

COMPETITII DESCHISE, Septembrie 2021

Sursa: portalul EC si CRESCDI

1. MSCA Postdoctoral Fellowships 2021

Deadline competiție: 12 octombrie 2021

Link: <https://ec.europa.eu/research/mariecurieactions/calls/msca-postdoctoral-fellowships-2021>

Descriere: Project results are expected to contribute to the following outcomes: For supported postdoctoral fellows Increased set of research and transferable skills and competences, leading to improved employability and career prospects of MSCA postdoctoral fellows within academia and beyond; New mind-sets and approaches to R&I work forged through interdisciplinary, inter-sectoral and international experience; Enhanced networking and communication capacities with scientific peers, as well as with the general public that will increase and broaden the research and innovation impact. For participating organisations Increased alignment of working conditions for researchers in accordance with the principles set out in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers; Enhanced quality and sustainability of research training and supervision; Increased global attractiveness, visibility and reputation of the participating organisation(s); Stronger R&I capacity and output among participating organisations; better transfer of knowledge; Regular feedback of research results into teaching and education at participating organisations.

Bugetul competiției: 205.700.000 EURO

2. ERC Synergy Grant (ERC-2022-SYG)

Deadline competiție: 10 noiembrie 2021

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/erc-2022-syg;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;program>

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Descriere: Objectives The aim is to provide support for a small group of two to four Principal Investigators to jointly address ambitious research problems that could not be addressed by the individual Principal Investigators and their teams working alone. Synergy projects should enable substantial advances at the frontiers of knowledge, stemming, for example, from the cross-fertilization of scientific fields, from new productive lines of enquiry, or new methods and techniques, including unconventional approaches and investigations at the interface between established disciplines. The transformative research funded by Synergy Grants should have the potential of becoming a benchmark on a global scale. Principal Investigators must demonstrate the ground-breaking nature, ambition and feasibility of their scientific proposal. Principal Investigators must also demonstrate that their group can successfully bring together the scientific elements necessary to address the scope and complexity of the proposed research question. One of the Principal Investigators must be designated as the Corresponding Principal Investigator. At any one time, one Principal Investigator per Synergy Grant Group except the Corresponding one can be hosted or engaged by an institution outside of the EU or Associated Countries. Size of ERC Synergy Grants Synergy Grants may be awarded up to a maximum of EUR 10 000 000 for a period of 6 years. The maximum award is reduced pro rata temporis for projects of a shorter duration. This does not apply to ongoing projects. However, up to an additional EUR 4 000 000 in total can be requested in the proposal to cover (a) eligible 'start-up' costs for Principal Investigators moving to the EU or an Associated Country from elsewhere as a consequence of receiving the ERC grant and/or (b) the purchase of major equipment and/or (c) access to large facilities and/or (d) other major experimental and field work costs, excluding personnel costs. As any additional funding is to cover major one-off costs it is not subject to pro rata temporis reduction for projects of shorter duration. All funding requested is assessed during evaluation.

Bugetul competiției: 297.000.000 EURO

3. Sustainable, secure and competitive energy supply (HORIZON-CL5-2021-D3-03)

Deadline competiție: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-15;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

Descriere: Project results are expected to contribute to all of the following expected outcomes: Performance and reliability improvement of shallow and/or deep geothermal systems; Reduced environmental impact of geothermal plants; Reduced risk of seismicity; Increased citizen engagement for geothermal energy; Reduction of LCOE approaching SET Plan targets (actions should clearly justify estimated LCOE at project start and end); Energy efficient, environmentally sound, and economically viable generation of electricity, and/or heating and cooling from geothermal resources in a wide range of geological settings, enabling geothermal energy development in new regions and supporting application concepts for local energy supply. Scope: The proposal is expected to develop and validate innovative sustainable circular-by-design solutions that can reduce environmental impact and increase the overall circularity of geothermal energy. The following can be considered: Capture of greenhouse gases, storage or reinjection schemes for the development and exploitation of geothermal reservoirs, in particular those with high content of non-condensable gases (NCGs), and the use of alternative fluid to brine. Techniques for reservoir development and exploitation in a wider range of geological settings, including complex and/or untested geological conditions. Potential introduction and demonstration of the innovative technologies as part of existing geothermal plants in Europe and abroad. Novel methods and technologies to find and develop productivity

from near magmatic, superhot/supercritical zones that are currently unexploitable and non-commercial.

