Anuarul Universității "Petre Andrei" din Iaşi
Fascicula: **Drept, Ştiințe Economice, Ştiințe Politice**
ISSN: 2248-1079 | ISSN-L: 2601-7008
Covered in EconPapers, RePEc, CEEOL, ErihPlus, INDEX COPERNICUS, CrossRef, CrossCheck, Google Scholar, WorldCat, KVK, SOCIONET

2022, Issue 30, pages: 301-318 | doi: https://doi.org/10.18662/upalaw/109

Businesses Created for a Green Economy

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Abstract: *We are entering an unprecedented phase of innovation. The green growth opportunities are at the forefront and occur at a rapid pace. We work with climate-focused innovators, from pre-funded start-ups and unicorns to entrepreneurial operators.*
In order to implement the policies associated with the green economy and the sustainable development (Stiglitz, 2010), it is necessary to have, first of all, a joint effort of all countries, campaigns to raise the awareness of the importance of this phenomenon, as well as to provide timely and applicable solutions.
The green economy involves using natural resources, energy and new technologies alongside clean production methods in order to foster economic growth and create new jobs. This concept calls for the creation of new sustainable consumption and production models that do not push the ecosystem to its limits.
It is clear that the transition to a green and circular economy will benefit some groups and sectors and put pressure on others. The policy makers will need to be fair toward all parties and provide support measures to facilitate and guide the necessary socio-economic transition.

Keywords: *Circular economy, sustainable development, green products/services, high quality.*

How to cite: Vestale (Amăriucăi), O.-M., Trifu, A. (2022). Businesses created for a green economy. *Anuarul Universității "Petre Andrei" din Iaşi, Fascicula: Drept, Ştiințe Economice, Ştiințe Politice, 30*, 301-318. https://doi.org/10.18662/upalaw/109

1. Introduction

The research from literature has shown that the renewable energy is a triumph of the human development, which is constantly looking for energy sources to replace those we use today. Its use contributes to improving the air we breathe by reducing greenhouse gas emissions, by making it even cheaper. Renewable energy is derived from sources that are able to recover, such as the sun, the wind, rivers, thermal springs, tides and the biomass.

The non-renewable energy is a natural resource that cannot be reproduced, generated, cultivated or used on a scale that can sustain the rate of consumption. It will run out at some point and it will no longer be available. These resources are consumed faster than nature can provide, for example the fossil fuels (coal, oil and natural gas) or the nuclear energy (uranium).

The renewable energy is not limited to a particular geographical location and it is virtually infinite, unlike the traditional energy sources.

The renewable energy has been increasingly growing in recent years because it promises a clean energy future. Green energy is beginning to replace harmful fossil fuels in the energy sector, offering a reduction in carbon emissions or other types of pollution. The renewable energy could provide a solution to a big problem the modern world is facing: reducing the environmental contamination, which damages the quality of life on Earth and which harms the human health.

Renewable energy is unlimited and it is part of the sustainable development of people-populated areas. Green energy can also be cheaper than traditional energy.

Although specialists have drawn attention many times and to the pollution and they have conducted various studies (Stiglitz, 2010) which have shown that the waste discarded everywhere, the massive deforestation take on a very large scale, they cause great changes and they have direct and irreversible effect on the environment and implicitly on humanity (melting glaciers, very serious various weather phenomena, wildfires, excessive drought, the disappearance of various species of animals and plants, floods), solutions and implementations are urgently required to solve these serious problems.

The crises related to the coronavirus pandemic have caused the excessive consumption of energy, gas, water, and because of Russia's war with Ukraine and the fact that it has stopped the supply of energy and gas to many countries (and to our country), these have led us to focus more on this phenomenon, try to find solutions and start a series of measures toward their implementation.

The world needs to cut greenhouse gas emissions by at least a quarter before the end of this decade to achieve the carbon neutrality by 2050. The necessary progress toward such a major change will inevitably impose short-term economic costs, although they are diminished by the countless long-term benefits of the climate slowdown.

In the latest perspective of the world economy, we estimate the short-term impact of different climate change mitigation policies on production and inflation. If the right measures are implemented immediately and introduced gradually over the next eight years, the costs will be low. However, if the transition to renewable sources is delayed, the costs will be much higher.

