

SLOVENIAN APPROACH TOWARDS GREENING DEFENCE

EVROPSKI OBRAMBNI SKLAD - SLOVENSKI INFORMATIVNI DAN 2024
23 MAJ 2024 | LJUBLJANA, SLOVENIA

STRATEŠKI PRISTOP VKLJUČEVANJA SLOVENSKIH PARTNERJEV V RAZPISE EDF

STRATEGIC APPROACH TO INVOLVING SLOVENIAN PARTNERS IN EDF CALLS

EDF-2021-INDY | EDF-2021-NOMAD
EDF-2023-CALIPSO
EDF-2024-?

Matej GAJZER
TECES | SiEnE

Evropski obrambni sklad (EDF) - Instrument Evropske komisije (EK)

EU co-financing with Member States €5.3 billion for 2021-2027

EU budget €2.7 billion for 2021-2027

European Defence Fund

Financial toolbox (Member States budget) €8 billion for 2021-2027

- Spodbujanje razvojno-tehnološkega povezovanja članic EU, podjetij in RO za krepitev obrambnih zmogljivosti EU;
- Podpora krepitvi evropske obrambne tehnološke in industrijske baze (EDTIB - European Defence Technological and Industrial Base) - v zadnjih letih ključno središče političnih prizadevanj EU, ne le iz varnostnih razlogov, ampak tudi iz gospodarskih razlogov.
 - krajsanje dobavnih verig | krepitev ključnih deležnikov v verigah vrednosti iz EU | spodbujanje razvoja civilnih rešitev za uporabo tudi za obrambne namene (dvojna raba) | trend zmanjševanja odvisnosti od ostalih ne EU gospodarstev ...
 - STOP** Kitajska, Rusija, Azija, Južna in Severna Amerika itd. → vsaj praviloma!
- Letni razpisi EDF: 2021: 1,1 milijarde € | 2022: 1 milijarde € | 2023: 1,2 milijarde € | 2024: 1,1 milijarde €
- Aktivnosti: Raziskave (Research) → Razvoj (Development) | ... → ... | Nabava (Procurement)

23. maj 2024 | SBRA, Evropska Komisija, MORS | Evropski obrambni sklad (EDF) - Slovenski informativni dan 2024 | Strateški pristop vključevanja slovenskih partnerjev v programe EDF

SiEnE

Julija 2020 ustanovljeno partnerstvo SiEnE predstavlja **strateški in celovit pristop** naslavljanja **zelenega prehoda, energetske in okoljske izzive** na obrambnem področju pod okriljem TECES in Ministrstva za obrambo Republike Slovenije.

- celovit pristop h krepitvi sodelovanja civilnih in obrambnih deležnikov;
- raziskovalno-razvojno in tehnološko sodelovanje;
- vključevanje v mednarodne obrambne programe, projekte in dobavne verige;
- podpora razvoju rešitev za civilni in obrambni namen (dvojna raba).

tec.es established by REPUBLIC OF SLOVENIA MINISTRY OF DEFENCE

Odobreni projekti TECES v okviru EDF2021

INDY

Energy Independent and Efficient Deployable Military Camps

SELECTED PROJECTS EUROPEAN DEFENCE FUND (EDF) 2021

CALL TITLE:	Energy efficiency and energy management
TOPIC TITLE:	Energy independent and efficient systems for military camps
DURATION OF THE PROJECT:	24 months
TYPE(S) OF ACTIVITIES:	Studies
ESTIMATED TOTAL COST:	€ 14,229,475.59
MAXIMUM EU CONTRIBUTION:	€ 14,229,475.59

SHORT DESCRIPTION OF THE PROJECT:
INDY will develop a strategic roadmap towards future energy independent and efficient deployable military camps. The project "Energy Independent and Efficient Deployable Military Camps" (INDY) aims to develop a strategic roadmap towards the future energy independent and efficient deployable military camps, based on a paradigm shift for energy production, conversion, storage, transport, distribution and final usage. The project is building on military and civilian EU and national projects.
Related PESCO project: Energy Operational Function (EOF)

NOMAD

Novel energy storage technologies usable at Military Deployments in forward operating bases

SELECTED PROJECTS EUROPEAN DEFENCE FUND (EDF) 2021

CALL TITLE:	Energy efficiency and energy management
TOPIC TITLE:	Next generation electrical energy storage for military forward operating bases
DURATION OF THE PROJECT:	48 months
TYPE(S) OF ACTIVITIES:	Integrating knowledge, Studies, Design, Increasing efficiency
ESTIMATED TOTAL COST:	€ 20,719,040.72
MAXIMUM EU CONTRIBUTION:	€ 19,687,421.02

SHORT DESCRIPTION OF THE PROJECT:
NOMAD will develop next generation electrical energy storage for military forward operating bases. The project "Novel energy storage technologies usable at Military Deployments in forward operating bases" (NOMAD) will build a collaborative framework among European industries, R&D organisations and relevant stakeholders in order to promote, support the development and operational validation of European energy storage and associated technologies, from feasibility studies to validation in relevant environments.
Related to PESCO project: Energy Operational Function (EOF)

