Digester to SDG 6.1

Digester - MBGC toward SDGs/UN 6.1
(Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all).

Summary

Sustainable Development Goals (SDGs): A Deep Dive into Target X and the Role of JWT Patent GREEN

Analysis of SDG 6 and Target 1:

SDG 6: Ensure Access to Water and Sanitation for All

Overview:

By 2030, the UN's SDG 6 aspires to guarantee that everyone has access to clean water and appropriate sanitation. This objective addresses important problems with inadequate sanitation systems, pollution, a lack of hygiene practises, and a lack of access to clean water. It is important for enabling sustainable development, disease prevention, and health promotion.

Specific Objectives:

Target 1:

By 2030, ensure that everyone has fair access to clean, inexpensive drinking water.

Explanation: This goal is to guarantee that everyone has access to inexpensive, clean drinking water, regardless of where they live or their financial situation. This is crucial for increasing wellness, lowering waterborne illnesses, and improving general health. In order to reach this goal, infrastructure must be improved, water purification facilities must be funded, and accessibility difficulties in off-the-grid or underserved communities must be resolved.

Target 2:

By 2030, all people will have access to sufficient and equitable sanitation and hygiene, and open defecation will be eradicated. Special attention will be given to the needs of women, girls, and people in vulnerable situations.

Reason: This aim emphasizes the value of sanitation and hygiene in maintaining the health and welfare of the general public. It demands that sufficient restrooms be made available and that good hygiene habits be encouraged. It also attempts to put an end to open defecation, which is not only unhygienic but also poses serious health hazards. The needs of vulnerable groups, such as women, girls, and those who are marginalized, are given special consideration.

Target 3:

Improve water quality by halving the share of untreated wastewater, stopping dumping, and minimizing the release of dangerous chemicals and materials by 2030. Also, significantly increase recycling and safe reuse internationally.

Explanation: By protecting water bodies from contamination and toxic substances, this target aims to maintain their safety and suitability for human consumption as well as other uses. It asks for minimizing the emission of dangerous substances and lowering pollution from both home and industrial sources. The objective also stresses how crucial it is to clean wastewater before releasing it back into the environment. In order to manage water resources sustainably, recycling and safe reuse of water are essential.

Target 4:

By 2030, significantly fewer people will be affected by water scarcity as a result of a significant increase in water use efficiency across all sectors, sustainable freshwater withdrawals, and supplies.

Explanation: This aim is concerned with effective and long-term water management. In order to ensure that withdrawals do not exceed the natural replenishment rate, it tries to maximize the use of water resources across a

variety of sectors, including homes, industry, and agriculture. This is crucial for resolving water scarcity, especially in areas with a high demand for water and limited supply. We can reduce water stress and enhance long-term water security by increasing water usage sustainability and efficiency.

Importance in Global Sustainability Efforts:

Relationships with Other SDGs:

Public health (SDG 3): Having access to sanitary facilities and clean water is essential. Waterborne infections spread because of contaminated water sources and poor sanitation. Achieving SDG 6 contributes to disease prevention and the larger objective of improving health and wellbeing.

Education (SDG 4): Access to sanitary facilities in schools, including clean water, is essential to fostering a positive learning environment. It guarantees that students, particularly girls, can attend class on a regular basis without being interrupted by water-related problems. This supports the objective of inclusive and top-notch education for everyone.

Poverty Eradication (SDG 1): Having adequate access to sanitary facilities and clean water is crucial for reducing

poverty. Better cleanliness and sanitation practises improve health outcomes and lower household healthcare expenses.

Health and Productivity:

Access to clean water and sanitary facilities greatly lowers mortality rates, especially for young children who are most susceptible to waterborne illnesses. Having access to clean water and good sanitation directly improves public health outcomes.

Enhanced Productivity: Consistent access to sanitary facilities and clean water promotes productivity gains in a variety of industries. For instance, in agriculture, having access to water for irrigation increases crop yields, promoting both economic stability and food security.