Fig. 1 The circular economy
Romania Journal (2020)

As they are impacted by these crises, the inflation and the unemployment are also hampering countries' economic growth. However, the economic growth must be achievable, in order to emerge from this collapse by creating solid links among the development, production and the sustainable consumption. Its nature and value play an important role in supporting the economic growth in the current context, only if the importance of balance in its protection is realized. This is also where the concept of a green economy comes in, which aims at the transition to an economy closely linked to the sustainable development.

This paper *aims* to highlight the importance of implementing the imposed and agreed measures and promoting the main investments and reforms needed for sustainable growth and long-term well-being; it shows the need to implement projects and investments in key digital technologies, in industry, in strengthening the risk management and the emergency response capacities to future shocks or pandemics through *the creation of biogas headquarters*.

Whereas the European Parliament has called for a future-oriented budget as soon as possible, which corresponds to the economic and political priorities to achieve the green and digital transition and to promote a fair, inclusive recovery, sustainable and with long-term effects, and argued that particular attention should be paid to the green and digital transition, which must be a key driver of recovery and the promotion of sustainable economic growth.

In order to implement the policies associated with the green economy, first of all it is necessary for all countries to joint efforts to raise awareness of the importance of this phenomenon and to provide timely and practical solutions.

This paper shows that by using the resources we have – the waste whatever its nature can achieve a beneficial outcome for everyone, create and propel new green businesses, with new areas of activity that of the green economy – renewable energy – that provide products and services that we all need.

2. Methodology

This study is based on studies conducted by various researchers and various examples of projects carried out over time, by taking into account the current situation and the need to propel green business. The management assessments of these businesses have proven to be successful over time.

This approach, combined with the research on specific literature and other experiences, sets the framework for highlighting the functioning of these business models and it highlights the increase in the possible outcomes following the implementation of these businesses.

We have tried, on the basis of on examples already in place in the field of green economy, to summarize a possible way forward for the green economy, the circular economy, to be efficient and reliable.

3. Why choose Green Energy-case study

The European Parliament encourages the stimulation of investments in self-generation and self-consumption of renewable energy. In June 2016, the European Parliament adopted a resolution on the progress report on renewable energy, inviting the European Commission to present a more ambitious climate and energy package for 2030, to increase the EU renewable energy target to 30% and to be implemented through individual national targets.

The green energy is electricity produced through sustainable means with a low environmental impact. It uses natural physical processes on Earth without using resources such as coal or fossil fuels. The current obtained from solar and wind power plants are among the best-known examples. Besides these, there are other types of installations using certain natural phenomena, such as:

- *The geothermal power plants* use geothermal energy, obtained from the heat inside the Earth.
- *The hydroelectric power plants* use hydraulic force, i.e. the ability of water to create mechanical work as a result of their flow;
- *The tidal power plants* use energy produced by ocean waves and currents.

These have advantages, but also disadvantages, from different viewpoints. The pluses are obvious, reducing the impact on non-renewable resources and reducing the degree of air pollution.

The renewable energies (also known as "green energies") are considered in practice to be energies that come from sources that either regenerate themselves in a short time or which are practically inexhaustible sources. The term "renewable energy" refers to forms of energy produced by energy transfer resulting from renewable natural processes (Wikipedia, n.d.). Thus, the energy of sunlight, winds, flowing waters, biological processes and geothermal heat can be captured by humans by using various processes. The non-renewable energy sources include the nuclear energy as well as the energy generated by burning fossil fuels such as oil, coal and natural gas.

These resources are obviously limited to the existence of the respective deposits and they are generally considered (see the theory of the

Romanian academician Ludovic Mrazec of inorganic formation of crude oil and natural gas) to be non-renewable.

The renewable energy sources include the following:

- ✓ wind energy, commonly expressed - wind energy;
- ✓ solar energy;
- ✓ water energy;
  - o hydraulic energy, flowing water energy;
  - o tidal energy, the flow/reflux energy of seas and oceans;
  - o osmotic potential energy;
- ✓ geothermal energy, the energy gained from the deep heat of the Earth;
- ✓ biomass energy: biodiesel, bioethanol, biogas.

All these forms of energy are technically usable and they can serve to generate electricity, to produce hot water and to produce gas. Nowadays they are unequally valued, but there is a certain and concrete trend that shows that there is a persistent investment in this relatively new energy branch.