23. maj 2024 | SBRA, Evropska Komisija, MORS | Evropski obrambni sklad (EDF) - Slovenski informativni dan 2024 | Strateški pristop vključevanja slovenskih partnerjev v programe EDF

SiEnE

Slovenian Energy and Environment Partnership in Defence

REPUBLIC OF SLOVENIA MINISTRY OF DEFENCE

tec.es

SLOVENIAN APPROACH TOWARDS GREENING DEFENCE

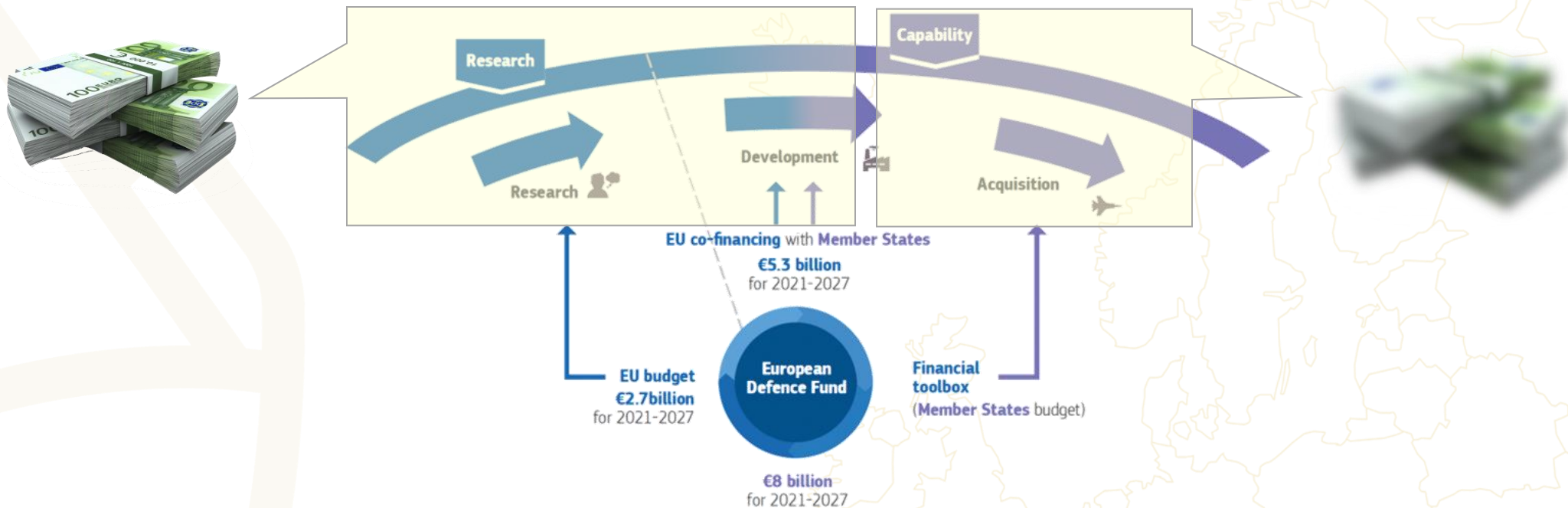
EVROPSKI OBRAMBNI SKLAD - SLOVENSKI INFORMATIVNI DAN 2024
23 MAJ 2024 | LJUBLJANA, SLOVENIA

HVALA ZA POZORNOST

ENOTNI NACIONALNI IN MEDNARODNI KONTAKT

W: www.SiEnE.si ... E: SiEnE@tec.es

SiEnE - UNCLASSIFIED



- **Spodbujanje razvojno-tehnološkega povezovanja** članic EU, podjetij in RO za krepitev obrambnih zmogljivosti EU;
- Podpora **krejitvi evropske obrambne tehnološke in industrijske baze (EDTIB - European Defence Technological and Industrial Base)** - v zadnjih letih ključno središče političnih prizadevanj EU, ne le iz varnostnih razlogov, ampak tudi iz gospodarskih razlogov.
 - krajšanje dobavnih verig | krepitev ključnih deležnikov v verigah vrednosti iz EU | spodbujanje razvoja civilnih rešitev za uporabo tudi za obrambne namene (dvojna raba) | trend zmanjševanja odvisnosti od ostalih ne EU gospodarstev ...
 - **STOP** Kitajska, Rusija, Azija, Južna in Severna Amerika itd. → vsaj praviloma!
- **Letni razpisi EDF: 2021: 1,1 milijarde € | 2022 : 1 milijarde € | 2023: 1,2 milijarde € | 2024: 1,1 milijarde €**
- Aktivnosti: **Raziskave (Research) → Razvoj (Development) | ... → ... | Nabava (Procurement)**

