EUREKA Cluster Thematic Call on: Technology Powered Green Transition

Challenges: Energy preservation, Sustainable manufacturing and Bioresources and Environment

TARGETED FOR 2021

Presentation Outline

•Why a Challenge driven call?

- Which technologies qualify for the "Technology driven Green Transition"
- Call timeline
- Questions & Answers

UN Goals: Challenges to be addressed

- Greener Mobility & Smart Cities (No. 7 & 9, Clean Energy & Infrastructure)
- ✓ Batteries and mobile applications
- ✓ Hydrogen Fuel cell (production, storage, station) and

its applications

- ✓ Smart transportation: 5G/6G, Edge Cloud IT, AI, Bigdata
- Smarter Housings / Constructions (No. 7 & 11, Clean Energy & Resources)
- ✓ IT solutions in buildings, smart monitoring, 3D construction, digital twins in housing design
- ✓ Greener building materials with a lower Co2 print

- Carbon Free Energy Supply (No. 7 & 13, Clean Energy & Climate Actions)
- Offshore Wind turbines, bioenergy, solar panels, fuel cells power to-X, energy storage, smart grids
- ✓ recyclable composites
- Bio Resources and environment (No. 14 & 15, Biodiversity)
- ✓ drone and satellite monitoring systems of land, rivers,
- Sensors, edge cloud computing
- ✓ Raman Mass spectrometry, AI, big data.
- Sustainable Manufacturing (No. 9, Industry)
- Design aimed at manufacturing, assembly, disassembly, remanufacturing, reuse and recycling.
- Zero Defects Manufacturing approach
- ✓ Reduction on the carbon footprint
- Manufacturing with less energy and material consumption

Definition: Which "Technologies" qualify?

In principle all technologies which contribute to:

- reduction of green house gases
- smarter energy systems and energy saving technologies
- preservation of bioresources and biodiversity
- sustainable manufacturing

SUSTAINABLE G ALS



https://sdgs.un.org/goals

Bio Resources and environment (Biodiversity & bioresources)

Monitoring of land, lakes, rivers & sea: Air and sea drones, satellite monitoring, deep vision, eco-monitoring

Erosion control & Cleaning of pollution of habitats: Industrial robots, sensors,

Measuring of health & population control: Sensors, thermal imaging, GIS, edge cloud computing, Raman Mass spectrometry, AI, big data.



Greener & Smarter Mobility (Energy saving)

Energy storage: Batteries, Power2X, heat storage, smart district heating, infrastructure of grids, mobile applications.

Connected cars: Smart transportation systems, interconnected vehicle communication, smart cities and traffic congestion, 5G/6G, Edge Cloud IT, AI.



Smarter Housings & Constructions, Better materials, Monitoring & Energy savings

Materials: Greener building materials with a lower CO2 footprint and recycle potential

Smart housing: IT solutions in buildings, smart monitoring, 3D construction, digital twins in housing design

Integrated Energy systems: Smart grids, local energy production & storage, heat pumps



Carbon Free Energy Supply (Energy saving)

Land & Sea based Wind Turbines: Recyclable composites, Lidar technology, Sensors, maintenance drones and robots, cobots in production

Green energy production: Hydrogen Fuel cell, solar cells, geothermal, integration of energy systems and smart grids (production, storage, convection), monitoring, sensors, political and societal acceptance and integration.





Sustainable Manufacturing

- Cleaner processes, with less resource consumption: materials, energy, lubricants, etc. and reduction of generated waste.
- Eco-design approaches for lightweight and disassembly
- Design aimed at manufacturing, assembly, disassembly, remanufacturing, reuse and recycling.
- Processes with zero emissions and waste. Towards zero defects manufacturing.
- Industrial symbiosis: using, recovering and redirecting resources for reuse.
- Reduction of the carbon footprint of production processes.
- Recyclability of new materials.



Green ICT

- Energy efficiency of Telecom and IT networks
 - including new tools for predicting and managing their traffic loads (AI both at edge and backbone, IoT...)
- Monitoring and reduction of environmental footprint of digital service usages while preserving the quality of experience. (AI,....)

Eco conception of hardware and software infrastructure

- Innovative design for Circular Economy, framework for all green transition ecosystem parties
- related Business models, given important ICT equipment constraints
- innovative modular designs for :
 - hardware (e.g. for networks of antennas)
 - software
- telecom and IT equipment using renewable energies
- conception of devices that have more autonomy or even that are energy selfsufficient.
- Boosting and measuring and the Greening-by-ICT effects



Call Timeline



Questions ?

Thank you !