The green economy involves the using of natural resources, energy and new technologies alongside clean production methods to foster growth and create new jobs. This concept calls for the creation of new sustainable consumption and production models that do not push the ecosystem to its limits.

In order to promote the exploitation of renewable energy resources, Romania has created a legislative framework and it is highlighted by the Government Decision 1535 "*Strategy for the exploitation of renewable energy resources*" which was adopted in 2003. Since then, several government decisions with various amendments have led to the creation of Law 220/2008, which in turn has been updated. In July 2018, the law took the form that still applies.

In the legislative framework, the concept of prosumer is defined (the prosumer is the final customer who owns electricity generation plants, including cogeneration, whose specific activity is not electricity production. It is the person who consumes, can store and sell renewable electricity produced in his building, including an apartment building, a residential area, a shared service, commercial or industrial site) and sets out responsibilities in the field. Also, the National Energy Regulatory Authority (ANRE) issued an order for the approval of the technical conditions for connection to public interest electrical networks for prosumers with active power injection in the network (less than 27 kW installed power).

ANRE has thus issued a series of regulations for customers who want energy from renewable sources, although they have a low consumption, i.e. less than 27 kW per consumption site. A prosumer can use, store and sell renewable electricity produced in his building.

The economic measures created by Dinu (2011) are based on sustainable development which appears to be the solution to overcome environmental, economic and social problems, while also addressing crisis management and its effects. In this respect, action is needed by using appropriate policies that create conditions for supporting economic growth.

Sustainable development (Dinu, 2006) requires dynamism, continuous change, adaptation and research, all of which are closely linked to the conservation of the environment and the proper use of natural resources (European Commission, 2020).

If you have ever wondered what can be done from organic materials resulting from sanitation work, we give you the answer in what follows.

Offering sustainable services or using environmentally friendly products are just some of the business ideas that can turn a regular business into a sustainable one.

Therefore, we will exemplify some of the sustainable green businesses that have brought to the fore both the reuse of organic, vegetal waste, waste recycling and especially the transition to the green economy, which have a real success, combine classic methods and processes, but which comply with current conditions and regulations.

Organic catering company

A catering business with only organic products, cooked in a sustainable way, could prove extremely profitable.

Also, composting debris and using local products can be beneficial strategic ideas.

Ecological beauty salon

Organic or vegan beauty products are becoming increasingly popular.

Clothing made of recycled materials

Reused organic cotton, textile debris or even plastic bottles can be a raw material for the fashion industry. H&M, Nike or Patagonia are just a few of the brands that saw the opportunity and created clothing lines or footwear from recycled materials.

Setting up green ecological spaces

Pacifier, the location of drought-resistant plants and trees, or the use of permaculture principles are ideas that can save water, energy, and money.

Cleaning of ventilation systems

The efficiency of ventilation systems or air conditioners is reduced with the accumulation of dust and other particles in their internal mechanisms. Cleaning this equipment is an investment worth thinking about because dirty appliances are not only a danger to the environment and to consumers' pockets, but also to their health.

Organic handmade products

Soap, cosmetics or cleaning products are just some of the consumables that can be obtained using organic ingredients.

Sustainability consultancy

The concern to reduce their own environmental impact leads to providing consulting services to companies or individuals, teaching them what to do to reduce their energy consumption or implement a waste management program.

WEEE collection services

Typically, the population selectively collects plastic, paper, metal and glass waste. However, when it comes to waste electrical and electronic equipment, the problem is complicated.

The idea of providing collection services for companies that are required to separately collect this waste, or even for individuals, is not a new one. However, the collection mode can be the differentiator. The use of electric cars for transport or even cargo bikes can be a novel aspect of the branding strategy.

Marketing of organic fruits and vegetables

Even though their production has a higher price than traditional fruits and vegetables, organic food is more appreciated by consumers with a high purchasing power.

Microfarm with aromatic and medicinal plants

Eco-friendly cultivation of aromatic and medicinal plants can be a profitable business with an average initial investment.

Green cleaning services

Household cleaning products often contain chemicals that pollute household water and can pose a health risk factor for those who come into contact with cleaned surfaces. There are also organic alternatives.