Improved Livelihoods: People may work in communities with appropriate water and sanitation without having to worry about contracting waterborne diseases. Better economic prospects and general wellbeing follow from this.

Environmental Conservation and Sustainable Economic Activities:

Water Scarcity Mitigation: Sustainable withdrawals and effective water usage assist alleviate water scarcity, a

problem that is becoming more and more of a problem in many areas. Responsibly managing water resources enables us to maintain ecosystems that depend on it.

Water contamination can be decreased through proper sanitation and wastewater treatment. By protecting biodiversity and defending aquatic ecosystems, this promotes the long-term viability of the fishing industry and other water-dependent businesses.

Promoting Sustainable Practises: The adoption of cleaner, more sustainable manufacturing techniques by industries is made possible by access to clean water. For instance, businesses can use water recycling and conservation strategies to lessen their influence on the environment.

Target 1: Achieving Universal Access to Safe and Affordable Drinking Water

Specific Aims:

Ensure everyone, regardless of location or economic status, has access to safe and reasonably priced drinking water.

Eliminate disparities in water access based on socio-economic factors or geographical location.

Key Performance Indicators:

- ✓ Percentage of Population with Access to Safe Drinking Water: This statistic shows what percentage of people have access to water that is safe to drink.
- ✓ Drinking Water Affordability: This indicator evaluates whether the price of acquiring safe drinking water is affordable for all socioeconomic categories without placing a financial strain on them.
- ✓ Assessing the consistency of access to clean drinking water across a range of demographics, such as economic levels, gender, and geographic location, is known as equity in access.
- ✓ Percentage Reduction in Waterborne Diseases: Tracking the decline in illnesses brought on by tainted water sources is a crucial sign of better access to clean water.
- ✓ Investment in Water Infrastructure: This gauges how much money organizations and governments have set aside for the construction and upkeep of water infrastructure.

In order to guarantee that everyone, regardless of condition, has access to one of the most fundamental and necessary elements for life - safe and inexpensive drinking water - achieving Target 1 under SDG 6 is crucial. In addition to advancing health and wellbeing, this also creates the conditions for global sustainable development.

Relevance of JWT Patent GREEN

Overview of JWT Patent Green

A ground-breaking development in the realm of resource management and sustainable energy is JWT Patent GREEN. This cutting-edge technology is at the forefront of initiatives to revolutionize how we harness and use energy while minimizing environmental effect. JWT Patent GREEN is ready to reshape the market for sustainable energy solutions by effortlessly fusing cutting-edge tech with a dedication to environmental responsibility.

Alignment with SDG 6

Water-Efficient Energy Generation: Throughout its energy generation process, JWT Patent GREEN uses cutting-edge technology that gives water conservation first priority. Traditional energy production techniques frequently use large volumes of water, which may put stress on nearby water supplies. JWT Patent GREEN reduces water use while creating sustainable energy by implementing water-efficient practises. This not only lessens the demand on water resources but also encourages an energy production strategy that is more responsible.

Pollution Reduction and Ecosystem Protection: The dedication to reducing pollution and leaving as little of an environmental footprint as possible is a crucial component of JWT Patent GREEN's design. The method dramatically lowers the release of dangerous pollutants into nearby ecosystems by adopting cutting-edge filtration and waste management technologies. This proactive strategy contributes to the protection of aquatic ecosystems and their delicate conditions**,**closely supporting SDG 6's preservation objectives.

Alignment with Target 1:

Resource Synergy:JWT Patent GREEN excels at utilizing state-of-the-art resource management strategies. It makes the most efficient and sustainable use of water resources possible during the energy generation process. JWT Patent GREEN maximizes the advantages gained from the resources at its disposal by combining multiple technologies and processes. This contributes directly to the realization of universal access to safe and affordable drinking water by ensuring responsible use of water resources while also increasing energy output.