Kategorije	Raziskovalni razpisi (RA)	Razvojni razpisi (DA)
1. Obrambno-medicinski odziv, kemično, biološko, radiološko in jedrsko (CBRN), biotehnologija in človeški dejavniki (MCBRN) 25 M€	EDF-2024-RA-SGA-MCBRN-MCM-STEP	EDF-2024-DA-SGA-MCBRN-MCM-STEP
2. Informacijska superiornost 181 M€	EDF-2024-RA-C4ISR-AIMA-STEP EDF-2024-RA-C4ISR-COMS-STEP EDF-2024-RA-C4ISR-SEEU-STEP EDF-2024-RA-C4ISR-MALE	EDF-2024-DA-C4ISR-AIMA-STEP EDF-2024-DA-C4ISR-COMS-STEP EDF-2024-DA-C4ISR-SEEU-STEP EDF-2024-DA-C4ISR-MALE
3. Napredni pasivni in aktivni senzorji 62 M€	EDF-2024-LS-RA-CHALLENGE-SENS-RADNP EDF-2024-LS-RA-CHALLENGE-SENS-RADNO	
4. Cyber 48 M€	EDF-2024-LS-RA-CHALLENGE-SPACE-MSIAF	EDF-2024-DA-CYBER-MSIAF-STEP
5. Vesolje 50 M€	EDF-2024-LS-RA-CHALLENGE-SPACE-MSIAO	EDF-2024-DA-SPACE-EPW-STEP
6. Digitalna transformacija 15 M€	EDF-2024-RA-DIGIT-ASMEP	
7. Energetska odpornost in okoljski izzivi 40 M€	EDF-2024-RA-SI-MATCOMP-EC-STEP	EDF-2024-DA-ENERGY-RESIL-STEP
8. Materiali in komponente 25 M€	EDF-2024-RA-AIR-AAM EDF-2024-RA-AIR-UCCAS-STEP	EDF-2024-DA-AIR-NGRT
9. Zračni boj 150 M€		EDF-2024-DA-EUCI-AIRDEF-CHGV EDF-2024-DA-GROUND-UGS-STEP EDF-2024-DA-GROUND-BLOS EDF-2024-DA-GROUND-AIFV
10. Zračna in protiraketna obramba 78 M€	EDF-2024-RA-GROUND-IWAS	
11. Kopenski boj 130 M€	EDF-2024-RA-PROTMOB-FMTC	
12. Zaščita sil in mobilnost 30 M€		EDF-2024-DA-NAVAL-FNP
13. Pomorsko bojevanje 45 M€	EDF-2024-RA-UWW-SACOM-STEP	EDF-2024-DA-UWW-AHMS
14. Podvodno bojevanje 54 M€	EDF-2024-RA-SIMTRAIN-BRG-STEP	EDF-2024-DA-SIMTRAIN-STME-STEP
15. Simulacije in usposabljanje 25 M€	EDF-2024-LS-RA-DIS-QUANT-STEP EDF-2024-LS-RA-DIS-NT	
16. Prelomne tehnologije 40 M€	EDF-2024-LS-RA-SM-IPD-NT	EDF-2024-LS-DI-SME-NT
Izven-tematski razpis za inovativne čitke, priložnost za obrambni sektor, fokus na MSP		

“STRATEŠKI PROGRAMI & PROJEKTI”

Projekti velikih interesov deležnikov EU

Ključna podpora ministrstev (predvsem v razvojnih)

SME + MID-CAP!!! (do 3.000 zaposlenih) - praviloma bonus

“PROJEKTI PRILOŽNOSTI” – predvsem za SME & RO

- Nizki TRL
- Visok % (so)financiranja EDF
- Zaželena, vendar ne nujna podpora ministrstev

- višji TRL
- nižji % (so)financiranja EDF
- Zelo zaželena podpora ministrstev (morebitno financiranje itd.)

- EDF: **2021**: 1,1 milijarde € | **2022** : 1 milijarde € | **2023**: 1,2 milijarde € | **2024**: 1,1 milijarde €
- Slovenska udeležba → zelo nišna in praviloma posamična → iskanje svojega prostora

EDF 2021	EDF 2022	EDF 2023	EDF 2024
<ul style="list-style-type: none"> ▪ GUARDIARIS ▪ BEYOND SEMICONDUCTOR, UL ▪ UL ▪ GUARDIARIS ▪ <i>PIPISTREL</i> ▪ <i>TECOS (energy resilience)</i> ▪ <i>DEWESOFT</i> 	<ul style="list-style-type: none"> ▪ GUARDIARIS ▪ IJS 	<ul style="list-style-type: none"> ▪ GUARDIARIS (2x) ▪ MIL SISTEMIKA (2x) ▪ ARCTUR (2x) ▪ SKYLABS ▪ INSTRUMENTATION TECHNOLOGIES 	?
<ul style="list-style-type: none"> ▪ Projekt: INDY 14 M€ (energy resilience) <ul style="list-style-type: none"> ▪ TECES <ul style="list-style-type: none"> ▪ <i>DOMEL</i> ▪ <i>ZAG</i> ▪ <i>ULJ (FS + FE)</i> ▪ <i>UMB (FERI)</i> ▪ <i>KOLEKTOR</i> 	TECES brez kondicije, da bi se lotil podobnega podviga kot v 2021, prav tako tudi neprimerne vsebine	<ul style="list-style-type: none"> ▪ Projekt: CALIPSO 24,9 M€ (energy resilience) <ul style="list-style-type: none"> ▪ <i>TECES</i> <ul style="list-style-type: none"> ▪ <i>UL (FS)</i> 	TECES s precej več kondicije in interesa skladno strategiji SiEnE in MORS
<ul style="list-style-type: none"> ▪ Projekt: NOMAD 20,7 M€ (energy resilience) <ul style="list-style-type: none"> ▪ <i>TECES</i> <ul style="list-style-type: none"> ▪ <i>ROBOTINA</i> ▪ <i>ULJ (FS)</i> ▪ <i>UMB (FERI)</i> ▪ <i>SMARTIS (PIPISTREL)</i> ▪ <i>ROBOTINA</i> 		<ul style="list-style-type: none"> ▪ Projekt: HARCHI-MEEDA ~20 M€ (AI, chips) <ul style="list-style-type: none"> ▪ <i>TECES</i> ▪ <i>BEYOND SEMICONDUCTOR</i> ▪ <i>INSTRUMENTATION TECHNOLOGIES</i> 	



