



KEMIJSKI INŠTITUT



National Institute of Chemistry

Ljubljana, Slovenia



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KEMIJSKI INŠTITUT

With excellent research...

Biotechnology

Life sciences research

Analytical chemistry

Nanotechnology

Food chemistry

Energetics

Theoretical and structural chemistry

Chemical engineering

Materials research



erc

areas of research



...we create new knowledge and help solving societal challenges.

384 employees



53%

47%

position



32%

permanent



68%

temporary

86%



54%

46%

14%



46%

54%

25 countries

168 researchers



39%

0-7 yrs

57



61%

7-12 yrs

48

>12 yrs

63

130 PhD students



53%



47%



average age



36,7



36,8

<30 yrs

37%

30-40 yrs

34%

40-50 yrs

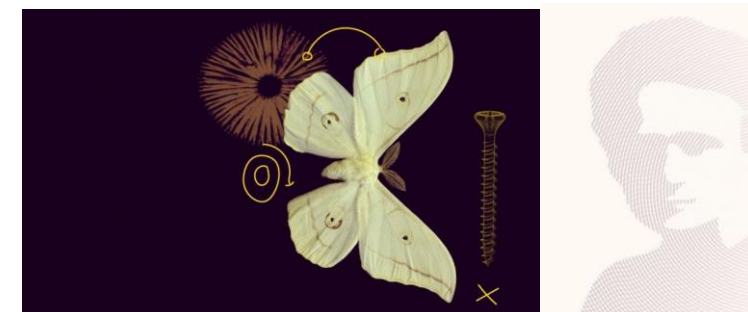
14%

50-60 yrs

12%

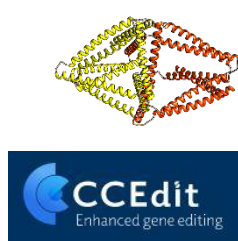
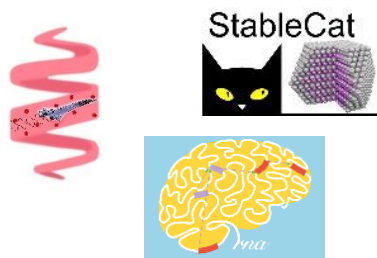
>60 yrs

