



HORIZONT EURÓPA

Klaster 5:

Klíma, energetika a mobilita

Predstavenie NCP pre program Horizont Európa, ich činnosti a jednotlivých oblastí programu

10. marec 2021



EURÓPSKA ÚNIA
Európsky fond regionálneho rozvoja
OP Integrovaná infraštruktúra 2014 – 2020



MINISTERSTVO
ŠKOLSTVA, VEDY,
VÝSKUMU A ŠPORTU
SLOVENSKEJ REPUBLIKY



Klaster 5: Klíma, energetika a mobilita



Štruktúra RP Horizont Európa



Klaster 5 - oblastni intervencije

**1. Climate Science
and Solutions**

2. Energy Supply

**3. Energy Systems
and Grids**

**4. Buildings and
Industrial Facilities in
Energy Transition**

**5. Communities
and Cities**

**6. Industrial
Competitiveness in
Transport**

**7. Clean Transport
and Mobility**

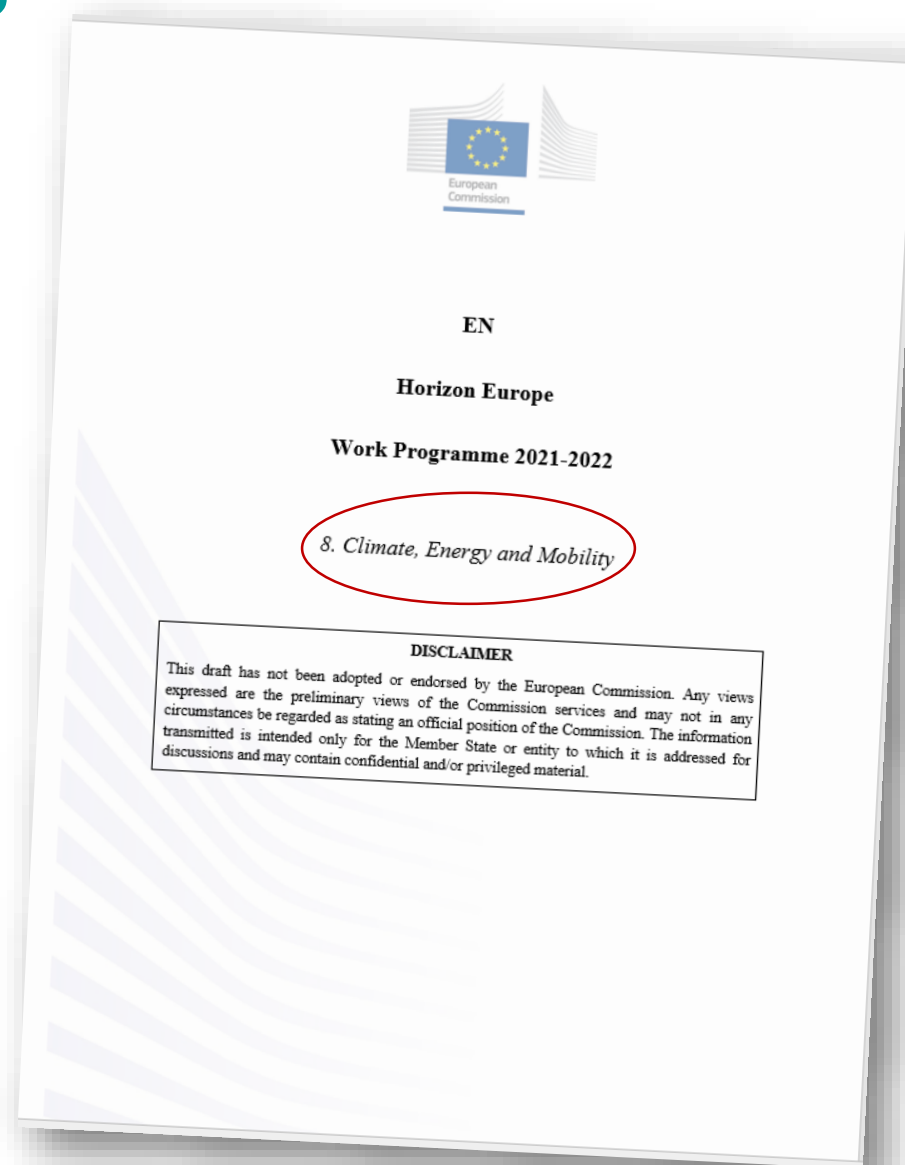
8. Smart Mobility

9. Energy Storage

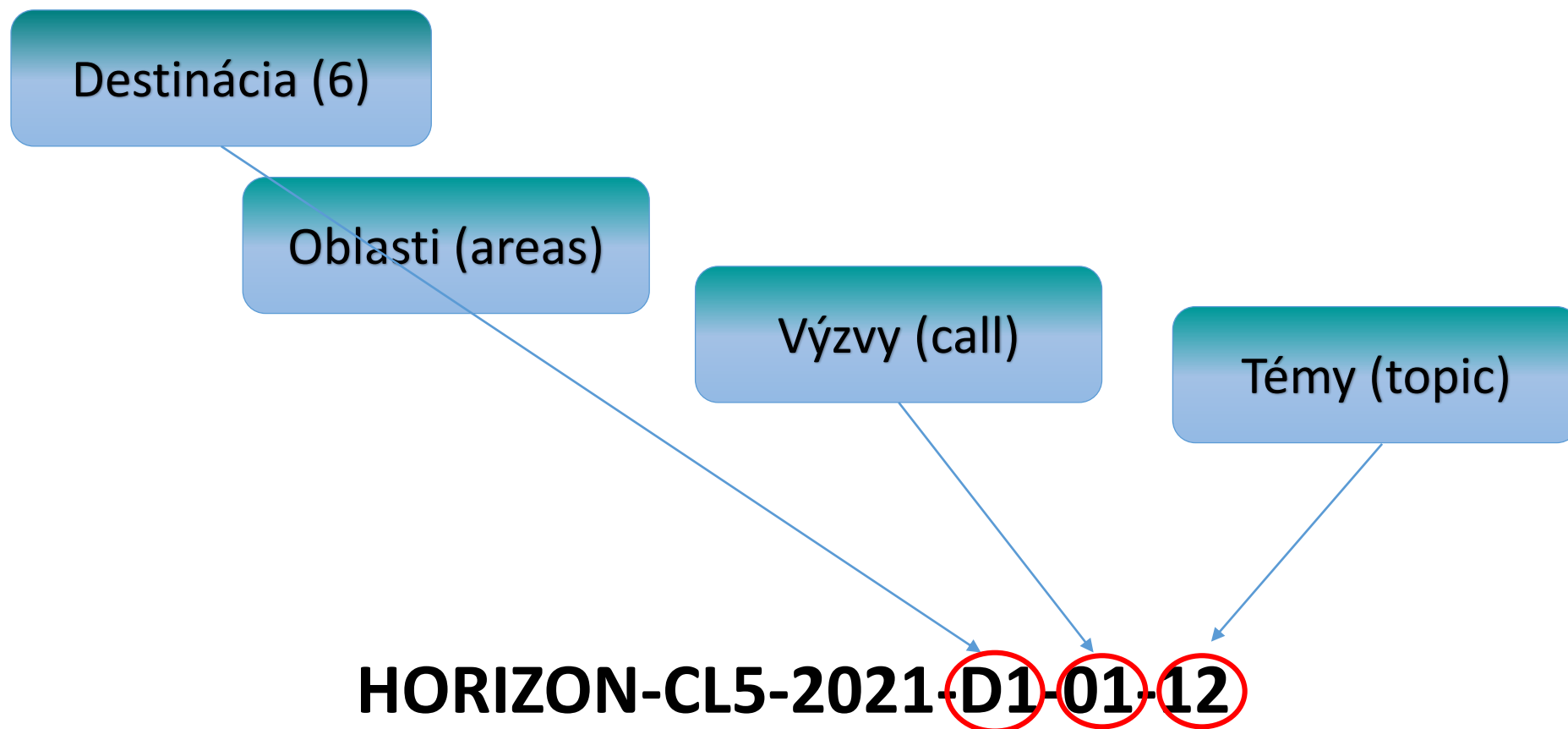
Návrh HE Pracovného programu

Základný programový dokument pre Klaster 5
na roky 2021-2022

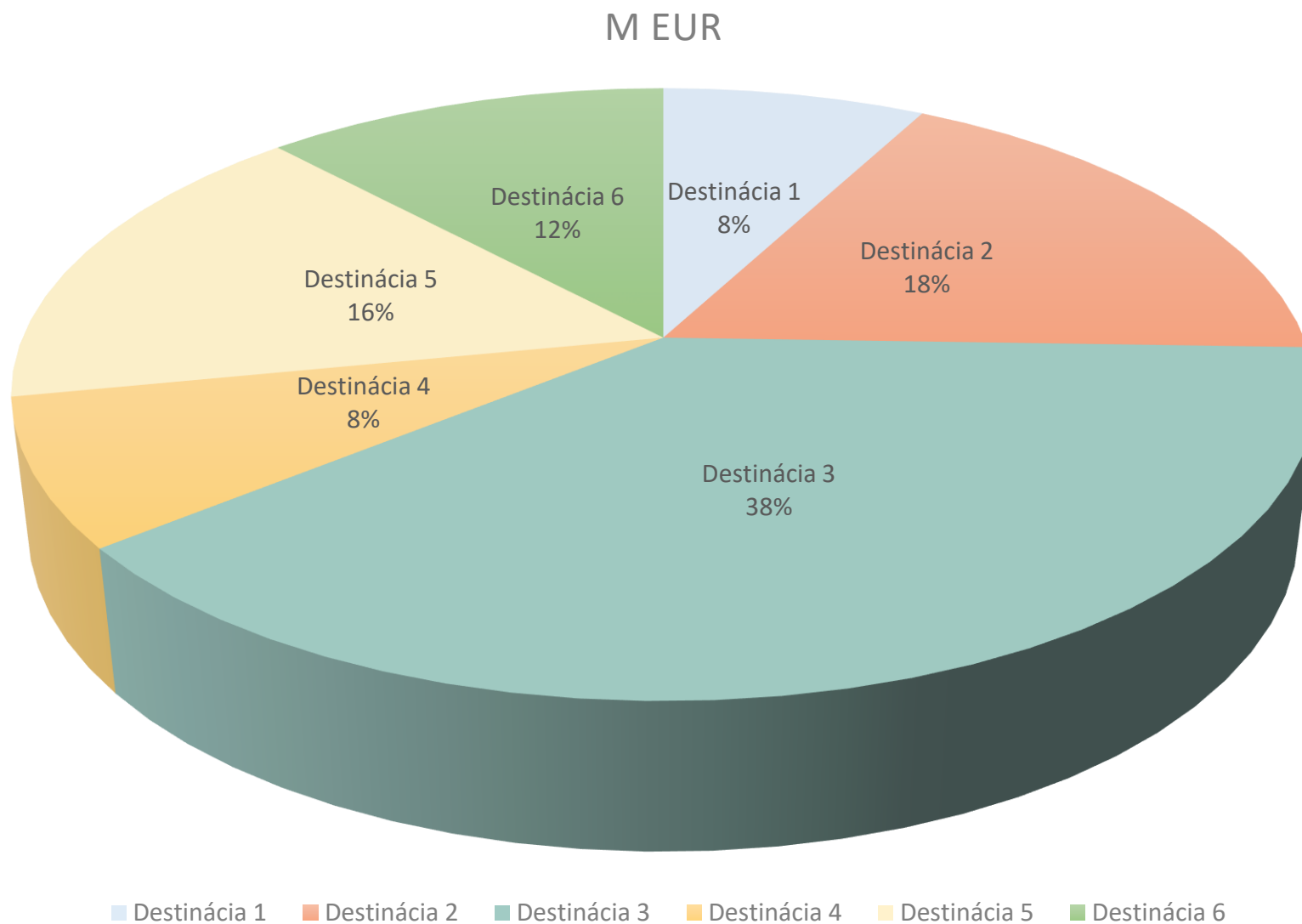
- 6 Destinácií
- cca 20 výziev
- cca 190 tém zatriedených do tematických oblastí
- RIA, IA, CSA
- témy vyhlasované Európskymi partnerstvami sú súčasťou Pracovného programu 2021-2022



Klaster 5 - štruktúra Pracovného programu 2021-22



Klaster 5 - alokovaný rozpočet na roky 2021-22



Klaster 5 - Destinácie Pracovného programu

D1: Klimatické vedy a riešenia v oblasti klímy

D2: Medziodvetvové riešenia pre dekarbonizáciu

D3: Obnoviteľné, bezpečné dodávky energie 2021-2024

D4: Efektívne, udržateľné a inkluzívne využívanie energie

D5: Nízkoemisné a kompetitívne riešenia pre všetky dopravné módy

D6: Bezpečná doprava a int. služby pre mobilitu pasažierov a tovaru

D1: Klimatické vedy a riešenia v oblasti klímy

oblasť	2021	2022
Veda o Zemi	1 téma	2 témy
Analýzy spôsobov a ciest k dosiahnutiu klimateckej neutrality	3 témy	3témy
Adaptácia na zmenu klímy a klimatecké služby	2 témy	1 téma
Sociálne aspekty vo vzťahu ku klimateckým zmenám	1 téma	1 téma
Interakcie v rámci klimateckého ekosystému	2 témy	1 téma