SiEnE

Julija 2020 ustanovljeno partnerstvo SiEnE predstavlja **strateški in celovit pristop** naslavljanja **zelenega prehoda, energetskih in okoljskih izzivov na obrambnem področju** pod okriljem TECES in Ministrstva za obrambo Republike Slovenije.

- **celovit pristop** h krepitvi sodelovanja civilnih in obrambnih deležnikov;
- raziskovalno-razvojno in tehnološko **sodelovanje**;
- **vklučevanje v mednarodne** obrambne programe, projekte in dobavne verige;
- podpora **razvoju rešitev za civilni in obrambni** namen (dvojna raba).



UNIVERSITIES

(research
technological
organisation,
faculties etc.)

USERS

(Armed Forces, Civil
Protection and
Disaster Relief)

COMPANIES

(industry, MID-CAPs,
SMEs, start-ups etc.)

GOVERNMENT

(ministries, agencies,
Ministry of Defence...)



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Partnership in Defence



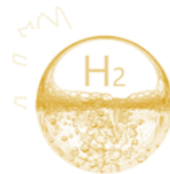
REPUBLIC OF SLOVENIA
MINISTRY OF DEFENCE



Obnovljivi viri
energije



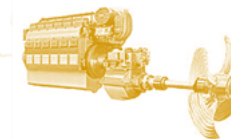
Shranjevanje energije



Vodikove
tehnologije



Alternativna goriva



Motorji / pogonski
sistemi



Izkoriščanje
energije odpadkov



Pitna voda in
odpadna voda



Energija in okolje
(tehnologije sistemske integracije)



Prestrežanje / zbiranje
in pretvarjanje energije



Večgorivni sistemi in
distribucija moči



Ogrevanje, hlajenje in
prezračevanje (HVAC)



Mikroomrežja
(odpornost)



Upravljanje z energijo



Varnost in
zaščita



Digitalizacija, IKT
(IoT, AI, BIM, senzorji, aktuatorji,
povezljivost)



