

Technology Watch, Market Dynamics & Opportunities



‘The report **‘Evaluating Technologies and Market Dynamics for Accessibility, Mobility, and Energy Efficiency’** aims to provide a state-of-the-art overview identifying those key technologies, current solutions, emerging trends, estimated economic impacts and relevant market trends that are aligned with the objectives of the AccesS project and geared towards improving accessibility and sustainability through smart cities and smart built spaces, with a focus on the design and development of inclusive and accessible environments that accommodate the diverse needs of people with various disabilities and elderly people with reduced mobility.

The report is organized around three key areas:

Accessibility, Inclusion, and Comfort

Enhanced Accessibility Solutions:

Innovative technologies and patents are being developed to improve accessibility in both physical and digital environments by addressing both physical barriers and cognitive and sensory challenges.

Technological and Patent Advancements:

New technologies such as smart devices and gesture-based systems enable people with mobility impairments to control their surroundings, while patents focus on improving web accessibility and providing real-time information about accessible physical spaces.

Inclusivity and Social Impact:

Scientific studies highlight the broader impact of digital accessibility on social inclusion, emphasizing the importance of user-centered design to promote independence, autonomy, and better quality of life for individuals with disabilities.

Focus on Comfort and Sustainability:

Market trends emphasize not just accessibility but also comfort, considering factors like thermal, visual, and acoustic comfort in spaces, while maintaining sustainability.

Healthy and Sustainable Mobility

Technological Innovations:

Solutions like electric and autonomous vehicles, shared mobility hubs, and renewable energy integration are key to developing efficient and inclusive urban transportation systems.

Investment in Active Mobility:

To counteract the projected decline in active mobility, cities should invest in infrastructure like cycle networks and pedestrian paths to reduce emissions and enhance public transport.

Tailored Mobility Solutions:

Innovations such as the Kyburz DX2 electric tricycle and GaloxScooter provide accessible, zero-emission options for individuals with diverse mobility needs.

Cohesive System Integration:

Successful urban mobility requires integrating digital and physical accessibility technologies into a unified framework that enhances user experience and connects seamlessly with public transport networks.

Energy Consumption and Greenhouse Gas Emissions

Integration of Advanced Technologies:

Importance of integrating energy management technologies and renewable energy solutions, like Building Automation Systems (BAS) and photovoltaic glass to reduce energy consumption and greenhouse gas (GHG) emissions in buildings.

Focus on Innovation:

Solutions like the patented Glass to Power IPTG, a photovoltaic transparent glass, and patents on energy consumption prediction and GHG emissions measurement, advancing nearly zero-energy buildings (nZEB).

Energy Monitoring Tools:

Energy monitoring tools (Paessler, Energy Star) and patents for tracking energy consumption and GHG emissions, which help optimize energy use in buildings and infrastructure.

Regulatory Alignment with EU Directives:

Role of European regulations like the Energy Performance of Buildings Directive (EU/2024/1275) and the Energy Efficiency Directive (EU/2023/1791) in promoting decarbonization and energy efficiency.



This work has been conducted
under the leadership of CETEM,
the Technology Centre of
Furniture and Wood of the
Region of Murcia (Spain).

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The AccesS project has received funding from the European Union's Horizon Europe Framework Programme for Research and Innovation under grant agreement no 101147722.