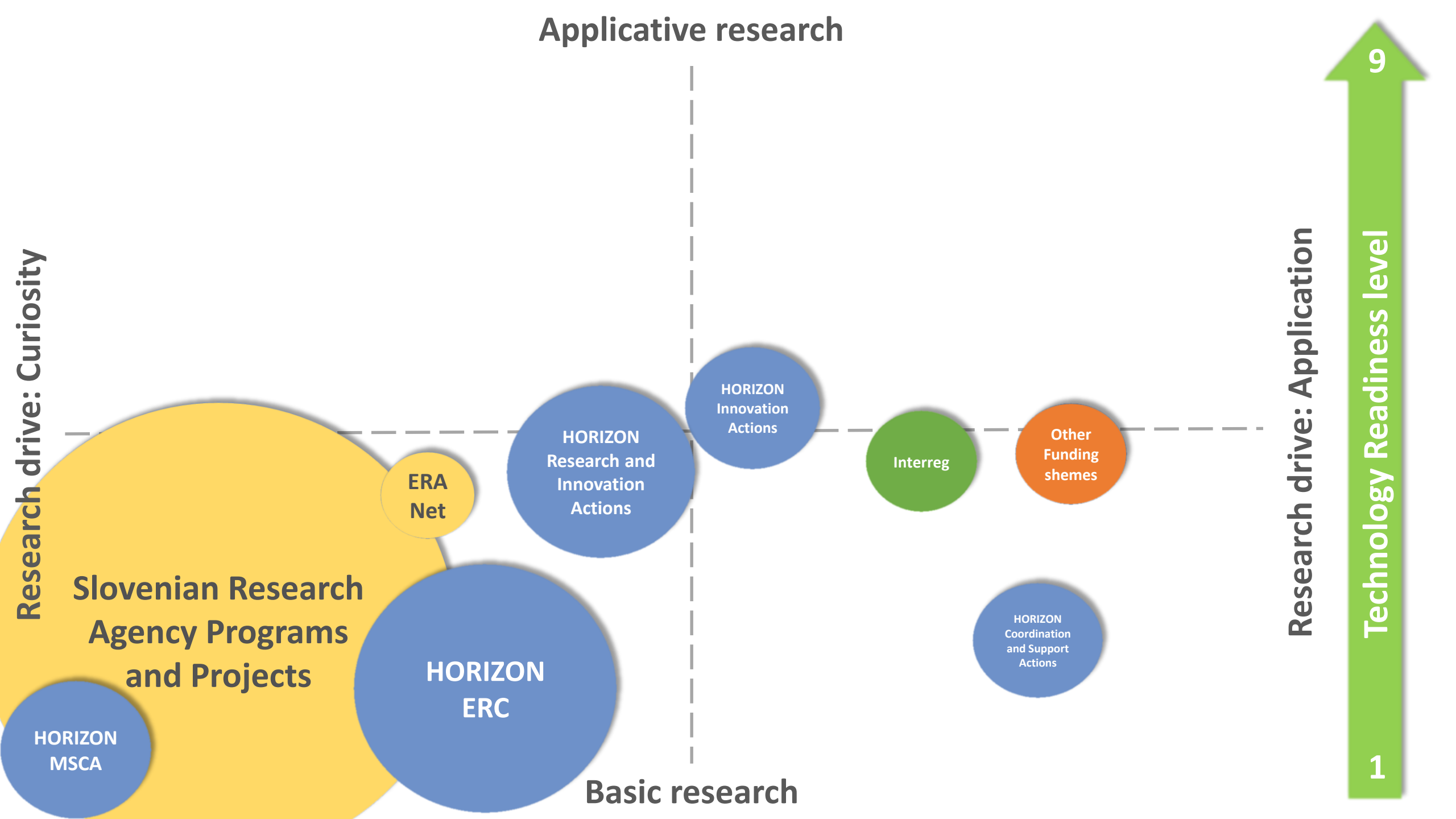
3%



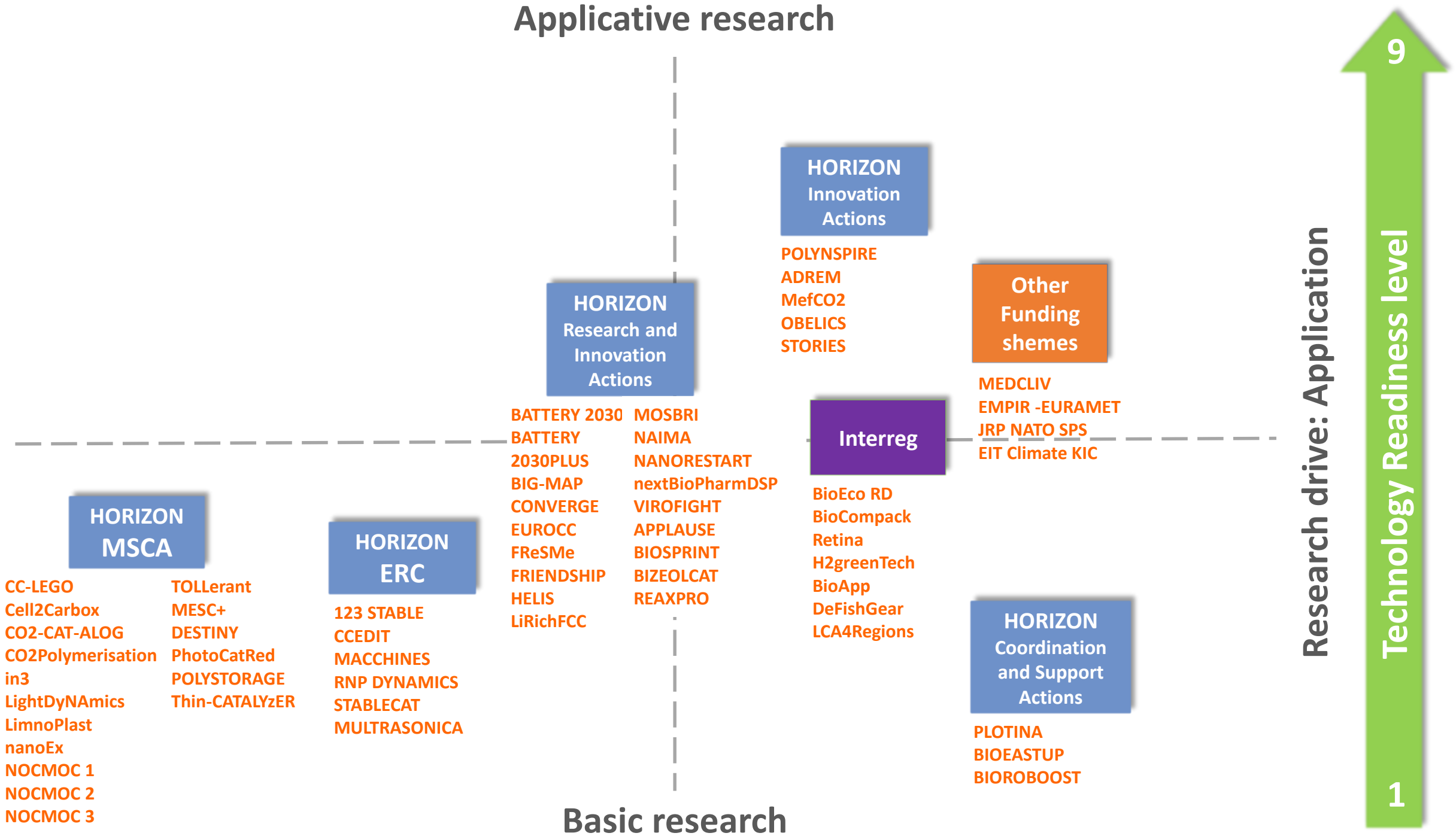
HORIZON-MSCA-COFUND-2021







Research drive: Curiosity



Applicative research

HORIZON Research and Innovation Actions

HORIZON Innovation Actions

POLYNSPIRE
ADREM
MefCO2
OBELICS
STORIES

Other Funding schemes

MEDCLIV
EMPIR -EURAMET
JRP NATO SPS
EIT Climate KIC

Interreg

BioEco RD
BioCompact
Retina
H2greenTech
BioApp
DeFishGear
LCA4Regions

HORIZON Coordination and Support Actions

PLOTINA
BIOEASTUP
BIOROBOOST

Research drive: Application



Basic research



FP7
(2008-2013)

2,89 Mio
11 projects



Horizon 2020
(2014-2020)