Use of old furniture

Many used furniture pieces are thrown away by consumers. For a person with a little more imagination, however, this waste can be a valuable resource. Old chairs can be unfolded, upholstered and reassembled, tables or cabinets can be repainted, and wooden debris can be rebuilt shelves or storage spaces.

COMPOSTING

Composting is the most used and handy solution for a successful green business (Foster, 2014).

Composting wasted food

We waste more than a quarter of the food we produce. When it reaches landfills, this food pollutes the environment by decomposing it. Managed correctly, however, it can be an important resource for the agricultural industry. Turning food waste into compost is the solution, with this being brought to the fore the recirculation of products used in reuse products; Ellen Macarthur has issued and developed through her foundation a whole system of theories on this subject under the name of circular economy.

Composting organic and vegetable waste

Made as a natural, organic fertilizer, which generally contains plant and animal waste, is the generic *composting* name – Ellen Macarthur explains in detail what it is, the methods and processes involved in composting (n.d.).

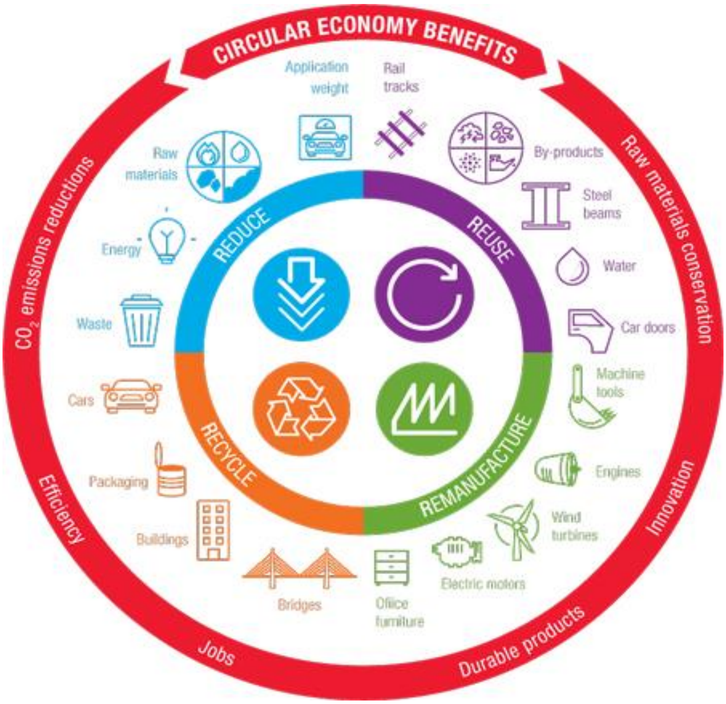

Fig. 2 Circular economy benefits
UNCTAD (n.d.)

Compost is made up of decomposed debris with the help of bacteria, and the result is a brittle and dry mixture, rich in nutrients and dark in color. Compost is environmentally friendly, non-rained and is used successfully in soil fertilization and biogas production.

An example used by many is compost for flower soil, lawn or vegetable garden that can be obtained by mixing compost with other components such as peat, clay or sand, tree bark residues that mixed together are nutrients for plants: coffee grounds, egg shells, etc.

Microorganisms in the process of compost consume oxygen and organic matter (Stoffella & Kahn, 2000). In the composting process, heat and carbon dioxide are released and water evaporates. The compost pile is made up of 50% water and carbon dioxide. To obtain humus, proper management of oxygen, nitrogen, carbon, humidity and temperature is required.

In the process of decomposition and compost, carbon and nitrogen have an important role that is formed in the cells of microorganisms and is the main source of energy. Materials that contain a lot of carbon are called brown matter.

In addition to carbon, nitrogen is a basic component of proteins, metallic acids, amino acids, and enzymes important in the growth and development of microorganisms. These organic materials are called green matter.

Oxygen is a necessary element of decompose. If there is not enough oxygen, the garbage pile will get an unpleasant smell. . Aerobic systems require a concentration of 5% oxygen, which can be obtained by turning the pile and using materials of different sizes to prevent compaction.

Humidity plays a very important role in compost formation, but temperature the size and location of compost as well as materials for compost are necessary, and the final result cannot be achieved without them (Thompson, 2011).

Compost consists of 3 parts of green matter, 1 part brown matter.