Gradbeni sistemi



Modularne
gradbene enote



Ovoj stavbe

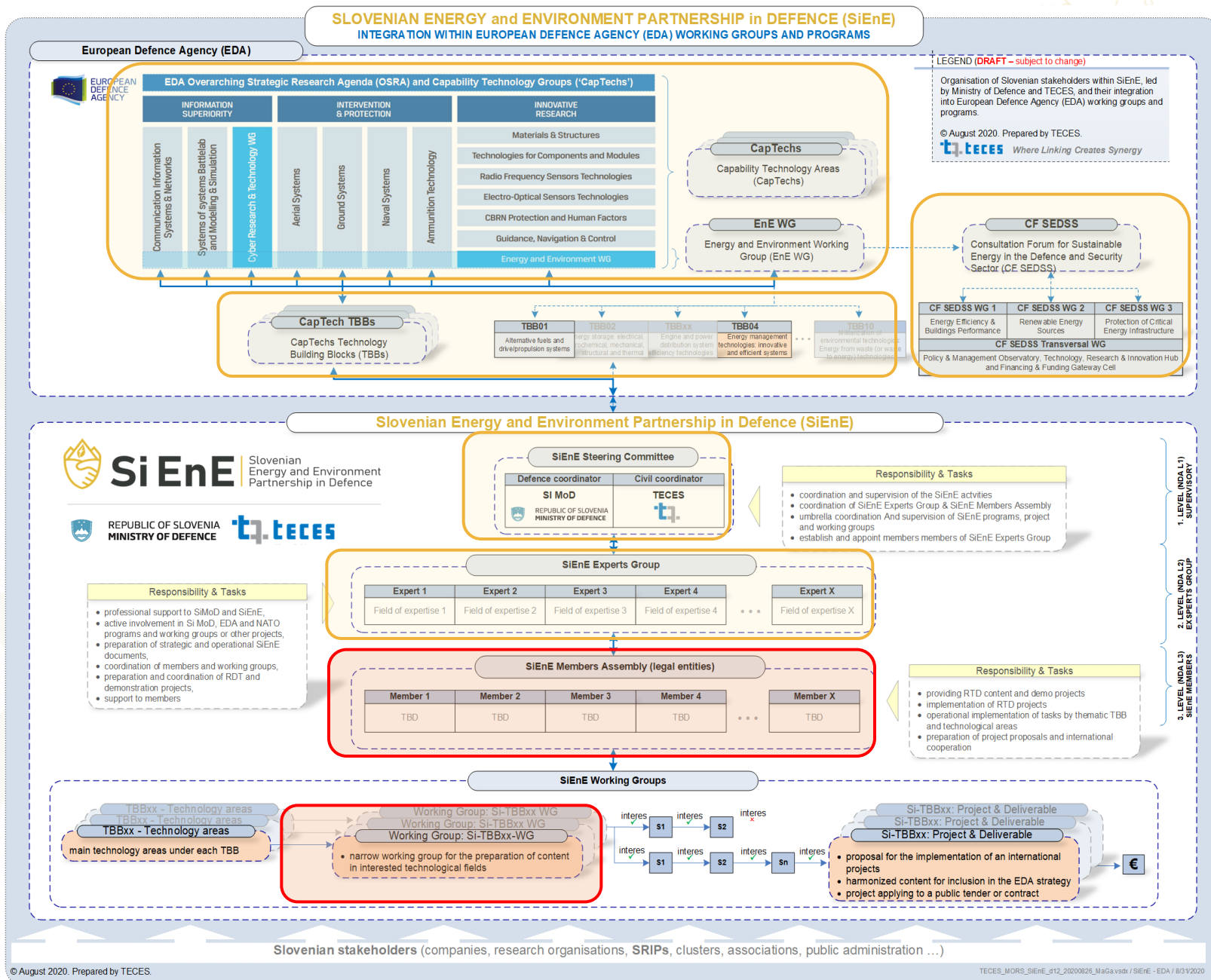


Energijsko učinkovito
stavbno pohištvo



Notranjost
(ambient)





A European Green Deal

Striving to be the first climate-neutral continent

EDA Energy and
Environment
Capability
Technology Group

EnE CapTech

CAPTECH ENERGY AND
ENVIRONMENT



Energy Defence
Consultation

Sodelovanje v raznovrstnih mednarodnih delovnih skupinah, programih in projektih ponavadi pripelje do novih oblik sodelovanja in projektov, ki se končajo tudi s sodelovanjem v okviru EDF razpisov.

Funded: H2020

CF SEDSS - PHASE III
Consultation Forum for Sustainable Energy
in the Defence and Security Sector

Boosting the
defence energy
transition



Offshore
Renewable

SYMBIOSIS:
OFFSHORE
RENEWABLE
ENERGY FOR
DEFENCE

A European Commission and European
Defence Agency action to promote coexistence
of offshore renewable energy projects and
defence operations and systems.



Funded: Horizon Europe

Incubation Forum
for Circular
Economy in
European Defence

IF CEED

Funded: LIFE- LU

IF (we) 'CEED'
now, we will
harvest
tomorrow!



eda.europa.eu/ceed

100

**JUBILEJNI REDNI TEDENSKI SESTANEK
USTANOVITELJEV PARTNERSTVA
(MORS IN TECES)**

21. MAJ 2024



EUROPEAN DEFENCE FUND



INDY

Energy Independent and Efficient Deployable Military Camps

SELECTED PROJECTS EUROPEAN DEFENCE FUND (EDF) 2021

CALL TITLE:	Energy efficiency and energy management
TOPIC TITLE:	Energy independent and efficient systems for military camps
DURATION OF THE PROJECT:	24 months
TYPE(S) OF ACTIVITIES:	Studies
ESTIMATED TOTAL COST:	€ 14,229,475.59
MAXIMUM EU CONTRIBUTION :	€ 14,229,475.59



SHORT DESCRIPTION OF THE PROJECT:

INDY will develop a strategic roadmap towards future energy independent and efficient deployable military camps.

The project "Energy Independent and Efficient Deployable Military Camps" (INDY) aims to develop a strategic roadmap towards the future energy independent and efficient deployable military camps, based on a paradigm shift for energy production, conversion, storage, transport, distribution and final usage. The project is building on military and civilian EU and national projects.

Related PESCO project: Energy Operational Function (EOF)

EUROPEAN DEFENCE FUND



NOMAD

NOvel energy storage technologies usable at MilitArY Deployments in forward operating bases

SELECTED PROJECTS EUROPEAN DEFENCE FUND (EDF) 2021

CALL TITLE:	Energy efficiency and energy management
TOPIC TITLE:	Next generation electrical energy storage for military forward operation bases
DURATION OF THE PROJECT:	48 months
TYPE(S) OF ACTIVITIES:	Integrating knowledge; Studies; Design; Increasing efficiency
ESTIMATED TOTAL COST:	€ 20,718,040.72
MAXIMUM EU CONTRIBUTION :	€ 19,687,421.02



SHORT DESCRIPTION OF THE PROJECT:

NOMAD will develop next generation electrical energy storage for military forward operating bases.

The project "NOvel energy storage technologies usable at MilitArY Deployments in forward operating bases" (NOMAD) will build a collaborative framework among European industries, R&D organisations and relevant stakeholders in order to promote, support the development and operational validation of European energy storage and associated technologies, from feasibility studies to validation in relevant environments.