20,83 Mio
49 projects

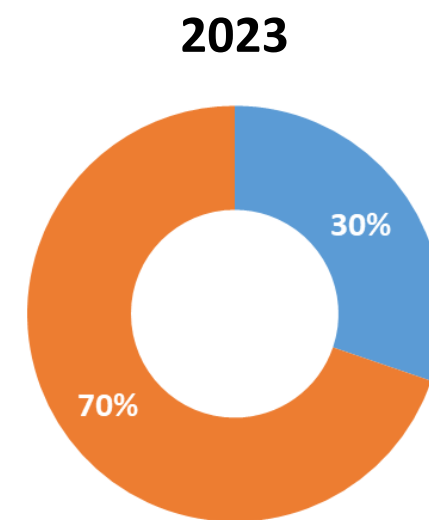
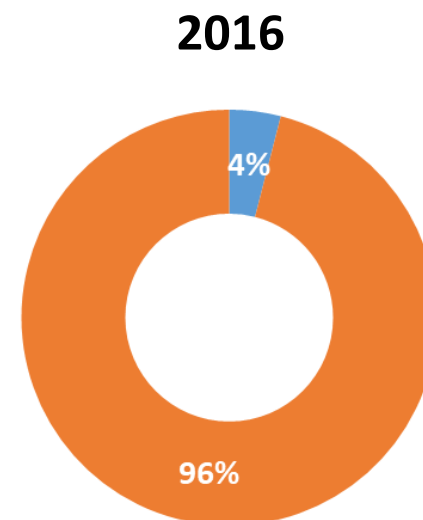
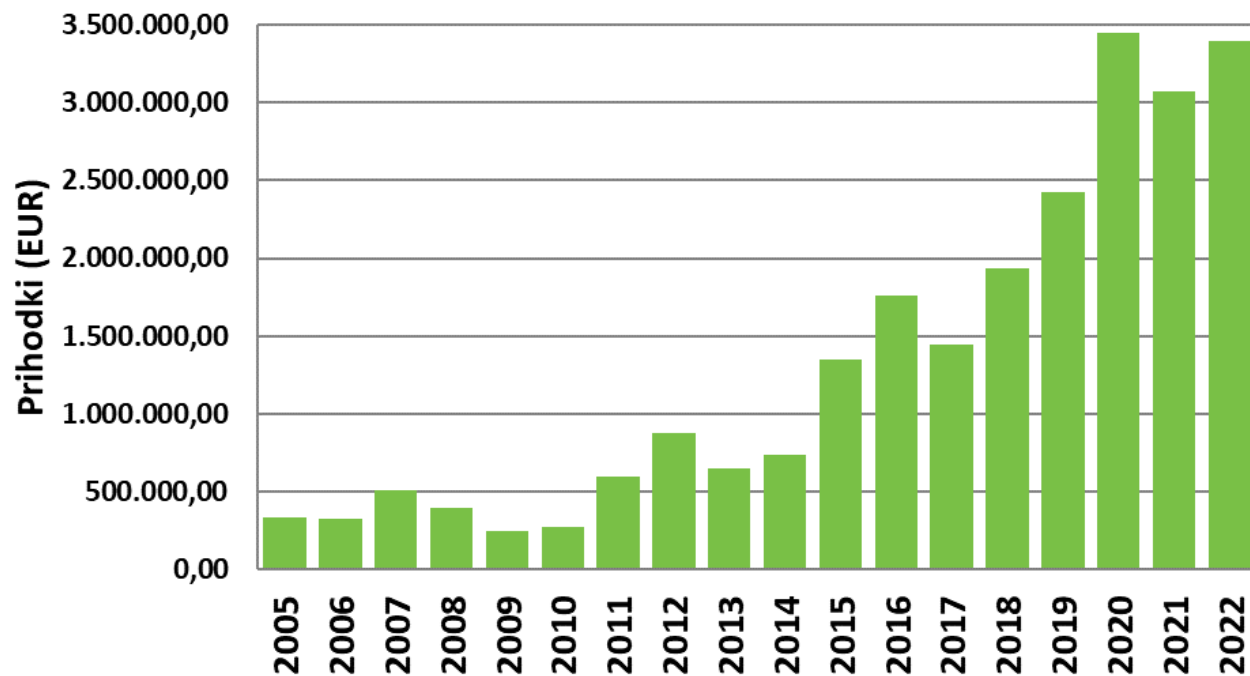


Horizon Europe
(2021-2027)

27 Mio
34 projects

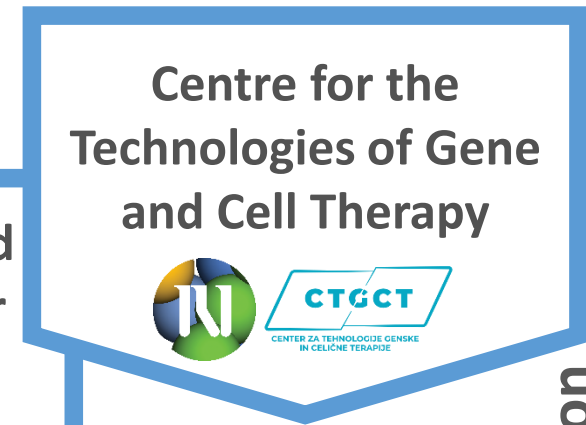
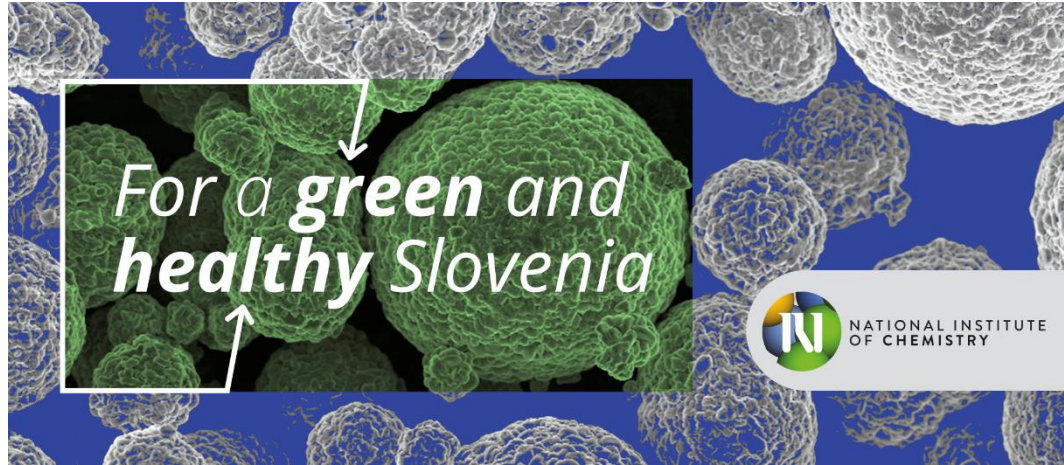
Revenues