Compost is produced from: Vegetable waste from the kitchen, cardboard and paper, hay and straw, leaves, coffee grounds, eggshells, feathers, seedless weeds, mowed grass, practically from most waste.

In the compost do not put: Ash, citrus, meat, cheese, oil, bones, diseased plants, cat and dog feces, treated wood, plants or lawn that have been treated with pesticides, non-biodegrade materials such as metals, glass, plastics.

Composting methods

The composting methods of McGee (2011) are diverse and the materials used have a wide range.

Composting in the pit or ditch: Involves digging a pit or a ditch 40-50 cm deep in the place where it is intended to initiate a garden or extend it, filling with vegetal debris and covering with previously dug soil.

Composting in the container can be made in 2 types of containers: Stationary and rotating. For both containers it is necessary to periodically return the plant debris to provide oxygen to the compost pile.

Stationary containers can be made with walls made of wire fence, wooden boxes or pallets.

Composting in 3 containers system is very effective. For this method, 3 stationary containers bonded to each other are built, each of 1m3. In this system it is important to always be an empty container in order to be able to turn the pile from the others.

This is a very easy composting system to use in any garden.

Quick composting

Generally, the composting process takes between 5 and 9 months, but next, we will present a method by which you can get compost in a month.

This method is called the Berkley method because it was developed at Berkley University in California (McGee, 2011).

The procedural difference between this method and the others is that the plant remains must be prepared early, thus having the biomass necessary to activate to the maximum.

The main beneficial effects of compost are diverse: from improving plant growth, cleaning groundwater, improves soil porosity; improves water storage capacity, increases soil resistance to water erosion, to reduce plant diseases.

Why we should produce BIOGAS

In a world where more and more emphasis is being placed on finding alternatives to energy production and an attempt to abandon fossil fuels, one of the alternatives increasingly considered is **biogas production**, a sustainable, renewable and carbon neutral energy source.

As an example - 1 kW of electricity produced by biogas prevents the release of 7.000 kg of CO_2 per year. Here is a figure that shows how much we can help the planet using this alternative fuel.

The rise in energy and gas prices and consumption is pushing us to further develop the energy and gas field through a green economy, to produce our own bio-energy and biogas.

Using solar panels or wind energy to heat water or generate electricity is another example of a green business.

As the selective collection of bio-waste produced by households becomes mandatory in 2023, a new fuel source becomes available for plants producing energy using biogas. It is therefore necessary to decide what will happen to this waste. Options include composting – the cheapest option, and turning into biogas, which also allows renewable energy generation, reduces greenhouse gas emissions and creates local jobs thanks to the initial construction of the power plant and the energy distribution infrastructure, but also later, through maintenance and maintenance work.

Fossil fuels are limited resources, concentrated in few geographical areas on our planet. This creates, for countries outside these areas, a permanent and uncertain state of dependence on the import of energy resources. Most European countries are highly dependent on fossil energy imports from fossil-fuel-rich regions such as Russia and the Middle East. The development and implementation of renewable energy systems, such as biogas from origin, based on national and regional resources, will increase the sustainability and security of national energy reserves and reduce dependence on energy imports.

The best and most imperative example of converting, re-using any waste, following the methods of the circular economy: The waste used, from the garbage phase to the new product phase, is the use of waste (by compost) to transform it into biogas.