Related to PESCO project: Energy Operational Function (EOF)

INDY, Energy Independent and Efficient Deployable Military Camps

Leading the way: The first EU project tackling green energy in the military sector targeting deployable military camps.

INDY develops a strategic roadmap towards the future energy-independent and efficient deployable military camps.

Funding Body: European Defence Fund

Call Topic ID: EDF-2021-ENERENV-D-EEMC

Related PESCO project: Energy Operational Function (EOF)

Project No: 101103388

Project duration: 1.12.2022 – 31.01.2025 (26 months)

Project value: 14.229.475 €

Consortium: 31 partners (20 beneficiaries + 2 affiliated entities + 9 known subcontractors) or (6 SMEs, 3 Mid-Caps, 8 large companies, 2 RTOs & 2 UNIs, 1 innovation cluster)

Coordinator: TECES, Slovenia

Countries involved: 13 EU and associated countries.






CALIPSO

Innovative propulsion solutions for land and naval defence applications

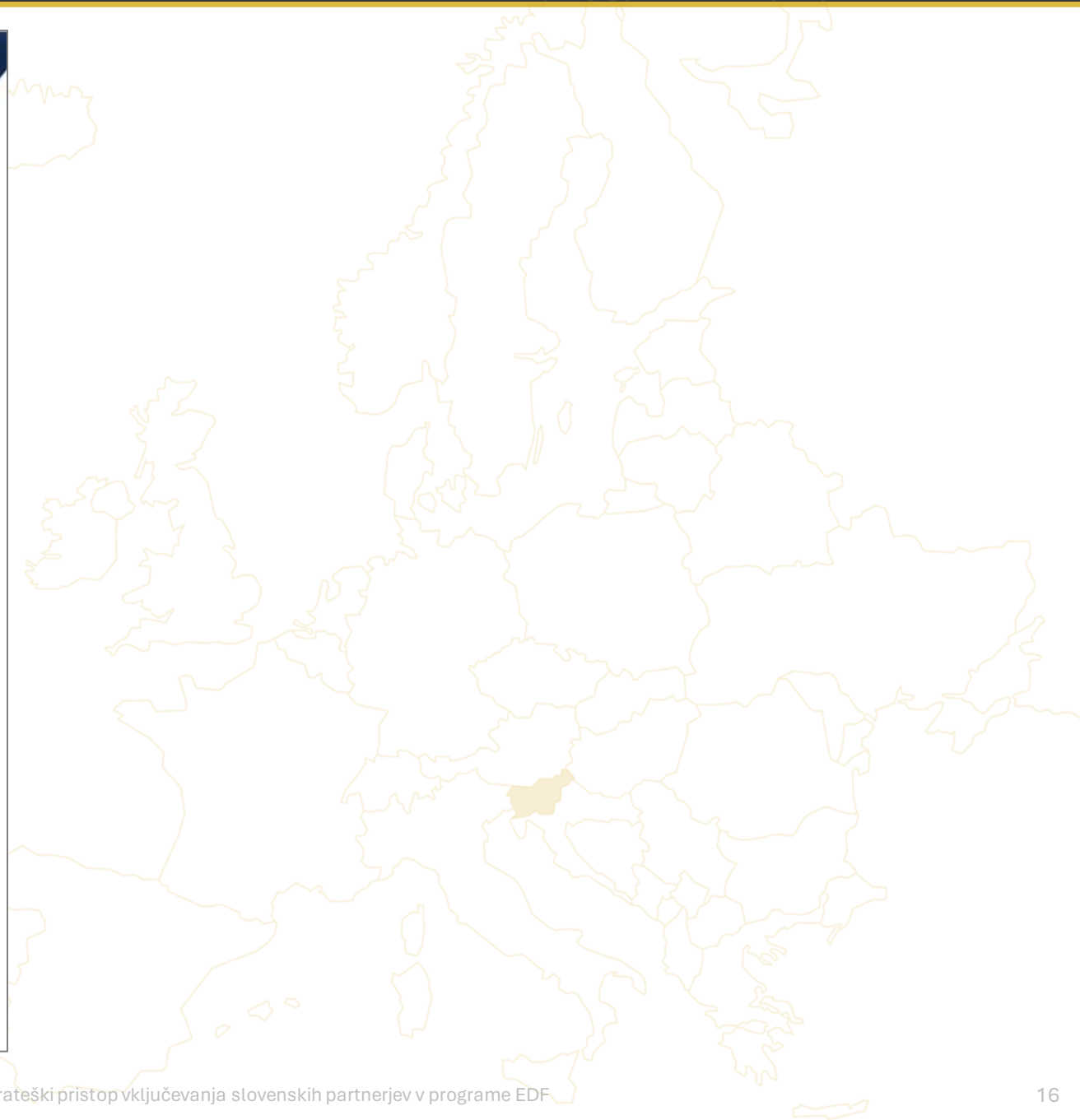
SELECTED PROJECTS EUROPEAN DEFENCE FUND (EDF) 2023

CALL TITLE:	Research actions on energy resilience and environment transition
TOPIC TITLE:	Innovative propulsion systems (spin-in)
DURATION OF THE PROJECT:	36 months
TYPE(S) OF ACTIVITIES:	Integrating knowledge, Studies, Design
ESTIMATED TOTAL COST:	€ 24,950,169.27
MAXIMUM EU CONTRIBUTION :	€ 24,950,169.27

SHORT DESCRIPTION OF THE PROJECT:

CALIPSO aims to provide guidelines and roadmaps for systematically addressing technological and other challenges in terms of innovative emission-reducing propulsion solutions.