Number of projects



■ Coordinator
■ Partner

Applicative research



Research drive: Application

Research drive: Curiosity

Slovenian Research Agency Programs and Projects

ERA Net

HORIZON Research and Innovation Actions

HORIZON Innovation Actions

Interreg

Other Funding schemes

HORIZON Coordination and Support Actions

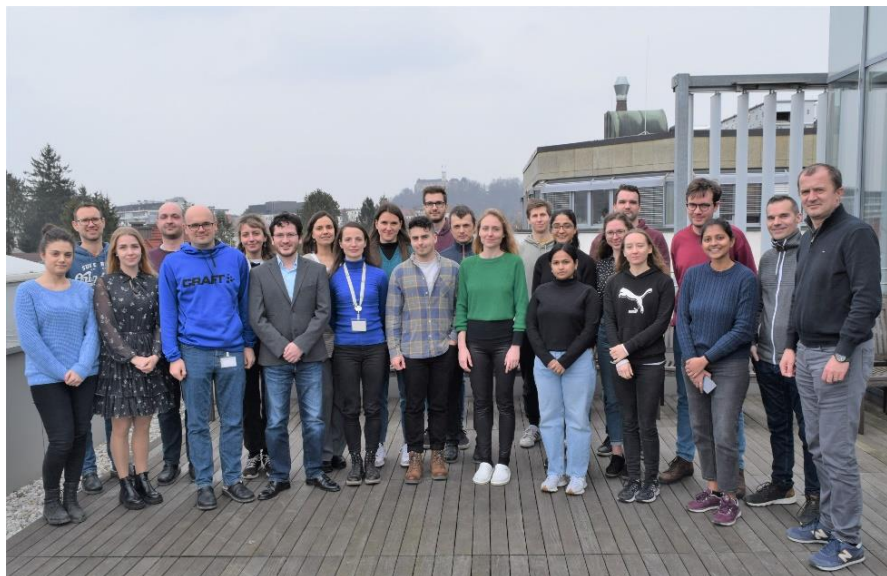
HORIZON ERC

HORIZON MSCA

Basic research



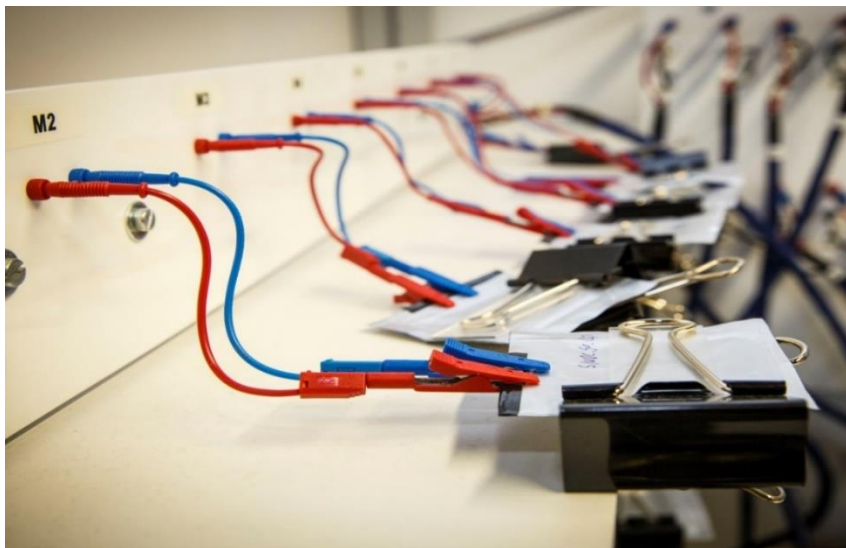
Strong battery research center in the southeast of Europe



Well equipped laboratory designed for battery research up to TRL3, TRL4

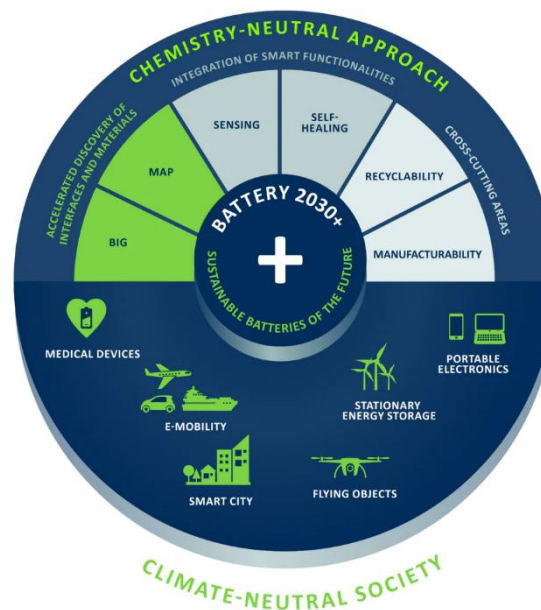
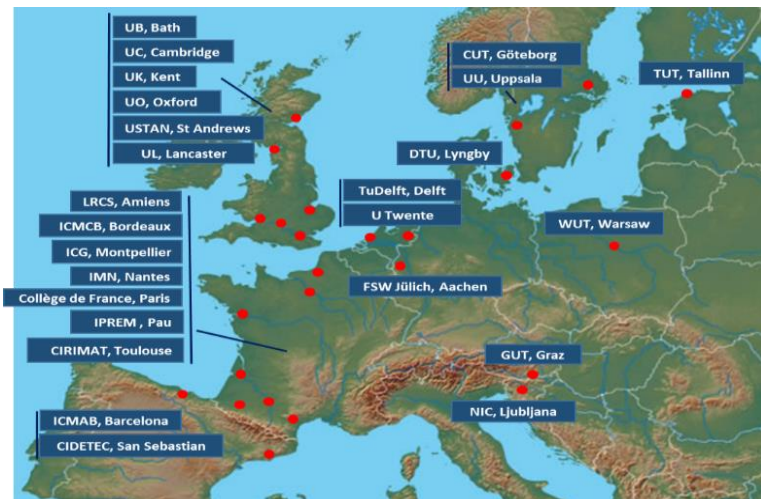


Who we are – battery lab



- Well established research group worldwide (25+ years of experiences in the battery research field)
- LEADING RESEARCH GROUP IN ALISTORE-ERI (32 laboratories and 5 companies from EU)
- LEADING RESEARCH GROUP ON EU LEVEL (EU projects and Battery 2030+)
- INDUSTRIAL COLLABORATION (Battery industry, OEM's, Slovenian companies, ...)





Erasmus Mundus Joint Master degree

(4 EU countries, 5 Universities)



