in skladnosti																																
1.2	Vodenje projekta																																
1.3	Spremljanje in vrednotenje mejnikov in rezultatov projekta																																
2	Oblikovanje in razvoj koncepta za uvedbo vodikovih tehnologij																																
2.1	Razvoj in dokončanje novih poti javnega prevoza in operativnih režimov																																
2.2	Posvetovanje in usklajevanje s ključnimi zainteresiranimi stranmi																																
2.3	Pogajanja, razvoj in podpis pogodbe o koncesiji za storitve z izbranim prevoznikom (IJP)																																
2.4	Začetek storitve javnega prevoza (prva javna vožnja)																																
3	Nakup in priprava na obratovanje za VGC brez emisij																																
3.1	Priprava tehnične projektne dokumentacije, tržnih raziskav in komunikacije z dobavitelji																																
3.2	Izdelava, objava in vodenje razpisa za nabavo vozil VGC																																
3.2	Dostava, homologacija, registracija in zagon vozil																																
3.4	Preskušanje vozil, kalibracije in končne nastavitve ter prevzem vozil																																
4	Nabava, namestitve in zagon proizvodne in polnilne infrastrukture																																
4.1	Opredelitev in optimizacija zmogljivosti proizvodnje, skladiščenja in polnjenja vodika																																
4.2	Priprava končne revizije tehnične dokumentacije																																
4.3	Izdelava, objava in vodenje razpisa za nabavo opreme in izgradnjo infrastrukture																																
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5	Financiranje projekta																																
5.1	Pridobitev in usklajevanje finančnih vložkov javnih in zasebnih partnerjev																																
5.2	Prijava in dodelitev nepovratnih sredstev za nacionalno sofinanciranje																																
5.3	Prijava in dodelitev nepovratnih sredstev za sofinanciranje EU (JIVE 2)																																
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6	Komunikacija, ozaveščanje in replikacija																																
6.1	Promocijski dogodek ob začetku storitve JP in informacijska kampanja																																
6.2	Vključevanje v mednarodne iniciative in omrežja																																
6.3	Medijske aktivnosti																																
6.4	Komunikacija in sodelovanje s potencialnimi replikatorji projekta																																

KLJUČNI MEJNIKI		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Vzpostavljena struktura vodenja projekta in strokovnega predstavnštva (KONČANO)																																	
Končne verzije linij in postajališč javnega prevoza usklajenih z uporabniki in operaterji (KONČANO)																																	
Finalized PTS routes (done) Podpis pogodbe o sofinanciranju nakupa vozil (KONČANO)																																	
Objava javnega razpisa za nabavo vozil (ponovna objava po skrajšanem postopku)																																	
Oddaja pogodbe o dobavi dobavitelju vozila (naročilo vozil)																																	
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Oddaja naročila o dobavi dobaviteljem vodikove opreme in infrastrukture																																	
Začetek gradbenih del																																	
Dostava in registracija vozil																																	
Začetek storitve javnega prevoza (prva javna vožnja)																																	



Thank you!

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