Reduced Environmental Impact:JWT Patent GREEN raises the bar for minimizing environmental harm by putting eco-friendly practises into practise. The technology directly serves the ultimate objective of

supplying safe and clean drinking water to all communities by utilizing sustainable energy generating techniques and minimizing the overall environmental impact of its operations. This dedication emphasizes accessibility and environmental responsibility while transcendinggeographical and financial constraints.

Fundamentally, JWT Patent GREEN's technology advancements signify a significant step forward in fulfilling the goals listed in SDG 6. This ground-breaking technology plays a critical role in advancing global sustainability efforts, particularly in ensuring universal access to safe and inexpensive drinking water, by prioritizing water conservation, reducing pollution, and optimizing resource consumption.

Socio-Economic Impact of JWT Patent GREEN

Potential Social Impacts:

Creating Jobs: The number of job prospects in Indonesia could rise significantly if JWT Patent GREEN is adopted. A competent workforce would be needed to develop and maintain such cutting-edge technology, which might result in the creation of jobs in engineering, maintenance, and operations. Additionally, as the technology takes off, there can be a boom in demand for related services, supporting the local labour market even more.

Empowering the community:JWT Patent GREEN's launch may give local communities more authority in a number of ways. For instance, training courses might be developed to give people the knowledge and abilities need to use this technology. Communities may become more self-sufficient in supplying their own energy needs, reducing reliance on centralized power systems, by helping to produce sustainable energy.

Improved Quality of Life: For Indonesians, access to renewable energy sources via JWT Patent GREEN can vastly improve their standard of living. Powering vital services like hospitals, schools, and companies with a

consistent and clean energy supply will have a favorable effect on economic growth, healthcare, and education. Additionally, increased access to clean water can result in better health outcomes and a greater standard of living overall through resource-efficient practises.

Economic Benefits:

Potential Revenue Streams:JWT Patent GREEN implementation may create new sources of income for Indonesia. Through the use of this technology, the nation might be able to export excess energy to its neighbors, spurring regional economic development. Additionally, there might be chances for regional companies to offer upkeep and support for the technology.

Cost reductions for companies and industries: Indonesian industries, especially those that require a lot of energy, stand to gain a lot from JWT Patent GREEN. The technology's focus on resource efficiency can result in significant water and energy usage cost savings. Businesses may become more lucrative and competitive as a result in the long run.

Less reliance on fossil fuels: By switching to JWT Patent GREEN sustainable energy generation, Indonesia can lessen its dependency on pricey fossil fuel imports. This not only increases energy security but also lessens the

negative economic effects of fluctuating international oil prices.

Savings on environmental costs: By lowering the negative effects of conventional energy generation, such as air and water pollution, the implementation of JWT Patent GREEN reduces environmental costs. The reduction of these expenses results in a more resilient economic structure.

Importance of MRV Systems for JWT Patent GREEN Implementation

Monitoring, Reporting, and Verification (MRV) systems must be well-established in order to track the social and environmental effects of implementing JWT Patent GREEN in Indonesia. This is why:

Integrity and Accountability: A standardized framework for data collection, analysis, and reporting is offered by MRV systems. As a result, it is more transparent and possible to objectively verify the actual effects of adopting JWT Patent GREEN.

Manifesting Development towards SDG 6.1: The explicit goal of SDG 6.1 is to ensure that everyone has equitable

access to clean, inexpensive drinking water. With the use of an MRV system, Indonesia is able to track its development towards this objective objectively and show how it has improved access to water.

Allocating Resources Most Effectively: Decision-makers can pinpoint success regions and problem areas through ongoing monitoring and reporting. For optimal effectiveness, this data-driven methodology enables targeted resource allocation and modifications to implementation plans.

Understanding and Development:MRV systems encourage learning by identifying what is effective and ineffective. Indonesia can uncover best practises through data analysis, enabling continuous advancement of JWT Patent GREEN implementation.