(earth system science, projection of climate change, innovative mitigation actions, global climate mitigation models, European climate change research and innovation, standardised tools for climate proofing economic methods for decision-making on climate and environmental policies, nature-based and technical CDR methods, socio-economic risks of climate change in Europe, adaptation strategies through improved climate predictions in Europe, Integrated Assessment Models improvement, high-resolution Earth system models development for global and regional climate change projections ...)

D2: Medziodvetvové riešenia pre dekarbonizáciu

oblasť	2021	2022
BATÉRIE – Európsky hodnotový reťazec pre batérie (processing, refining and recycling of raw materials, generation 3b Li-ion batteries, Generation 4a, 4b Li-ion batteries, scalable manufacturing technologies, recycling processes, disruptive technology exploration and uptake...)	7 tém	10 tém
PRELOMOVÉ TECHNOLOGIE A RIEŠENIA V OBLASTI KLÍMY (technological feasibility of the proposed concepts, methane cracking to usable hydrogen and carbon, greenhouse gases removal technologies, direct atmospheric carbon capture and conversion technologies...)	4 témy	0 tém
ZAANGAŽOVANIE OBČANOV DO TRANSFORMAČNÉHO PROCESU SMEROM K UDRŽATEĽNEJ SPOLOČNOSTI ("just transition" to climate-neutral and environmentally sustainable economies and societies; SSH research communities in climate, energy and mobility disciplines; Transition Super-Labs (pilot); collective thinking & co-creation...)	4 témy	0 tém
KOMUNITY A MESTÁ (Co-Funded Partnership: Driving Urban Transitions to a sustainable future - DUT) • synergia s V&I Misiou Klimaticky neutrálne a inteligentné mestá	1 téma	1 téma

D3: Obnoviteľné, bezpečné dodávky energie

oblasť	2021	2022
VEDÚCE POSTAVENIE EURÓPY V TECHNOLOGIÁCH PRE DOSTUPNÚ, BEZPEČNÚ A UDRŽATEĽNÚ ENERGIU Z OBNOVITEĽNÝCH ZDROJOV ENERGIE (RES) (disruptive renewable energy and renewable fuel technologies and systems; wave energy devices, market uptake of renewable energy and fuel technologies, international collaboration; renewable value chains, market uptake solutions...)	19 tém	24 tém
ENERGETICKÉ SYSTÉMY, SIETE A SKLADOVANIE ENERGIE (ESGS) (smart and cyber-secure energy grids; increased resilience of the energy system, data-driven energy services for consumers, cost-optimised and flexible energy system; superconducting systems and pipelines; advanced Power Electronics; European energy data space...)	10 tém	7 tém
ZACHYTÁVANIE, VYUŽÍVANIE A SKLADOVANIE UHLÍKA (CCUS) (CCUS in hubs and clusters; CO2 emission mitigation options in electricity generation and industry applications; Cost reduction of CO2 capture - new or improved technologies...)	2 témy	1 téma
PRIEREZOVÉ TECHNOLOGIE A RIEŠENIA (CC Cross-cutting issues) (Support to the European Geological Services, Support to the activities of the ETIPs and technology areas of the SET-Plan, Clean Energy Transition Partnership ...)	3 témy	0 tém

D4: Efektívne, udržateľné a inkluzívne využívanie energie

oblasť	2021	2022
ENERGETICKÝ ÚČINNÝ, UDRŽATEĽNÝ A KLIMATICKY NEUTRÁLNE BUDOVY A PRIEMYSELNÉ ZARIADENIA (energy performance assessment and certification; industrialisation of deep renovation workflows; advanced data-driven monitoring of building stock energy performance; heat upgrade technologies, industrial excess (waste) heat-to-power conversion based on organic Rankine cycle...)	5 tém	9 tém
PRIEMYSELNÉ ZARIADENIA V ENERGETICKEJ TRANSFORMÁCII (thermal energy management; full-scale demonstration of heat upgrade technologies with supply temperature in the range 90 - 160°C; systems based on Organic Rankin Cycles...)	2 témy	2 témy