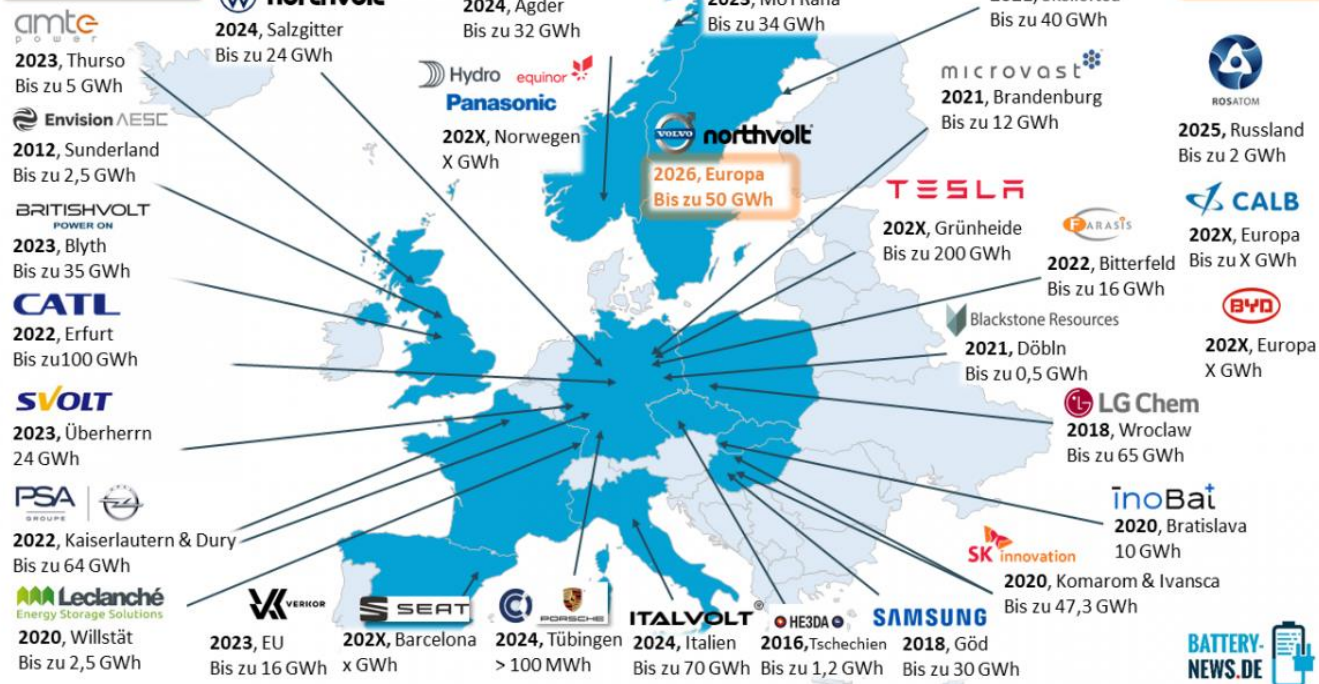
http://www.u-picardie.fr/mundus_MESC



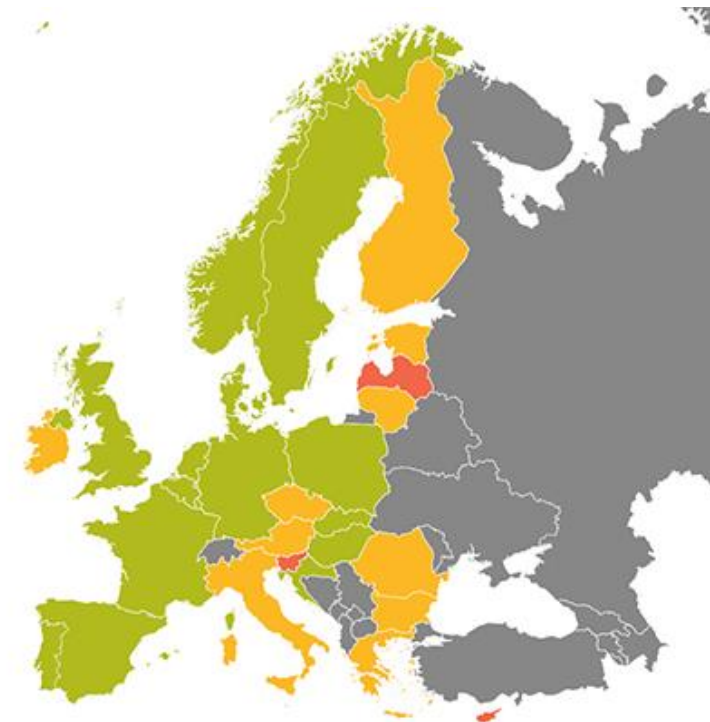
DUBT - Center za razvoj, demonstracije in usposabljanje za brezogljne tehnologije



Batterieprojekte:
Juni 2021

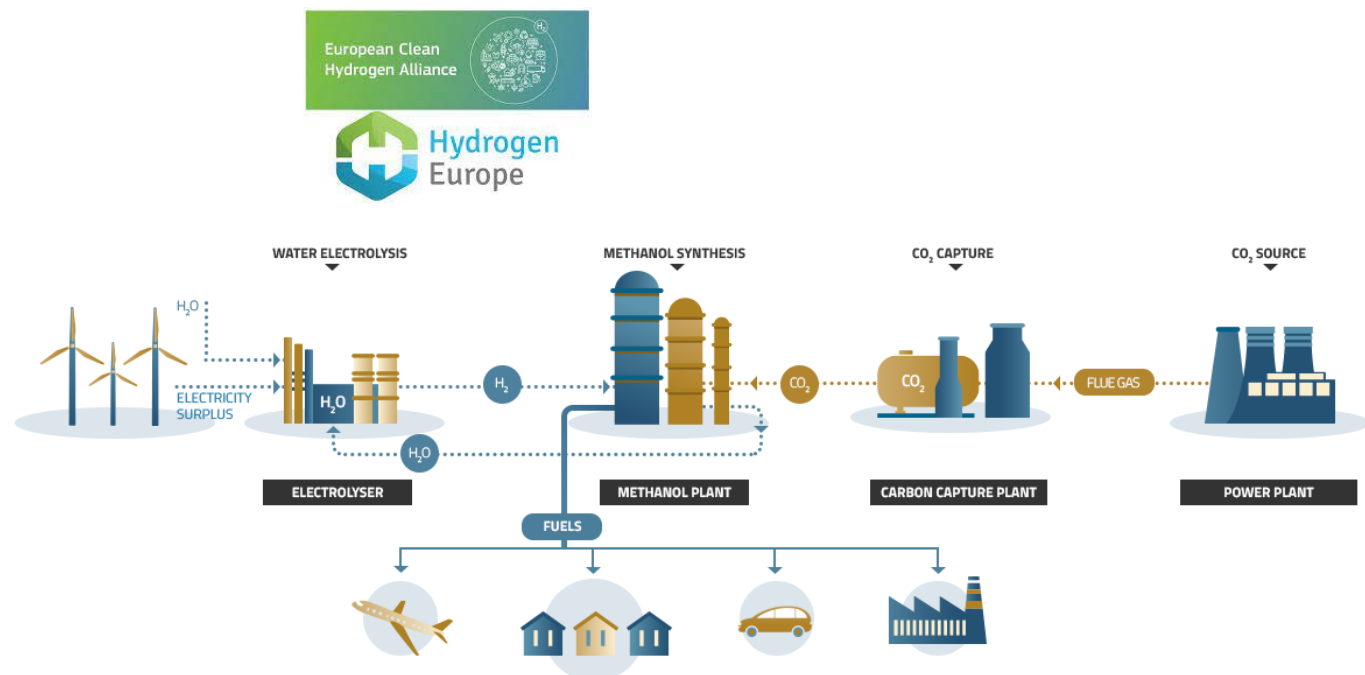
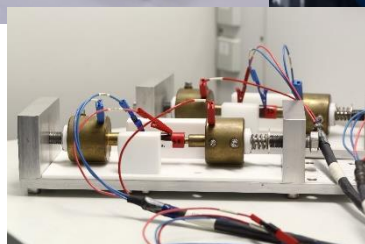