Data Collection, Reporting, and Verification Process:

Data Gathering: For MRV, data will be gathered from a variety of sources. This includes on-site measurements of energy use, water use, and quality evaluations. In order to acquire qualitative information on social impacts including job creation and community empowerment, surveys and interviews may also be done.

Reporting: Comprehensive reports will be created from the organized and gathered data. These reports will include key performance indicators (KPIs) for energy efficiency, social impacts, and water access and quality. The reports, which will be produced on a regular basis, will give an overview of development throughout time.

Verification: To guarantee the quality and dependability of the supplied data, external verification is essential. Verification evaluations may be carried out by independent auditors or specialized organizations. These outside parties will evaluate the methods used to acquire the data, check the veracity of the data, and offer an unbiased evaluation of the effects.

SDG 6.1 integration for Indonesia:

The JWT Patent GREEN implementation will be one of the communities that the MRV system primarily focuses on tracking progress towards SDG 6.1 in Indonesia, measuring access to safe and cheap drinking water for all communities.

Data gathered and published through the MRV system will provide concrete measurements of the beneficial effects of adopting JWT Patent GREEN on water accessibility and quality, serving as real evidence of Indonesia's commitment to attaining SDG 6.1.

Partnerships and Collaborations

Forming strategic partnerships with organizations, NGOs, and government agencies is pivotal in maximizing the impact of implementing JWT Patent GREEN technology for SDG 6.1 in Indonesia. Here are potential partners and how they can contribute:

Government organizations

Indonesia's Ministry of Environment and Forestry: This organization can help with environmental regulation and compliance. Working with them guarantees that the application of JWT Patent GREEN complies with local, state, and federal laws.

Ministry of Public Works and Housing, Indonesia: Indonesia's Ministry of Public Works and Housing is in charge of managing water resources. By collaborating with them, you may make it simpler to include JWT Patent GREEN into ongoing water infrastructure projects, improving water quality and accessibility.

Indonesian National Development Planning Agency (Bappenas): Bappenas can make it easier for different ministries and agencies to coordinate, ensuring that the

implementation of JWT Patent GREEN is in line with more general national development objectives.

NGOs and Environmental Groups

World Wildlife Fund (WWF) Indonesia: WWF concentrates on resource management and conservation. Working together can help further the objectives of JWT Patent GREEN by offering knowledge in environmental impact studies and conservation initiatives.

Friends of the Earth Indonesia(WALHI): WALHI may promote JWT Patent GREEN's advantages and push for its widespread adoption as an organization that advocates for the environment.

Agencies for International Development

UNDP: UNDP can offer technical know-how and financial help for the use of environmentally friendly technology like JWT Patent GREEN. Additionally, they can support programs for knowledge-sharing and capacity-building.

Asian Development Bank (ADB): With a significant presence in Indonesia, ADB can provide financial assistance, technical know-how, and policy guidance to facilitate the adoption of sustainable technologies towards SDG 6.1.

Academic establishments and research facilities

Indonesian Institute of Sciences (LIPI): To help JWT Patent GREEN be implemented as efficiently as possible, LIPI can provide research and development expertise. They can also carry out impartial evaluations of the effects of the technology.

Bandung Institute of Technology (ITB): As a top engineering school, ITB can offer technical insight and creativity to boost the efficiency of JWT Patent GREEN.

Associations in the private sector and industry

Indonesian Chamber of Commerce and Industry (KADIN): KADIN is able to encourage private sector participation and investment in the application of JWT Patent GREEN, which may result in industry acceptance of the technology.

Renewable Energy Companies: Partnerships with renewable energy firms can make it easier to integrate JWT Patent GREEN with current energy infrastructure, maximizing energy output and resource efficiency.

The implementation of JWT Patent GREEN for SDG 6.1 in Indonesia can gain from a variety of skills, resources, and networks by forming collaborations with these organizations, NGOs, and governmental bodies. The

effectiveness and reach of the technology are increased through this cooperative strategy, ultimately assisting in the accomplishment of universal access to sustainable water.

