

## Contribution to the online Conference on "*Financing the Renovation Wave*"

27/01/2021: 14:00 - 17:00 Green Deal; Renewable energy; EU energy policy; Environment policy

*A greeting to you all from Grandma who devoted her life to plant nutrition issues to prevent starvation. You are welcome to visit my homepage. /Růžena*

Renovation of the European building stock is a unique opportunity to renovate and **build new local areas with microgrids for electricity, heat and cooling** that are **adapted to the circular bioeconomy**. Unfortunately, it is very frightening that only few states, regions and municipalities have plans to implement a circular bioeconomy - the most important economy that leads to increased resource management and to improvements in the lives of all people.

With a few facts, I want to start a factual debate on how future initiatives should guarantee the most important things for people: **clean air, clean water, fertile soil, and safe food**.

The goal for politicians is to order from the construction sector

- that the management of **food and toilet waste can be carried out by the residents in a simple and hygienic way**
- to adapt city districts, villages and all buildings in rural areas to **smart grids**.

Visionary proposals for **local sustainable and smart biogas plants** are available.

### Facts

With today's expensive and polluting systems for waste and sewage, less than 2% of plant nutrients return to cultivated land. This means that 98% of the plant nutrients are costly losses. Example:

- a) During **waste incineration**, substances are formed that **pollute air, water, soil, and crops**.
- b) In expensive **wastewater treatment plants**, nitrogen is sent to the air with energy-intensive methods.

Nitrogen is needed to fertilize cultivated soils. Nowadays mineral nitrogen fertilizers are produced with an energy-intensive method from nitrogen in the air.

In both cases, citizens pay for unsustainable methods.

Reactive nitrogen has already crossed the planet's boundaries.

**Sustainable alternative is SBRS concept** (Sustainable Biological Recycling System) connected to microgrids.

First and foremost, the large and costly contaminants that are losses of bioenergy and of the vital chemical elements that occur during the collection and transport of renewable organic material in the waste must be prevented.

**Food and toilet waste will be collected hygienically** with the help of equipment that encapsulates each portion in foil of biomaterial. It prevents emissions that are losses of bioenergy and plant nutrients and at the same time prevents the emergence of bioaerosols and other air pollutants. (*When each cucumber can be encapsulated, valuable waste can too!*) No water is polluted, no chemicals are needed to clean the toilet, no rats in the sewer system, no unhygienic working environment in the sewer system and biogas plants.

**Encapsulated food and toilet waste must be delivered to local high-tech smart biogas plants** OSAD (Optimum Solids Anaerobic Digestion). During pre-treatment, food and toilet waste are mixed with ground drier organic waste materials to achieve a water content of around 70%.

- 1) **Biogas** to be converted into **electricity** (approx. 30%) and **heat** (approx. 65%). The heat can be converted to **cooling** if needed.

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- 2) **Biofertilizer** that maintains and improves **soil fertility** and thus can increase the production of plant biomass for safe food and other products.
- 3) **Wastewater** without food and toilet waste is treated in **local biological treatment plants**. Purified water must be used locally for irrigation, fountains, water games, etc.

**Expected results** - se the picture below.

### 1) Bioenergy

From 1 ton of substrate consisting of food and toilet waste from 500 inhabitants mixed with drier organic waste types, the bioenergy in biogas can be about 1 000 kWh and converted by trigeneration into

- a) 30% electricity, an electric car can drive more than 2 000 km
- b) 65% of biogas energy remains as heat and can be used for heating in winter or converted to cooling during summer.

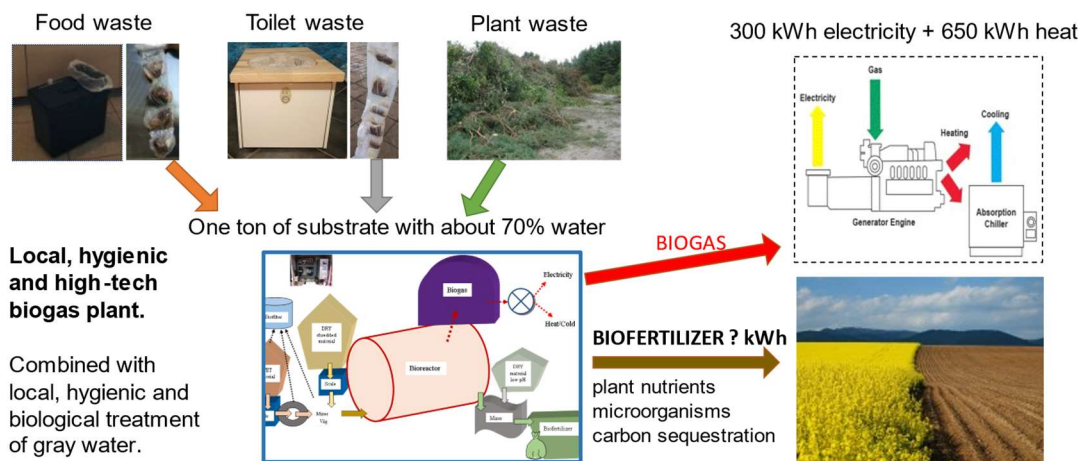
### 2) Biofertilizers

Contain all plant nutrients, increase biodiversity in cultivated soils, carbon sequestration and soil fertility. It is important for the environment, health, and climate.

### 3) Water

Lower consumption, reduced pollution, no medicines in water, less other chemicals in water, lower costs for purification sustainable use of waterresources.

## "Sustainable Biological Recycling System" SBRsconcept



Political decisions formulate a framework for transition to a knowledge -based sustainable society.

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SBRS positively affects 9 of the 17 SDGs directly and the others indirectly.

In my opinion, the biggest obstacle to achieving knowledge-based sustainable societies and to increase energy efficiency is the lack of knowledge among politicians and other decision-makers about natural laws in biology, physics and chemistry which are the basis of the circular bioeconomy and which secure life on earth.

The Green Deal must complement "Farm to Fork Strategy" with "**From Photosynthesis-to-Photosynthesis Strategy**" - for a fair, healthy and environmentally friendly food system based on **SUSTAINABLE CIRCULAR BIOECONOMY**.