SBRS concept 2021-04-16

Name of the innovation

Sustainable Biological Recycling System (SBRS)

Description

1. The SBRS concept consists of several innovations
   - local and smart high-tech biogas plant with Optimum Solids Anaerobic Digestion (OSAD) which will produce **biogas** and **biofertilizer adapted to cultivation systems**
   - hygienic collection system for human waste and food waste (CC BAS, CFW BAS)
   - modern logistics with digitization
   - BIO H2O system for biological treatment of household grey water

2. SBRS positively affects all the SDGs
   - Reuse in an ecologically, economically, and socially sustainable way all the 16 chemical elements that are in Renewable Organic Material (ROM) in residual products from agriculture, forestry, horticulture and municipal waste and wastewater. These are C, O, H, N, K, Ca, Mg, P, S, Cl, Fe, B, Mn, Zn, Cu and Mo and are necessary for the growth and development of plants and form the basis for soil fertility/productivity.
   - Use bioenergy more efficiently instead of losing it. Current unsustainable systems for managing ROM entail costly losses that simultaneously pollute and thus create a negative impact on the environment, health, and climate.

3. The first draft of the concept was presented as early as 1998 and can be read at http://biotransform.eu/history/ , 1998 Resource, Conservation and Recycling 23 (1998) 67-86. The SBRS concept was further developed into its current form in recent years and now there is a group of enthusiasts who plan to apply for funding for innovation projects. To get a good innovation group, we are looking for the following partners:
   TECHNOLOGY: innovations throughout the chain
   - from the emergence of ROM in residual products / waste
   - for the use of two valuable products biogas and biofertilizer using mechanization, automation, digitization and logistics for short transports.
   ECOLOGY / CULTIVATION: execution and evaluation of cultivation tests with biofertilizer.
   ENERGY: the use of the bioenergy of biogas and its role in cultivation and in society in general.
   ECONOMY: compare costs as well as materials and energy flows for central and local systems.
   SOCIAL SCIENCE: acceptance of new system.
   REPRESENTATIVES FROM MUNICIPALITIES.

4. All local communities must prosper, and self-sufficiency must increase with the use of locally produced biofertilizers that gradually phase out soil-destroying imported agricultural chemicals that are produced using energy-intensive methods.

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The purpose is to take care of ROM in the waste from the source until the use of two valuable products - biogas and biofertilizer.
The innovation project will illustrate the great opportunities that local systems using SBRS offer for both urban and rural development.
Many will get jobs in local hygienic facilities in cities and in the countryside.
Most emissions that pollute air and water in current central systems are avoided.
Biofertilizers increase biodiversity, carbon sequestration and recycling of all the chemical elements necessary for photosynthesis. Improved soil health and increased soil fertility ensure the production of healthy foods for a long time to come with reduced use of agricultural chemicals. Biofertilizer contributes to sustainable cultivation in healthy soils.
Biogas replaces a large part of fossil energy sources when it is re-elected locally with trigeneration.

Motivation
During photosynthesis, the following chemical elements must be present: C, O, H, N, P, K, Ca, Mg, S, Fe, Mn, Zn, Cu, Cl, B and Mo which are then bound in plants with bioenergy, converted from the sun radiant energy. These vital elements then remain in both residual products and waste - called Renewable Organic Material - which originates in plants, animals, and microorganisms.
Of the 16 vital elements 13 are called plant nutrients and are found in everything that is grown and delivered to cities. It is estimated that less than 2% of plant nutrients are sent back from cities to cultivation systems worldwide. This means that 98% are emissions that pollute the environment and at the same time appear costly losses. Therefore, growers must use imported mineral fertilizers, unfortunately with only few plant nutrients. Soil degradation continues.
There is information that about 2% of all energy used in the world is used to produce mineral fertilizers. A large part of fossil energy can be phased out when plant nutrients are recycled and when the energy in the biogas is converted locally to electricity and heating / cooling.

What would you like to test or improve about your innovation?

We want to get in touch with partners for further technical development and meet both potential investors and representatives of municipalities who are future users of SBRS to offer their residents hygienic, cost-effective and easy-to-use systems for handling Renewable Organic Material in waste as well as local jobs in microgrids and in sustainable cultivation systems.

In what way does your innovation have a sustainable positive impact on the world?

With the introduction of SBRS, all goals are positively affected.