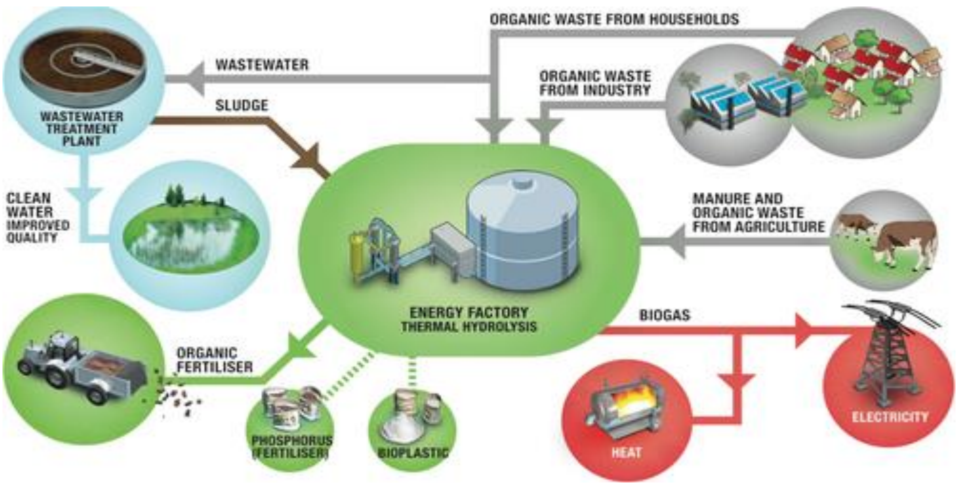

Fig. 3 The biorefinery concept
The conventional wastewater treatment plant has been remodelled to carry out the processes indicated, and many other wastewater treatment plants are following with various modifications (Billund Bio Refinery, n.d.)

In recent years, the global biogas market has grown by 20% to 30% per year. In Europe, countries such as Austria, Denmark, Germany and Sweden are among the most experienced in terms of biogas technologies and have managed to establish competitive national markets in the field. Intensive research has been carried out to develop these markets and the biogas sectors have received considerable subsidies and have also received public support. The farmers involved, biogas plant operators and investors have accumulated important knowledge, private technical information and expertise on biogas technologies. In addition to traditional raw materials, in countries such as Germany and Austria, the cultivation of energy plants for biogas production has also been initiated. Significant research efforts have been undertaken to increase the productivity and diversity of energy plants, as well as to assess their potential for biogas. New agricultural practices have been defined, with new crop rotation, interculture and combined culture systems subject to intensive research and development.

In the last years, important research has been carried out on technologies for converting raw materials into **biogas**. New types of digesters, food systems, storage facilities and a whole range of other equipment have been introduced and adapted. Both different systems in dry and wet environments are continuously improved through high-level research activities that focus both on ensuring the stability of operations and processes, on performance, and on finding new combinations of substrates. The use of biogas for combined heat and electricity production has become the standard application for most biogas projects in Europe. In countries such as Sweden, the Netherlands and Germany, improved biogas has also been used as biofuel for transport. In these countries, distribution networks have been established and improvement and bottling stations have been built. Improving biogas and powering the natural gas network is a relatively recent application, and the first biomethane gas supply facilities were carried out in Germany and Austria. The latest use of biogas is in the field of electric piles, which are already an advanced and commercially available technology, operating in countries such as Germany.

For this reason, a number of pilot projects have been implemented for the creation of biogas plants in Europe and around the world, the final results of which will be available in the coming years.

Biogas is a renewable gas produced by anaerobic microorganisms (which can multiply and live in the absence of air). It is composed mainly of *methane* (the energy source in the fuel) and *carbon dioxide*. It also contains small amounts of *nitrogen* or *hydrogen*. Contaminants in biogas include sulfur or siloxans, but they depend on the raw material introduced into the fermentation basin.

Integrated production of biofuels (biogas, bioethanol, biodiesel), food and raw materials for industry is today an important area for research as an integral part of the concept of bio-afining. Within this integrated concept, biogas provides the energy needed for processing, for the production of liquid biofuel, while the resulting by-products are used as raw materials. The integrated biorafining process is considered to offer a number of advantages in terms of energy efficiency, economic performance and reduction of gas emissions.

Biogas is obtained by biochemical, anaerobic fermentation of raw materials in a fermentator. The process takes place in four stages: Hydrolysis, acidogenesis, acetogenesis, and methanogenesis. The most important parameters are the temperature and the period of standstill of the substrate in the fermentator (hydraulic detention time). Most biogas plants operate at mesophilic temperature (35–42°C), but there may also be installations operating at a thermophilic temperature (50–60°C). The period of stay in the fermentator depends on the type of substrate used and can vary between 20 and 70 days.

Components of a biogas plant

Although there are several types of biogas plants, each plant has the following elements:

- Fermentation unit 1
- Fermentation unit 2
- The mixer
- The gas tank
- Heat unit and power plant

The installation of a biogas production plant shall also take into account the criteria for which a biogas production plant is fitted:

- Energy satisfaction of the need of one or more users.
- Ensure the full processing of locally available raw materials.
- Ensuring the processing of raw materials in an area whose scope is established on technical and economic criteria.