The project aims to enable the defence sector to systematically achieve the EU sustainability goals by introducing innovative emission-reducing propulsion solutions to a significant part of its activities. The project paves the way towards efficient adoption of sustainable fuel based innovative propulsion systems in the land and naval domains of the defence sector. The project provides guidelines and roadmaps for systematically addressing technical and other challenges such as standardisation, safety, supply chain and logistic.

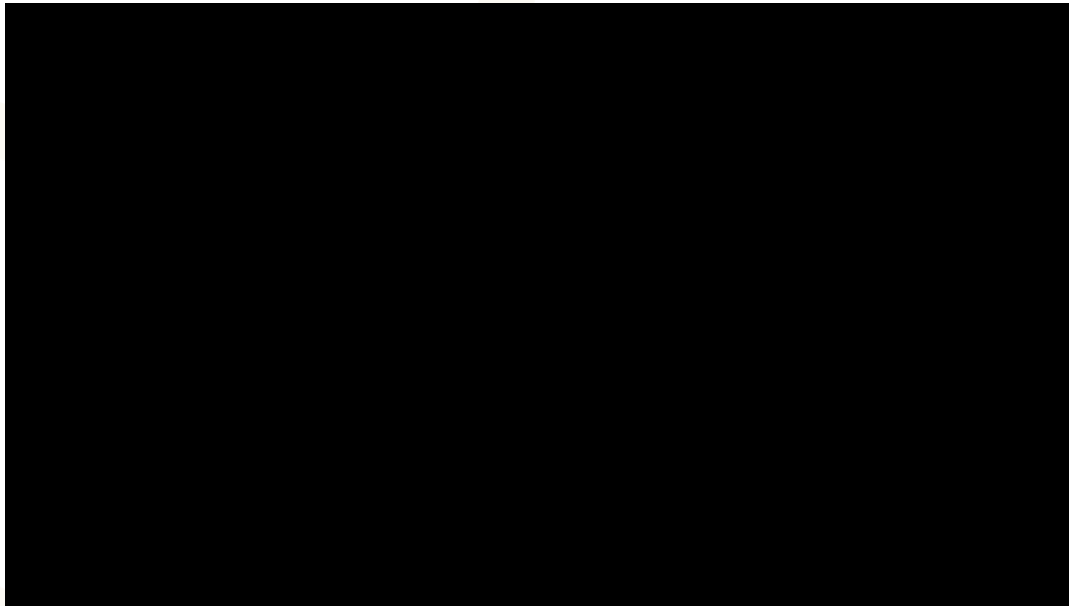


- Aktivna vključitev Slovenije (MORS, civilni partnerji) v ključne strateške projekte EU na področju podpore zelenemu in digitalnemu prehodu, krepitve energetske odpornosti, reševanja energetskih in okoljskih izzivov na obrambnem področju.