Goal 1. No poverty. SBRS offers new technology that averts poverty.
Goal 2. No hunger. SBRS promotes sustainable agriculture and food security.
Goal 3. Health and well-being. SBRS helps to radically reduce emissions that cause large economic losses and adversely affect health, the environment, and the climate.
Goal 4. Good education for all. SBRS offers knowledge-raising motivation for circular bioeconomy.

Goal 5. Gender equality. SBRS encourages everyone's ability to positively influence the sustainable development of society.
Goal 6. Clean water and sanitation. Water is a basic condition for all living things on earth, and thus also a prerequisite for sustainable development. To protect water from pollution and overexploitation is one of the most important objectives in the use of SBRS.
Goal 7. Sustainable energy for all. SBRS enables modern energy services at a reasonable cost. SBRS increases energy efficiency of local systems for waste and sewage. Produced biogas is converted locally by trigeneration into electricity and heat. The heat is converted to cooling when needed.
Goal 8. Decent working conditions and economic growth. SBRS strives for decent working conditions in systems that handle waste and sewage. Residents are offered hygienic collection devices for food and toilet waste. SBRS contributes to increased growth of biomass in the areal industries that are the basis for society's long-term sustainable economic growth.
Goal 9. Sustainable industry, innovations, and infrastructure. Within the rarely mentioned infrastructures for waste and sewage, SBRS encourages innovations with further development of "technology in the service of biology" and this leads to increased activity in sustainable industry.
Goal 10. Reducing inequality. With SBRS, a hygienic work environment is created for all participants and inequalities between other employees and those who handle waste and sewage are reduced.
Goal 11. Sustainable cities and communities. SBRS contributes with local, modern, automated, and digitized methods for sustainable recycling in waste and sewage which today is a huge environmental challenge. SBRS promotes positive economic, social, and environmental links between urban areas, peri-urban areas, and rural areas.
Goal 12. Sustainable consumption and production. SBRS uses sustainable bioresources, promotes ecosystem services that are necessary for the supply of food and other staff from cultivated soils and reduce the use of hazardous chemicals. With reduced emissions to air, water and land, the negative impact on human health, environment, and climate decrease significantly.
Goal 13. Combating climate change. SBRS contributes to food security, the soil fertility / production capacity through storage of organically bound carbon, clean water, clean air, sustainable use of natural resources and ecosystems, which mitigates the negative effects of climate change. SBRS also promotes human safety, gender equality and health.
Goal 14. Marine and marine resources. SBRS reduces pollution of water from land-based operations and especially reduces the supply of plant nutrients to water systems when water toilets are abolished. The use of water as a means of transport for waste should be largely avoided.
Goal 15. Ecosystems and biodiversity. With the introduction of SBRS is protected, restored, and promoting the sustainable use of land-based ecosystems, halting and distorting soil degradation and that the loss of biodiversity is halted.
Goal 16. Peaceful and inclusive societies. SBRS comes with a challenge for all decisionmakers: ”to build effective and accountable and inclusive institutions for all levels. Good governance and the rule of law are fundamental means of development."
Goal 17. Implementation and global partnership. SBRS calls on governments on all levels, the private sector, civil society as a whole, the UN system, and other actors to work together to achieve sustainable long-term results before 2030.

Comment
There are assumptions that the earlier civilizations collapsed due to unsustainable management of waste and other natural resources. Unfortunately, unsustainable management of waste and sewage in central systems that currently use environmentally hazardous chemicals and energy-intensive methods is already spreading to most parts of the globe and is adversely affecting our common living environment.
Unsustainable "so-called environmental technology" should be stopped by all means and replaced with "sustainable technology in the service of biology".

Contact person

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Some links that clarify the content of this application
http://biotransform.eu/wp-content/uploads/2021/04/Local-circular-system-must-replace-the-central-linear-ones-2021-03-RS.pdf

http://biotransform.eu/wp-content/uploads/2021/03/Safe-food-clean-air-and-clean-water-RS-2021-03.pdf

http://biotransform.eu/wp-content/uploads/2021/02/Contribution-to-the-online-Conference-on-Financing-the-Renovation-Wave-RS.pdf

http://biotransform.eu/wp-content/uploads/2021/02/Message-to-UN-Department-of-Economic-and-Social-Affairs-RS.pdf

http://biotransform.eu/wp-content/uploads/2021/02/Degrade-or-upgrade-our-living-environment-RS.pdf

http://biotransform.eu/wp-content/uploads/2015/03/Bioenergy-in-Renewable-Organic-Material-to-electricity-heat-cooling-BAS-BIO-20200204-RS.pdf