

Prova Scritta 1

Il candidato/la candidata illustri le principali caratteristiche di un'analisi SWOT e ne definisca il possibile impiego correlandolo alle specifica fase di un progetto complesso quale quello europeo.

The Head of the ABC Department has received an email by the European Commission. **It is requested to the candidate to read and critically synthetize the research project to the Head of the Department, by underlining the main topics and keywords of the following sentences:**

The aims of BAMB (Buildings as Material Banks) are the prevention of construction and demolition waste, the reduction of virgin resource consumption and the development towards a circular economy through industrial symbiosis, addressing the challenges mentioned in the Work Programme on Climate action, environment, resource efficiency and raw materials. The focus of the project is on building construction and process industries (from architects to raw material suppliers).

The BAMB-project implements the principles of the waste hierarchy: the prevention of waste, its reuse and recycling. Key is to improve the value of materials used in buildings for recovery. This is achieved by developing and integrating two complementary value adding frameworks, (1) materials passports and (2) reversible building design. These frameworks will be able to change conventional (cradle-to-grave) building design, so that buildings can be transformed to new functions (extending their life span) or disassembled to building components or material feedstock that can be upcycled in new constructions (using materials passports). This way, continuous loops of materials are created while large amounts of waste will be prevented.

Prova scritta 2

Il candidato/la candidata illustri gli obiettivi del nuovo programma europeo Horizon Europe per la ricerca e l'innovazione, la struttura, i principali ambiti e le principali caratteristiche.

The Head of the ABC Department has received an email by the European Commission. **It is requested to the candidate to read and critically synthetize the research project to the Head of the Department, by underlining the main topics and keywords of the following sentences:**

This EISi project will demonstrate and validate a complete recycling system for end of life (eol) photovoltaic (PV) modules. During the last three decades PV systems have been deployed throughout Europe showing enormous growth. Early systems are now reaching end of life and have to be disposed after returning. Facing this increasing environmental challenge three industrial partners identified the big economic potential of raw materials contained in eol PV modules. Prior to this request for funding they have developed a patented technology to recover about 95% of silicon, high purity glass, aluminum, copper, silver, gold, tin and lead from eol modules. Together with Solartys, industrial association, and Fraunhofer as RTD partner this will all be realised by demonstrating the technology involving mechanical and electrolytic based processes at an industrially relevant scale (1000 mt/a). Mechanical separation processes, chemical dissolution and electrically driven separation and winning will be combined in a new way enabling economically viable recovery.

Prova Scritta 3

Il candidato/la candidata delinea la struttura e i principali contenuti di un bando (caratteristiche generali di una Call for proposal) e le fasi “tipo” di un progetto associando ad ogni fase le possibili attività (al candidato si richiede di esplicitare la tipologia di bando considerata).

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Urban areas are very vulnerable to climate change impacts, because of the high concentration of people, infrastructure, and economic activity, but also because cities tend to exacerbate climate extremes such as heat waves and flash floods. The objective of the Pan-European Urban Climate Service (PUCS) project is to establish a service that translates the best available scientific urban climate data into relevant information for public and private end-users operating in cities.

This will be achieved by demonstrating the benefits of urban climate information to end-users, considering the sectors of energy, cultural heritage, mobility, energy, health, and urban planning. During the first half of the 30-month project, end-users (included as partners) and climate service providers will be involved in the co-design/-development of six concrete sectoral cases, to be implemented in Antwerp, Barcelona, Bern, Prague, Rome, and Vienna. Each of these cases will be subject to a detailed socio-economic impact analysis, quantifying the benefits of using urban climate information. The second half of the project will focus on upscaling and market replication, initially aiming at the extension with six new cases, involving new (non-financed) end-users.