- The Frontrunners
- The Developers
- The Laggards



DUBT - Center za razvoj, demonstracije in usposabljanje za brezogljiche tehnologije

BEPA
Batteries European
Partnership Association



ETI 70
water and wind energy

HRASTNIK1860

DEWESoft
measurement innovation

elaphe
Propulsion Technologies

TOTAL

EVONIK
Leading Beyond Chemistry

HONDA

NESTE OIL

PODKRIŽNIK

gen-i

ELES

Iskra

hse
Holding Slovenske elektrarne d.o.o.

MHPS

TAB
batteries

CINKARNA

JM Johnson Matthey
Inspiring science, enhancing life



RESEARCH

APPLICABILITY

SCALABILITY

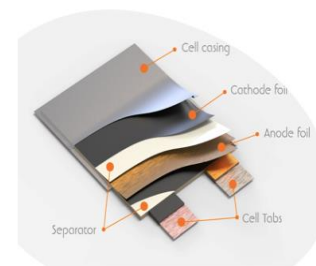
PRODUCT

SALES

CENTER FOR DEVELOPMENT, DEMONSTRATIONS AND TRAINING FOR CARBON-FREE TECHNOLOGIES

1. RESEARCH AND DEVELOPMENT EQUIPMENT (PILOT PLANTS)
2. TRAINING
3. INTEGRATION INTO INTERNATIONAL PROJECTS
4. CONNECTION WITH INDUSTRY
5. ESTABLISHMENT OF NEW INFRASTRUCTURE IN SLOVENIA

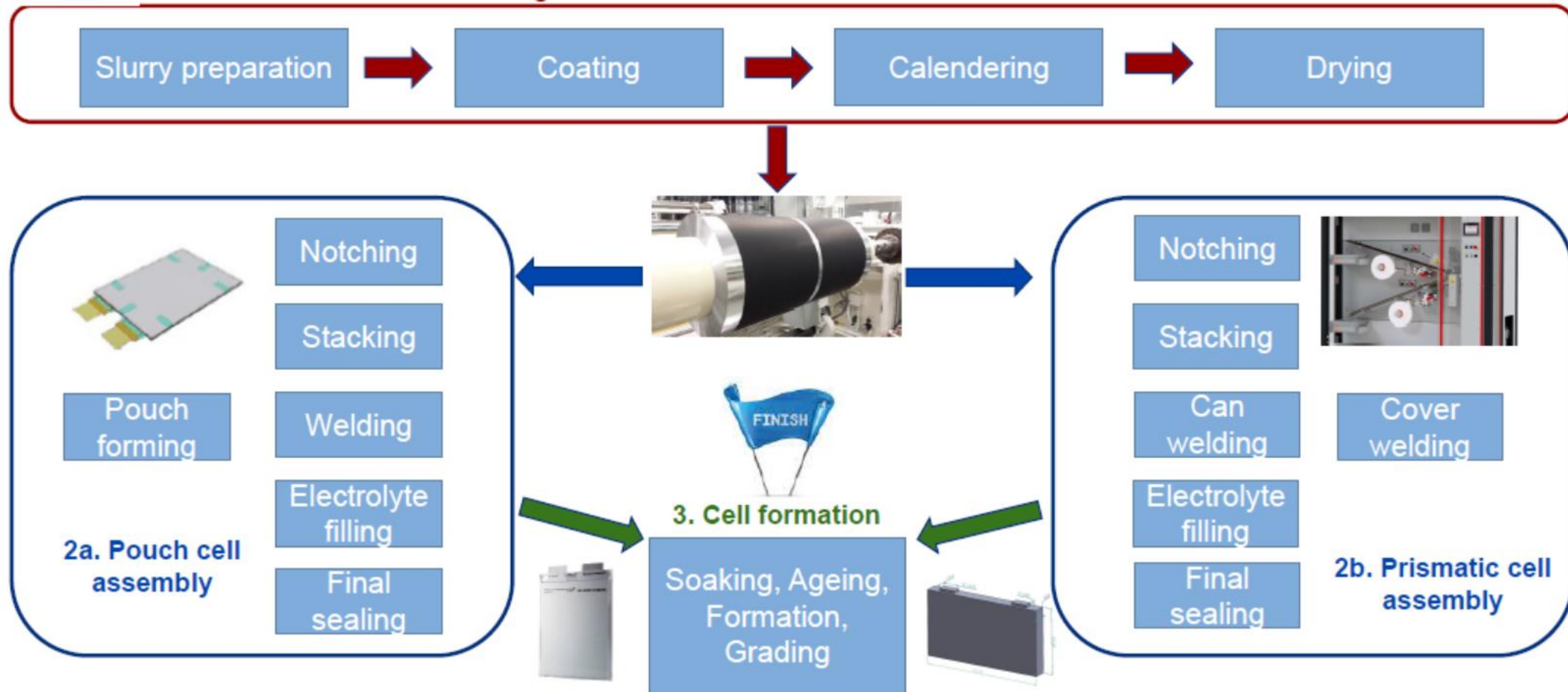
- Battery prototyping lines: - pouch cells with a size of 1-5Ah (TRL3-TRL5)
- prismatic cells with a size of 5-10 Ah (TRL4-TRL6)

