Development and application of a standardized methodology for the PROspective SUstaİnability assessment of TEchnologies (PROSUİTE)

General Public Summary of a project funded by the European Commission

Sustainability: Seeking to balance economic, environmental and social goals

Europe 2020 aims to foster "smart, sustainable, inclusive growth" in the European Union. Economic, environmental, and social goals are intertwined.

Traditionally, public and private sector activities might give a high priority to just one or two families of goals. Today, we ask for "triple bottom line" accounting – success is measured not just in terms of sole economic gain, or of environmental protection, or of ethical correctness and the well-being of individuals and communities. There is growing awareness that we must take care of all these goals simultaneously. "*Sustainability*" has become a catchword. It has many definitions (for instance: "*meeting the needs of the present without compromising the ability of future generations to meet their own needs*"; or "*improving the quality of human life while living within the carrying capacity of supporting eco-systems*"…). To ensure sustainability, we must find an appropriate, durable balance between the three families of goals.

Sustainability Assessment: Checking economic, environmental and social performance

A whole new set of tools must be developed to analyze activities and their consequences upon the economy, the environment, and society. The tools must be adequate for measuring these complex domains, as well as their interactions (like "rebound effects" that may take place when changes are made in one area). Performing such **sustainability assessment** should help point to better solutions – highlighting where performance should be improved, where corrections should be made, where wiser choices can lead to a preferred "triple bottom line" result. **PROSUITE**, a four-year (2009-2013) project funded in part by the European Commission, gathered scientists and industrialists in an effort to provide such new tools, for assessing new technologies in particular.

PROSUITE: Complete sustainability assessment of technologies, today and tomorrow

The European PROSUITE project has provided these tools by delivering a broad life cycle assessment (LCA) framework. The freely accessible tools are designed to support the actual sustainability decisions that product developers, policy makers and businesses are facing. They have been tested on four hot technologies: ***Biorefineries*** *- producing energy from organic waste;* ***Nanotechnology*** *- in new textiles;* ***Multifunctional mobile (telephone) devices*** *- containing rare metals that should be recycled;* ***Carbon storage and sequestration*** *- to reduce greenhouse gas emissions from power plants and large-scale industrial sources.*

PROSUITE tools and concepts go beyond the traditional three pillars, in order to deliver even more detailed and meaningful results for decision makers. Today they can use the PROSUITE 5-pillar framework for assessment, which is supported by a freeware Decision Support System.

The PROSUITE innovation: A 5-pillar approach

When sustainability is defined only on the traditional 3 pillars, existing assessments may be flawed by "overlaps". For instance, human health and income could be viewed as part of the social pillar, since both factors have a large influence on the quality of life of people – however, they also could be viewed as part of the economic pillar! To enable proper assessment, PROSUITE developed an innovative framework that limits such overlapping and ensures that each pillar has a unique set of indicators. To achieve this goal, the resulting framework proposes five pillars:

1. Impact on Human Health
2. Impact on Social Well-being
3. Impact on Prosperity
4. Impact on Natural Environment
5. Impact on Exhaustible Resources.

PROSUITE is a collaboration of 25 academic, SME and industry partners.
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