D5: Nízkoemisné a kompetitívne dopravné riešenia

oblasť	2021	2022
BEZ EMISNÁ CESTNÁ DOPRAVA (zero tailpipe emission vehicles uptake, user-centric solutions for road-based EU mobility, user-friendly charging, infrastructure concepts, circular economy concepts → road vehicles and mobility services, batteries...)	4 témy	4 témy
LETECKÁ DOPRAVA (Aviation) (precompetitive fundamental aviation research and technologies for future development; development, integration and validation of climate-neutral aviation technologies; reduction of all aviation impacts and emissions, developing aircraft technologies for deep reduction of greenhouse gas emissions, European aero-industry's global leadership position...)	2 témy	3 témy
VODNÁ DOPRAVA (low-carbon, clean, smart, and competitive waterborne transport, climate neutral and clean solutions in the shipping sector, environmental impact reduction, system efficiency, digital and EU satellite-navigation solutions, ↑ competitiveness of the European waterborne sector...)	8 tém	6 tém
DOPADY DOPRAVY NA ŽIVOTNÉ PROSTREDIE A ĽUDSKÉ ZDRAVIE (retrofit solutions for tailpipe and brake polluting emissions, noise and particle emissions assessment...)	2 témy	1 téma

D6: Bezpečná, pružná doprava a pokročilé služby pre mobilitu pasažierov a prepravu tovaru

oblasť	2021	2022
PREPOJENÁ, KOOPERATÍVNA A AUTOMATIZOVANÁ MOBILITA (Connected, Cooperative and Automated Mobility - CCAM) safety validation of CCAM systems, Physical and Digital Infrastructure (PDI), Cyber secure and resilient CCAM, SSH aspects in CCAM solutions - Analysis of socio-economic and environmental impacts of CCAM systems and services; Framework for coordination of CCAM demonstrations in Europe...)	6 tém	5 tém
MULTIMODÁLNE A UDRŽATEĽNÉ DOPRAVNÉ SYSTÉMY PRE PASAŽIEROV A TOVAR (multimodal freight transport nodes, physical and digital infrastructure for clean, connected and automated multimodal mobility; sustainable last mile solutions in the living labs; Climate resilient and environmentally sustainable transport infrastructure...)	3 témy	7 tém
BEZPEČNOSŤ A ODOLNOSŤ PRE VŠETKY A NAPRIEČ VŠETKÝMI DOPRAVNÝMI MÓDMI (Safety in urban areas/road transport safety - lightweight vehicles testing; waterborne safety - infection control on-board large passenger ships/healthy ship design; aviation safety improvement and resilience...)	4 témy	3 témy

Výskumno-inovačné misie relevantné pre Klaster 5



Adaptácia na zmenu klímy

- **HORIZON-MISS-2021-CLIMA-01-01:** Better prepared regional and local authorities to adapt to climate change (opening: 12/5/2021 closure: 9/9/2021 ; budget: 5 MEUR; type of action: CSA, 1 project)

Klimaticky neutrálne a inteligentné mestá



- **HORIZON-MISS-2021-CIT-01-01:** Supporting national, regional and local authorities across Europe to prepare for the transition towards climate neutrality within cities (2 MEUR)
- **HORIZON-MISS-2021-CIT-01-02:** Collaborative local governance models to accelerate the emblematic transformation of urban environment and contribute to the New European Bauhaus initiative and the objectives of the European Green Deal (2 MEUR)



Výskumno-inovačné misie



Timeline

- **End of June 2020**
The Mission Board produces a draft report proposing concrete targets and timelines
- **22-24 September 2020**
The final recommendations of the Mission Board are handed over to the European Commission at the European Research & Innovation Days
- **November 2020**
The mission enters preparatory phase
- **1st and 2nd quarter of 2021**
Preparation of mission implementation plans, followed by Commission decision on full implementation phase
- **3rd and 4th quarter of 2021**
Launch of the missions in full implementation phase; updated Horizon Europe Work Programme for EU missions

Európske partnerstvá v oblasti klímy, energetiky a mobility

Spoločne financované

- Driving urban transitions to a sustainable future (DUT)
- Clean Energy Transition

Inštitucionalizované

- Integrated Air Traffic Management (ATM)
- Clean Aviation
- Clean Hydrogen
- Europe's Rail system

Spoločne programované

- Build4People
- Towards zero-emission road transport (2ZERO)
- Connected and Automated Driving (CCAM)
- Zero-emission waterborne transport
- Industrial Battery Value Chain



Ďakujem za pozornosť

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