Community Participation and Empowerment

Involving local people in water and sanitation decision-making is essential for attaining sustainable results, especially when using technologies like Mini Bio Gas Continuous (MBGC) to implement SDG 6.1. This is why it's so important to empower and involve the community:

Contextual Knowledge: Local communities are incredibly knowledgeable about their own distinct environmental and socioeconomic difficulties, as well as their own particular water and sanitation demands. Engaging them guarantees that solutions are adapted to the local environment, increasing their effectiveness and sustainability.

Responsibility and ownership: Communities acquire ownership of the adopted solutions when they actively engage in decision-making. This sense of accountability promotes greater infrastructure upkeep and long-term viability, lowering the possibility of abuse or neglect.

Cultural Awareness: Community members' water and sanitation habits are frequently influenced by cultural customs and beliefs. By include them in the decision-making process, you can guarantee that your solutions will take into account these cultural quirks and be productive as well as respectful.

Enhancing capabilities and developing skills: Participating in communities gives people the knowledge and abilities to manage water and sanitization systems. As a result, they are not only equipped to actively engage in decision-making but also to assume leadership positions in maintaining the solutions that have been put into place.

Social Inclusion and Equity: Because local communities are diverse, some groups could have more difficulty getting access to sanitary facilities and clean water. Participation in decision-making processes enables the eradication of these inequalities and guarantees that all parties are included and that no one is left out of the solution.

Improved Project Support and Acceptance: Communities are more likely to support and advocate for the implementation of initiatives like MBGC when they are actively involved in decision-making. To overcome any potential opposition or doubt, it is essential to have this grassroots backing.

Ability to Adapt to Changing Conditions: Local communities are the first to notice changes in the environment, demographic patterns, or economic variables that could affect the needs for water and sanitization. Their participation enables flexible and adaptable strategies that can change in response to changing conditions.

Sustainability and resilience over the long term: Communities that have more power are better able to overcome obstacles, whether they be social, economic, or environmental. This adaptability ensures that water and sanitation systems are long-lasting and continue to meet changing needs.

We utilize the knowledge of local communities by including them in decision-making procedures pertaining to water and sanitation, but we also promote a sense of ownership, empowerment, and group responsibility. This cooperative strategy lays a solid platform for the effective application of technologies like MBGC, which is in line with the goals of SDG 6.1 and produces sustainable results for all.

Long-term Sustainability and Scalability

The adaptability, regular maintenance, knowledge sharing, sustainable funding, scalability, and regulatory compliance are key components of JWT Patent GREEN for SDG 6.1 in Indonesia's long-term survival. Continuous research and development, reliable upkeep, local capacity training, sustainable finance methods, repeatable frameworks, and adherence to changing legislation are essential for ensuring its continuous success. Together, these actions support the sustainability of JWT Patent GREEN and its potential for expanded use in comparable circumstances around the world.

Public Acceptance and Perception

In particular for reaching SDG 6.1 in Indonesia, public attitudes and views of cutting-edge technologies as JWT Patent GREEN are crucial to their successful implementation. Forging public acceptance and trust requires an understanding of these perspectives. Key ideas and tactics are as follows:

Key Considerations

Public Education and Awareness: Many people may not be aware of cutting-edge technology like JWT Patent GREEN. It is essential to provide accurate and understandable information on its advantages, features, and favorable environmental effects.

Cultural Sensitivity: It's important to comprehend and respect regional customs, traditions, and values. Adapting communication techniques to cultural norms can promote acceptance and trust.

Accessibility and affordability: It is crucial to guarantee that the advantages of JWT Patent GREEN are affordable and available to a wide range of people, including low-income communities. Affordability worries can be reduced by proving cost-effectiveness and long-term savings.

Environmental Literacy: Increasing public awareness of the need for technology like JWT Patent GREEN can be done by promoting environmental education and literacy. Through educational initiatives, workshops, and community involvement programs, this can be accomplished.