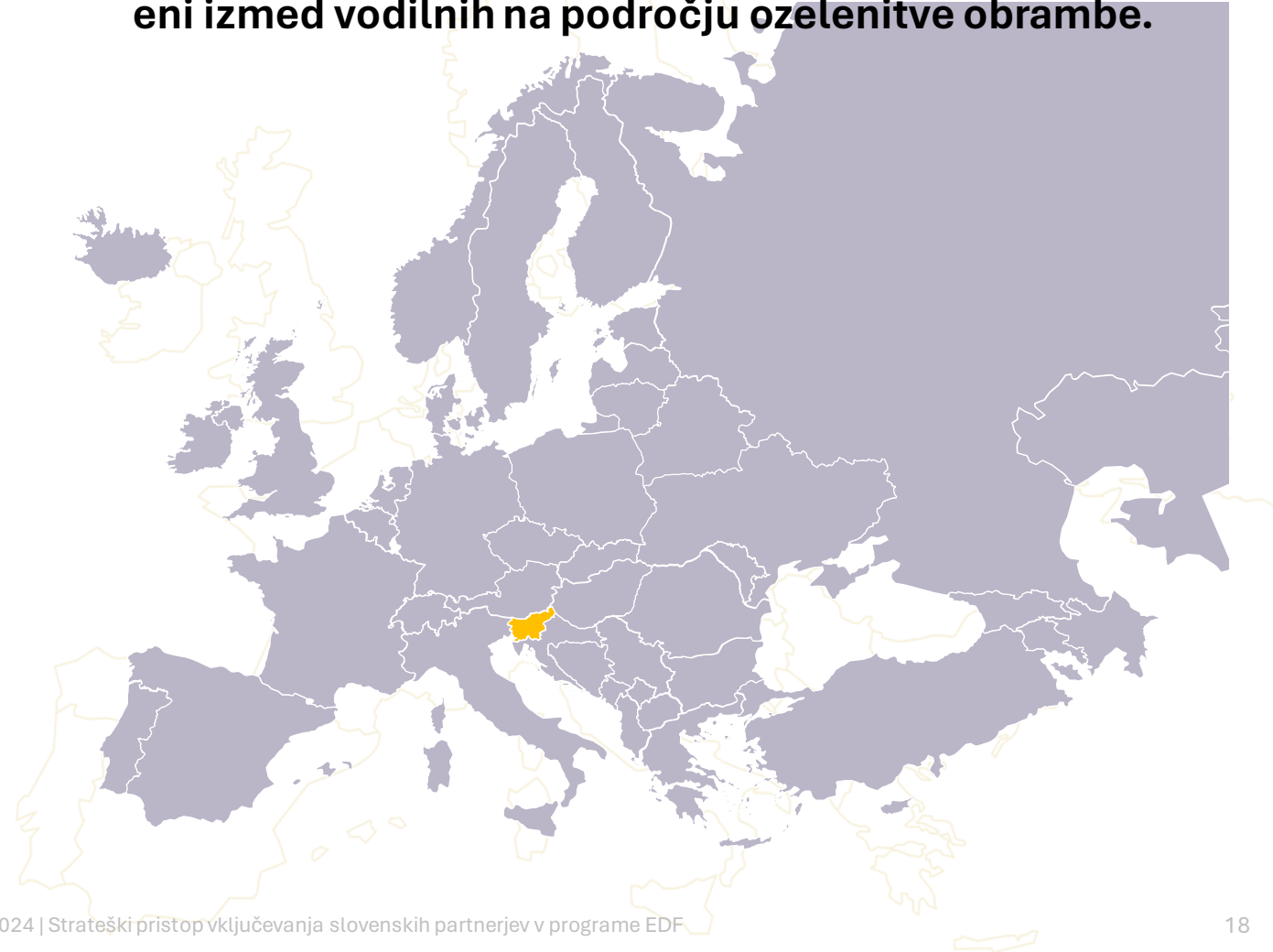
EDF 2021	EDF 2023	EDF 2024
<p>Projekt: INDY, Energy Independent and Efficient Deployable Military Camps (14 M€) (energy resilience)</p> <ul style="list-style-type: none"> ▪ TECES in SLO partnerji 	<p>Projekt: NOMAD, NOvel energy storage technologies usable at MilitArY Deployments in forward operating bases (20,7 M€) (energy resilience)</p> <ul style="list-style-type: none"> ▪ TECES in SLO partnerji 	<p>Projekt: EEMC, Energy Efficient Military Cams (40 M€ EDF, ~60 – 70 M€ projekt) (energy resilience)</p> <ul style="list-style-type: none"> ▪ TECES in SLO partnerji
<p>Strategic roadmap towards 2030-2050: future energy independent and efficient deployable military camps</p>	<p>Assessment of the current energy storage systems that are developed for civil use and that might be used at a military level. Guideline recommendation for novel, safe and usable energy storage technologies for military deployments in forward operation bases;</p>	<p>The project paves the way towards efficient adoption of sustainable fuel based innovative propulsion systems in the land and naval domains of the defence sector. The project provides guidelines and roadmaps for systematically addressing technical and other challenges such as standardisation, safety, supply chain and logistic.</p>
<p><u>Vsebine</u></p> <ul style="list-style-type: none"> ▪ Premestljive baze za različne scenarije uporabe (arktično, tropsko, saharsko, kontinentalno) ▪ Več kot 70 identificiranih (emerging) tehnologij prihodnosti, ki bodo vplivale energetske učinkovite rešitve v letih 2030 – 2050. 	<p><u>Vsebine</u></p> <ul style="list-style-type: none"> ▪ Predlogi obstoječih in prilagojenih rešitev ter novih tehnologij za shranjevanje energije ter njihovo primernost za uporabo v stacionarnih aplikacijah na naprednih operativnih bazah (FOBs). 	<p><u>Vsebine</u></p> <ul style="list-style-type: none"> ▪ Innovative propulsion solutions for land and naval defence applications
		<p><u>Vsebine</u></p> <ul style="list-style-type: none"> ▪ Tehnološka in digitalna integracija raznovrstnih ponudnikov tehnologij in energetskih rešitev za energetske učinkovite baze prihodnosti.

EDF 2024 ???

See video at: <https://go.teces.si/INDY-3D-CAMP>



- Danes ni vprašanje ali bomo nadaljevali ali ne. Vprašanje je samo, s **katerimi prebojnimi rešitvami in skupaj razvitimi rešitvami partnerjev** se bomo uspeli vključiti v mednarodno okolje ter kako zagotoviti, da bomo slovenski partnerji in Slovenija **ostali prepoznavni kot eni izmed vodilnih na področju ozelenitve obrambe.**





SiEnE | Slovenian
Energy and Environment
Partnership in Defence



REPUBLIC OF SLOVENIA
MINISTRY OF DEFENCE



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23 MAJ 2024 | LJUBLJANA, SLOVENIA

HVALA ZA POZORNOST

ENOTNI NACIONALNI IN MEDNARODNI KONTAKT

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