Bugetul competiției: 10.000.000 EURO

4. Innovative biomethane production as an energy carrier and a fuel

Deadline competiție: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-16;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

Descriere: Biomethane is a renewable substitute of natural gas, which can provide energy storage capability and be a flexible renewable energy carrier to be fed to the existing gas grid if reaching quality standards at an affordable price. Project results are expected to contribute to all of the following expected outcomes: Increase cost-effectiveness of the conversion in biomethane production. Diversify the conversion technology basis for biomethane production. Contribute to market up-take of biomethane related technologies in the gas market. Contribute to the priorities of the SET Plan Action 8. Scope: Proposals will demonstrate cost-effective and innovative biomethane production through thermochemical, biochemical, chemical, electrochemical, biological pathways including sustainable biomass and biogenic wastes gasification, CO₂ effluents from anaerobic digestion or fermentation processes combined with renewable hydrogen or water. The biomethane production should be optimized to improve production efficiency, reduce cost, minimize GHG emissions and increase sustainability in a circularity approach for energy and material above conventional technologies of biogas upgrading to biomethane. All demonstrators should be fully and transparently documented, to ensure replicability, up-scaling and to assist future planning decisions. Demonstrating advanced technologies for efficient

production at scale of biomethane will contribute to facilitate the market introduction of the biomethane technologies and the substitution of natural gas in the gas grid. This is the basis for penetration of biomethane in the energy and the transport energy systems, in particular for gas consuming sectors. It supports the European Green Deal and climate and energy targets for 2030 and the net zero greenhouse gas emissions by 2050, while supporting the EU goals for energy independence and competitive sustainable growth.

Bugetul competiției: 20.000.000 EURO

5. Wind energy in the natural and social environment

Deadline competiție: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-05;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

Descriere: The proposal is expected to address all the following aspects: Develop and promote the use of validated models and guidelines as a tool for enhanced societal engagement. Further, it should also demonstrate how participatory processes can enhance value creation and achieve higher social acceptability of wind energy; Assess through validated models how wind turbines impact the local environment (noise, impact on soil or sea beds, visual effect, effects on animal life and other species). In addition, it should also assess, if applicable, how offshore wind turbines (and fixed or floating substructures) impact the local marine environment (currents, waves, upwelling, and sediment transport). Finally, it should help to identify the best areas for deployment and to develop new designs and/or enhanced control strategies of wind turbines to address potential impacts; Develop a forum where regulators, industry, and local communities can exchange information

and provide input to one another. Further, it should also identify the effect that the implemented models have on promoting wind energy; Address how the impact of different wind energy innovations and applications (onshore, offshore, floating, and airborne) is seen by the general public and the local actors. This topic requires the effective contribution of Social Science and Humanities (SSH) disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities. Social innovations should also be considered, notably as new tools, ideas and methods leading to active citizen engagement and as drivers of social change, social ownership, and new social practices.

Bugetul competiției: 10.000.000 EURO

6. Novel approaches to concentrated solar power (CSP)

Deadline competiție: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-06;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

Descriere: Concentrating solar power (CSP) plants supply renewable, dispatchable power and can therefore be an important element of the evolving energy system. Project results are expected to contribute to all of the following expected outcomes: Higher shares of variable output renewables in the energy system. Future, higher-efficiency CSP plants. Reduced levelized cost of electricity of future CSP plants. Significant performance regarding start-up, shutdown and load variation of future CSP plants. Improved environmental profile of future CSP plants. Scope: Support will be given to novel solutions that use concentrating solar thermal energy to generate power. In terms of power dispatchability, the novel solutions will have to

ensure a performance at least equivalent to current commercial installations. Solutions that cogenerate power and heat are also in the scope. Moreover, solutions that support the concentrating solar thermal technology with photovoltaic technology are also in the scope. Projects should assess the sustainability of the proposed solutions in environmental and socio-economic terms. Applicants are encouraged to consider a 'circularity by design' approach.

Bugetul competiției: 9.000.000 EURO

7. Stable high-performance Perovskite Photovoltaics

Deadline competiție: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-07;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

Descriere: Scope: Perovskite PV are welcomed as an emerging technology for solar energy conversion, as today they afford high power conversion efficiency (PCE), higher than 25%. At the same time, perovskite semiconductors are based on abundant and low-cost starting materials and can be processed using simple and economic methods. The tuneable bandgap of the perovskite materials opens a lot of applications in a wide range of optoelectronic devices, even beyond solar cells. To ensure however economic feasibility and competitive levelized cost of electricity, the technology should offer long-term stability alongside high power conversion efficiency to match the reliability of silicon-wafer-based modules (the lifetime expectation for a PV module in a power plant is 20–25 years). At present, the long-term stability of lead halide perovskite modules does not meet this target and improvements are hampered by a lack of understanding of the cell and module failure modes. In