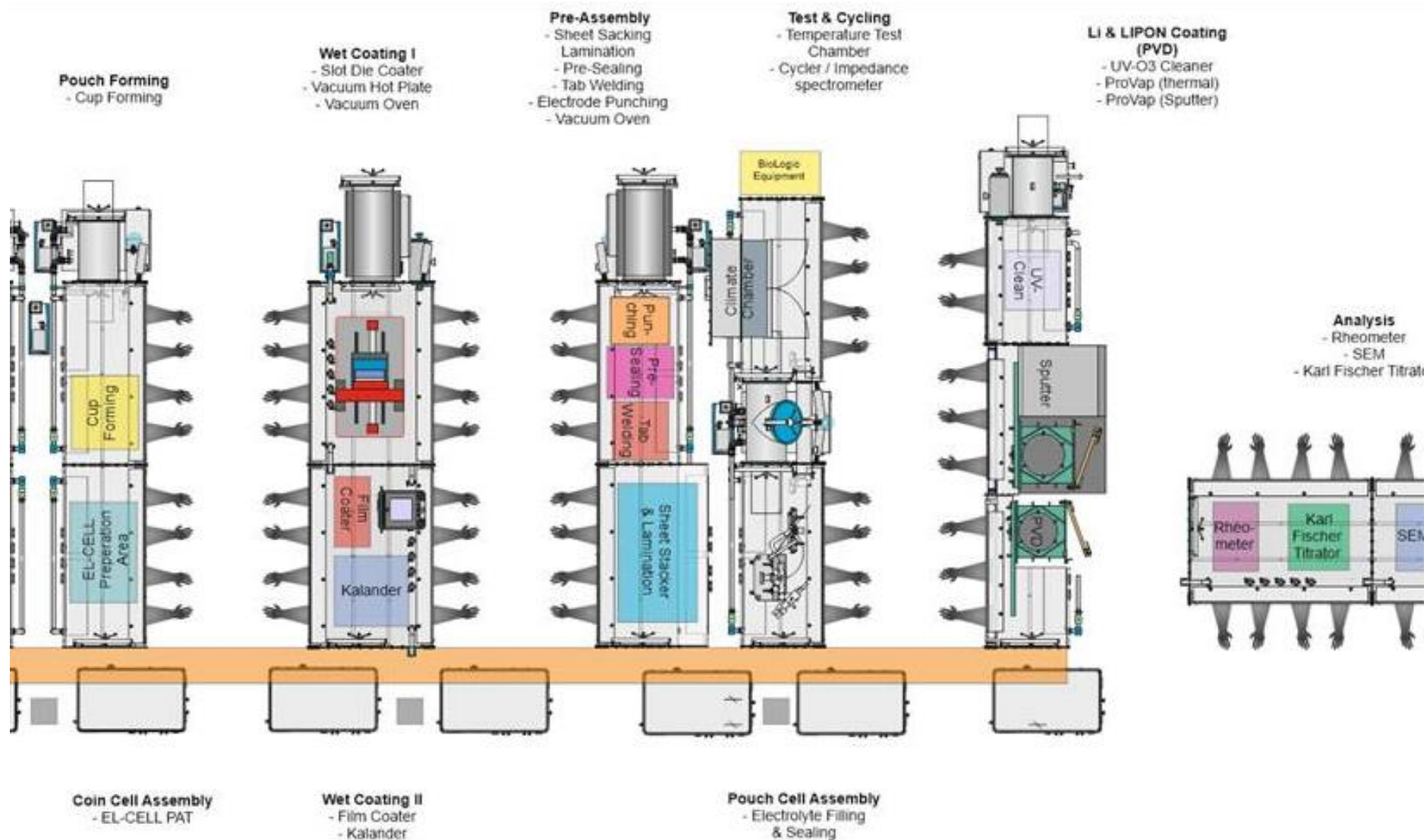


- Batteries testing facility (cells, modules and packs) – testing in climate chambers



5-7 Ah prismatic cells and 2-10 Ah pouch cells

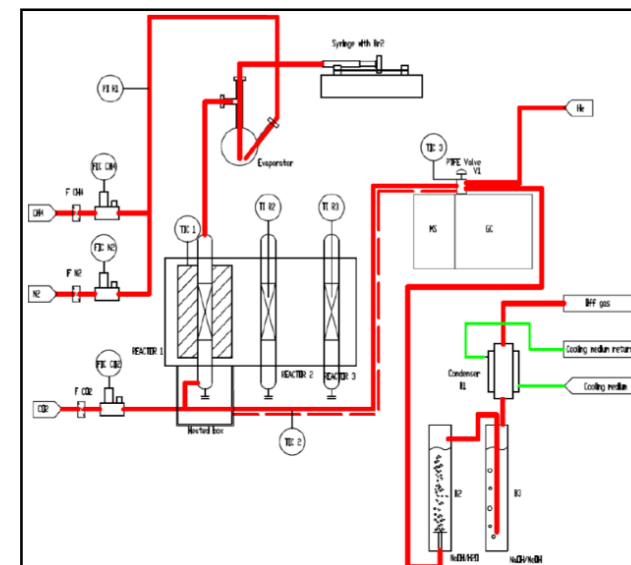






Cilji centra DUBT:

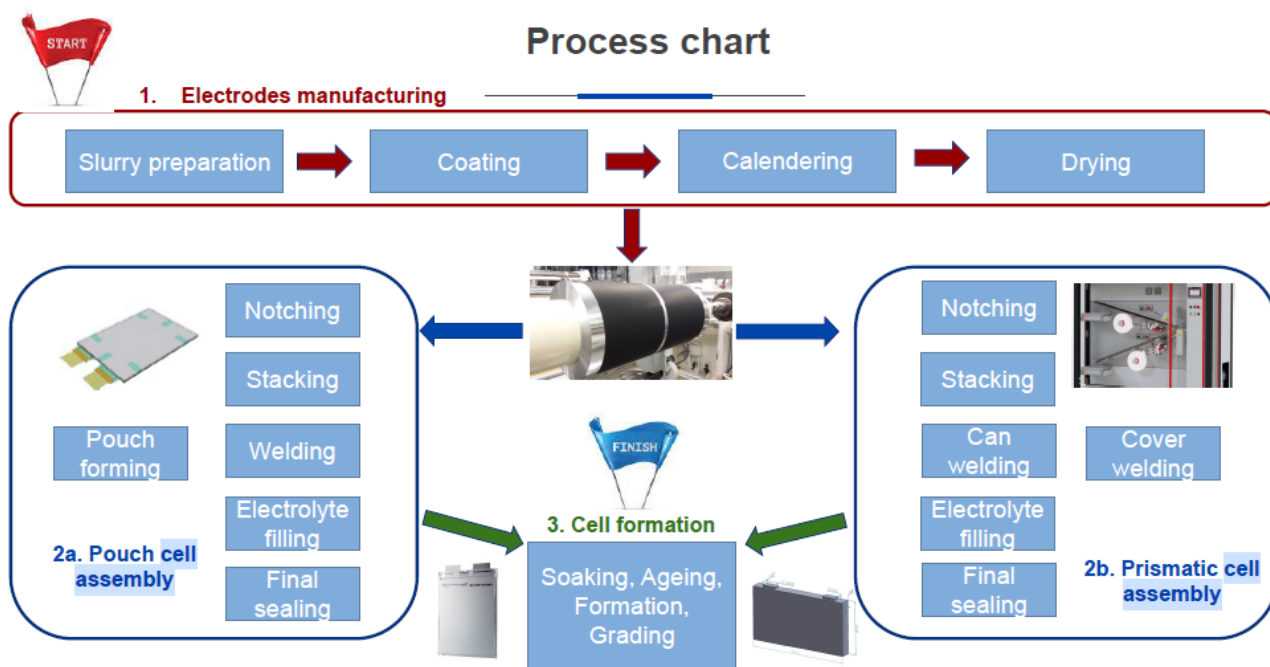
1. razvoju naprednih brezogljčnih materialov kot končnih produktov,
2. razvoj storitev in tehnologij na področju brezogljčnih tehnologij,
3. napredek področja raziskav, razvoja in inovacij,
4. izboljšanje naložb v regiji ter komplementarnosti regije z mednarodnimi iniciativami,
5. boljša izraba in razvoj raziskovalne infrastrukture,
6. napredek na področju človeških virov regije, zlasti v smislu krepitve raziskovalnega potenciala raziskovalcev ter njihovih razvojnih kompetenc in inovacijskih potencialov,
7. prispevek na področju gospodarstva- prenos znanja, rasti in razvoja industrije in MSP-jev v regiji in širše.