If the first criterion usually falls under the small or agricultural installations, the other two are mainly referring to industrial biogas production plants.

The materials needed for industrial biogas plants are provided by the food processing industry. The main materials are food waste, fat and waste from slaughterhouses. They must be mixed, separated from the unsuitable compounds, cut or diluted. However, when slaughterhouse waste is involved, there must be a higher dose of attention: It must be homogenized, but also sanitized. Often, fermented residues cannot be used as fertilizer.

Compared to other biofuels, biogas requires the lowest technological water intakes. This is important in terms of biogas energy efficiency due to the expected water crisis in many regions of the world.

4. Conclusions

Following the presentation of the advantages of re-using waste for new product formation, this article aims to bring to light the need to propel **green businesses**.

In particular, biogas formation has been shown to be the best and necessary green business model, the research already analyzed and carried out by various specialists that refer to the identification of optimal strategies for the development of biogas processes, have as final goal the increase of economic profitability. This study provides important clues as to the possibility of using various agro-industrial residues to obtain biomethane and the impact that its quality has on process stability, biodegradability of materials used or fuel gas production.

A paper under the generic name of "**green project**" that opens up new perspectives for the continuation of various researches, with the final purpose of implementing them, by building biogas plants.

From the above reports, it is quite clear that biogas production methods are the best alternatives in terms of renewable and environmentally friendly energy production, using them limits the emissions of carbon dioxide and methane, so harmful to the health of the planet, and it significantly reduces the amount of waste, one that grows exponentially from year to year. As we can easily see, biogas production is one of the paths to a safer and healthier future for our planet, the best and most profitable green business of the future.

The field of biogas is vast, offering the possibility of a multitude of original approaches. This field, of green energy, of the transformation of waste into biogas, in Romania and beyond, can offer huge opportunities for economic growth, to add the number of specialists in the field, the interest granted to biogas by the legislative structures and the notoriety at international level.

All this leads to the awareness of the increased potential of the implementation of biogas technologies in our country, and respectively, to the attraction of funds and investments, representing a way of supporting locally reliable technologies for the production of renewable energy and sustainable management of organic waste, with important social, energy and environmental benefits.

Implementing green energy projects by building biogas plants brings many benefits:

The fight against global warming, which is one of the main priorities of European energy and environment policies; the European directives strongly call for renewable energy production, emission reduction and sustainable waste management and want Member States to implement appropriate measures to achieve them. The production and use of **biogas** has the potential to meet all these directives simultaneously.

One of the main advantages of biogas production is the ability to transform waste into valuable resources by using it as raw materials for the entire biogas transformation process. Many European countries face huge problems associated with overproduction of organic waste from industry, agriculture, and household activities.

Biogas production is a very good way to meet the increasingly restrictive national and European regulations in this area and to use organic waste for energy production, followed by recycling it as fertilizers. Biogas technologies help to reduce the volume of waste as well as the costs of disposal.

Biogas production through specific processes also reduces methane (CH4) and nitrous oxide (N2O) emissions resulting from the storage and use of animal manure as fertilizer. The greenhouse effect potential of methane is 21 times higher and that of nitrous oxide is 296 times higher than that of carbon dioxide. Therefore, the use of biogas instead of fossil fuels for energy production and transport reduces CO2, CH4 and N2O emissions, thereby helping to reduce global warming.

As we have previously reported, the development of a national biogas sector stimulates the creation of new enterprises with significant economic potential, which will increase incomes in rural areas and create new jobs. Compared to the use of imported fossil fuels, the production of biogas by related technology requires a much larger workforce for the production process, for the collection and transport of the necessary raw materials, the manufacture of technical equipment, the execution of construction works and the exploitation of biogas factories.

Heating systems used in rural areas with solid fuels (wood, coal) or liquid fuels (natural gas, LPG) can be successfully replaced with efficient heating systems using heat obtained from renewable energy produced by biogas plants. Local heating systems are economically efficient for villages with 500-1500 inhabitants and become cheaper if houses are concentrated on small areas or there are buildings with several apartments, but can operate even with 10 connected households.

Understanding the business model for **biogas** plants will help authorities to obtain and use the funds obtained in an efficient way so that private investors have an increased interest in such projects. The resulting renewable energy can be sold to consumers or converted into electricity, heat and gas.

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