addition to the intrinsic cell stability issues of perovskite PV, the usage of lead and scaling-up are the main challenges towards bringing perovskite technologies to the market. The proposal should address all of the following: Research and resolve the degradation issues/mechanisms encountered from material to module and produce stable and highly efficient perovskite PV architectures/modules by optimizing the constituent materials, the architecture of the cell, the interfaces, the interconnections between cells, the environment conditions during the fabrication steps of cells and modules, the encapsulation of cells and modules, etc. Propose new device concepts and new materials (improved lead-halide perovskites or Pb-free perovskite analogues) to deal with any toxicity issues. Ensure compliance with the relevant protocols (ISOS) at laboratory scale. Develop adequate stability assessment methods/measurements; propose and perform device/module real –life (under actual outdoor operating conditions) characterisation for reliability and energy yield assessment. Identify environmental “hotspots” and how to address them. Perform a life cycle analysis (including decommissioning and disposal) to bring evidence of the low environmental impact, better resource efficiency than current commercial PV technologies, and circularity potential.

Bugetul competiției: 15.000.000 EURO

8. Cost-effective micro-CHP and hybrid heating systems

Deadline competiției: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-08;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

Descriere: Project results are expected to contribute to some of the following expected outcomes: Increased technical performance, robustness, feasibility and penetration of renewables at household level Increase technology leadership and competitiveness of European industry Increased production share of renewables at consumer level Increased socioeconomic and environmental sustainability of renewables based energy systems at household level. Scope: Develop new technologies for biomass micro-CHP systems, including e.g. high efficiency supercritical CHP systems with embedded integration of other renewables into hybrid heating systems for maximizing the overall share of renewables at household and/or multifamily level and emission reduction. Improve the integration of compatible renewable technologies in household and/or multifamily generators of heat and power making them attractive by addressing technological bottlenecks, efficiency, cost-effectiveness and socio-economic as well as environmental sustainability.

Bugetul competiției: 10.000.000 EURO

9. Carbon-negative sustainable biofuel production

Deadline competiție: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-09;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

Descriere: ExpectedOutcome: Reusing or inhibiting biogenic effluent gases from biofuel production in the same process, increases the biomass conversion efficiency and sustainability potential and the overall resource and energy efficiency of the biomass utilization. Improving such integration will contribute to increase the biofuel technology competitiveness and acceptance and advance the European leadership and global role in the area of

sustainable biofuels. Project results are expected to contribute to all of the following expected outcomes: Increase bioenergy efficiency and sustainability. Increase sustainable biomass resource utilization. Generate negative emissions from biofuel production. Scope: Proposals should develop cost-effective solutions to minimize carbon waste in sustainable biofuel production processes by inhibiting biogenic effluent gas emissions or incorporating biological and/or chemical/other capture of the biogenic effluent gas emissions from the process and use it as appropriate either for separate in-situ downstream synthesis of renewable fuels of biological origin, or integrate it in the sustainable biofuel production through recycling. Proposals should also include an innovative approach for biogenic carbon storage, through for example integrating production of biochar and using it as soil amendment to enhance organic carbon content and functionality of soil, as well as a means to sequester carbon into the soil. Synergies with renewable hydrogen production should be developed by incorporating it as appropriate in the sustainable biofuel production to compensate for additional needs in hydrogen, increase overall biomass conversion efficiency, minimize the biogenic carbon waste and reduce the fossil carbon footprint of the biofuel production. The overall GHG emissions should be assessed on the basis of a Life Cycle Analysis for proving negative GHG emissions and higher sustainability potential of biofuel production when reusing biogenic effluent gases in-situ, along with addressing socioeconomic aspects.

Bugetul competiției: 15.000.000 EURO

10. Innovative foundations, floating substructures and connection systems for floating PV and ocean energy devices

Deadline competiției: 23 februarie 2022

Link: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d3-03-10;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPrio>

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Descriere: Scope: The action is expected to: Test and validate the potential benefits of new circular materials in offshore floating PV and/or ocean energy substructures, foundations and if relevant mooring and anchoring systems whilst ensuring structural integrity and durability considering very high wind (speed >25 m/s), current (>1.2 m/s) and wave (height >14 m) loads and corrosion and biofouling on all elements of the ocean energy systems. Test and validate new prototype components and materials used in offshore floating PV and/or ocean energy devices and verify that they are compatible with and resistant to the marine environment. Research material properties and behaviour in combination with the use of improved predictive computational modelling tools. Research, develop and validate improved predictive computational modelling tools for material properties. The use of existing test facilities and related research infrastructures for the purposes of the project should be considered. This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Bugetul competiției: 10.000.000 EURO