

## 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 in order to prevent starvation. You are welcome to visit my homepage. /Rūžena*

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 few states, regions and municipalities have plans to implement a circular economy - 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 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 soil and therefore 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

Concept SBRS (**Sustainable Biological Recycling System**) connected to microgrid.

**Food and toilet waste are 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 are 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

**Bioenergy:** When produced from 1 ton of substrate consisting of food and toilet waste from 500 inhabitants mixed with drier organic waste types, the biogas energy is converted into

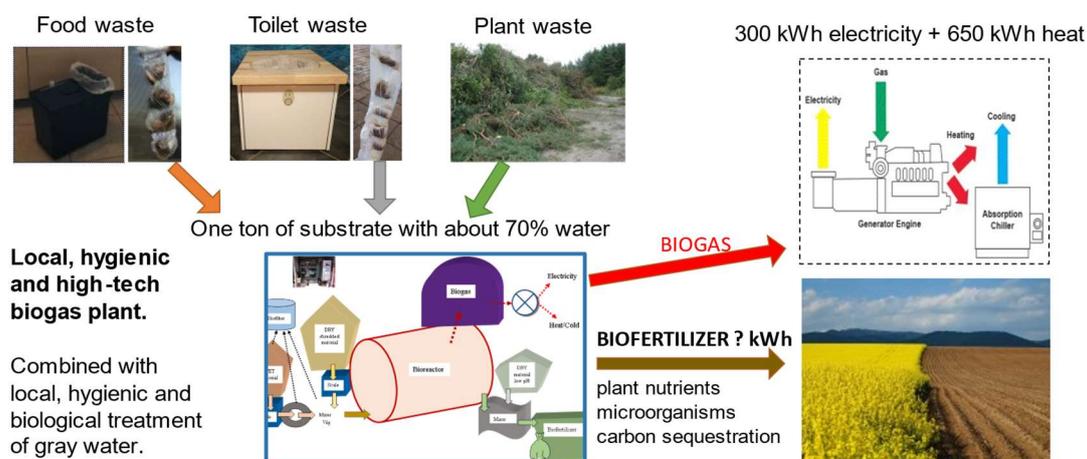
- a) electricity, an electric car can drive more than 2 000 km
- b) 65% of biogas energy remains as heat and can be used for heating or converted to cooling.

See the picture below.

**Biofertilizers:** Reuse of plant nutrients, increased biodiversity in cultivated soils, carbon sequestration increases soil fertility which is very important for the environment, health and climate.

**Water:** Reduced water pollution, no medicines in water, less other chemicals in water.

## "Sustainable Biological Recycling System" SBRSconcept



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

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

In my opinion, the biggest obstacle to achieving knowledge-based sustainable societies and to increasing energy efficiency is the lack of knowledge among politicians and other decision-makers about natural laws that the circular bioeconomy must follow and that are necessary for life on earth.

The Green Deal must complement "Farm to Fork Strategy" with "Photosynthesis to Photosynthesis Strategy" - for a fair, healthy and environmentally friendly food system based on sustainable circular bioeconomy.