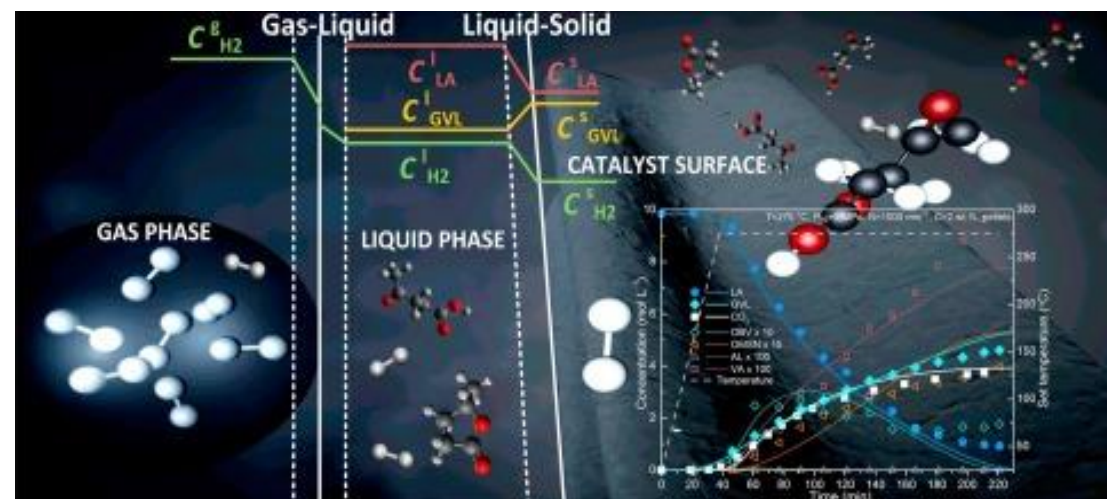
BATERIJSKI DEL:

- Pilotna linija za izdelavo ploščatih in/ali prizmatičnih akumulatorjev
- Testiranje večjih celic in baterijskih paketov
- Spremljevalna enota za delo s sodobnimi baterijskimi sistemi
- Splošna analitska laboratorijska oprema



IZRABA VODIKA IN CO2:

- Demonstracijska enota zajema CO₂
- Demonstracijska enota PEM in AEM elektroliza
- Demonstracijska enota za pretvorbo CO₂ v plinske in tekoče produkte
- Postrojenje za sintezo, aktivacijo in karakterizacijo katalizatorjev
- Splošna analitska laboratorijska oprema



**Časovnica projekta – vzpostavitev DUBT**

II.	Projektne aktivnosti	september 2023 – junij 2026
1.	Nakup stavbe	september 2023 – november 2023
2.	Izvedba JN za izbor izvajalca adaptacije objekta in dobavitelja potrebne pohištvene in raziskovalne opreme	september 2023 – november 2023
3.	Izbor izvajalca adaptacije objekta in dobavitelja potrebne pohištvene in raziskovalne opreme	december 2023
4.	Izvedba GOI del	marec 2024 – maj 2025
5.	Dobava in montaža laboratorijske opreme in pohištva	september 2024 – maj 2026
6.	Pregled in prevzem objekta ter pridobitev uporabnega dovoljenja	junij 2025 – september 2025
7.	Konec vseh aktivnosti na projektu	junij 2026

Izvedene aktivnosti 2022-23 – nakup stavbe

1. Priprava idejnega projekta za opremo – ocena potrebe po m2
2. Analiza potencialnih lokacij:
 1. ocena izvedljivosti
 2. analiza SWOT
 3. časovni vidik
3. Izbor lokacije
4. Cenitev objektov
5. Priprava DIIP -Dokument identifikacije investicijskega projekta
6. Priprava kupoprodajne predpogodbe

Identificirane lokacije – K.O. Kisovec





Naziv podjetja	
Slovenska podjetja	
1.	Metalurško-kemična industrija Celje, Cinkarna Celje
2.	Dravske elektrarne Maribor
3.	Elaphe d.o.o
4.	Hidria korporacija
5.	Pipistrel d.o.o
6.	Mebius
7.	Elektro Gorenjska d.d.
8.	Keko-oprema d.o.o
9.	Podkrižnik d.o.o
10.	Steklarna Hrastnik
11.	TAB d.d.
12.	ELES d.o.o
13.	Gen-i d.o.o
Tuja podjetja	
14.	Renault Technocentre
15.	Tiamat Energy
16.	TotalEnergies
17.	Honda R&D Europe
18.	Rimac Technology
19.	Saft
Izobraževalne ustanove	
20.	LRCS - Laboratoire de Reactivite et Chimie des Solides, Universite de Picardie
21.	Ruđer Bošković Institute
22.	Univerza v Mariboru, Fakulteta za kemijo in kemijsko tehnologijo
23.	University of Zagreb
24.	CIC energigUNE
25.	Univerza v Ljubljani, Fakulteta za kemijo in kemijsko tehnologijo



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