Engagement and Consultation: Engaging the public in the decision-making process through consultation and engagement. Incorporate their suggestions, concerns, and

feedback into the implementation strategy. As a result, communities are given more control and feel like they own the technology.

Building Trust and Acceptance Strategies

Community Outreach & Engagement: To enlighten communities about JWT Patent GREEN, hold talks, seminars, and open forums. Encourage open discussion to clarify misunderstandings and answer questions.

Demonstration Projects: Pilot initiatives should be carried out in communities as demonstrations of the JWT Patent GREEN's practical advantages. Permit locals to witness directly how technology enhances water quality and accessibility.

Collaborations with Respected Local Leaders, Influencers, and Community Organizations: Work with reputable local leaders, influencers, and community organizations to serve as advocates for JWT Patent GREEN. Their support can greatly increase public confidence.

Transparency in Communication: Give clear, accurate information about the technology, its limits, and the results that can be expected. Do not overpromise and be honest about any difficulties.

Showcase Success Stories: Highlight successful applications of JWT Patent GREEN in other areas or nations by highlighting success stories. To demonstrate its beneficial impact on communities, present case studies and testimonies.

Long-Term Commitment to Sustainability: Go beyond merely installing the technology to show a long-term commitment to environmental sustainability. Participate in ongoing community projects and programs to demonstrate the organization's commitment to transformation.

Monitoring and Reporting: Implement a transparent Monitoring, Reporting, and Verification (MRV) system to keep tabs on JWT Patent GREEN's effects on the environment and society. Publicize progress updates on a regular basis to uphold accountability.

By employing these strategies and considering the unique cultural and socioeconomic context of Indonesia, stakeholders can work towards building public trust and acceptance for technologies like JWT Patent GREEN, ultimately advancing the achievement of SDG 6.1.

Ethical Considerations

There are various ethical issues to take into account when implementing JWT Patent GREEN technology in Indonesia, including:

Inclusion and social equity

Implication: It is essential to make sure that every community, whatever of socioeconomic position or geography, has equal access to the advantages of JWT Patent GREEN. It's critical to prevent unequal access to energy and clean water resources.

Mitigation: Implement policies and programs that give marginalized and underserved groups priority. This might entail a targeted deployment in places with poor access to energy and clean water.

Accessibility and affordability

Implication: Low-income communities may have difficulties due to the cost of installing and maintaining JWT Patent GREEN. In order to prevent excluding vulnerable communities, affordability must be guaranteed.

Mitigation: To make the technology available to a wider range of populations, take into account offering subsidies, grants, or financing options. Additionally, look for collaborations with NGOs or governmental organizations for financial assistance.

Cultural Awareness

Implication: In order to avoid cultural insensitivity or potential problems with the introduction of the technology, it is essential to respect and preserve local customs, traditions, and beliefs.

Mitigation: Consult with neighborhood groups early in the planning process, soliciting their opinions and involve them in the selection of plans. Implementation tactics should be modified to reflect cultural norms and values.

Conservation of the environment and its effects

Implication: JWT Patent GREEN seeks to advance environmental sustainability, yet there could be hazards to regional ecosystems or unforeseen outcomes. It's crucial to strike a balance between conservation initiatives and technological development.

Mitigation: Conduct thorough environmental impact analyses and put mitigation measures in place to lessen any potential harm. To ensure careful implementation, work with environmental groups and specialists.

Skills development and job displacement

Implication: People working in traditional energy sectors may lose their jobs as a result of the advent of cutting-

edge technologies as JWT Patent GREEN. It's crucial to take into account chances for up-skilling and retraining.

Mitigation: Implement training initiatives and vocational programs to give impacted people the knowledge and abilities they need to operate and maintain the equipment. This may encourage a more seamless transition and lessen negative economic effects.

Community involvement and approval

Implication: It is crucial to respect the independence and initiative of local communities. It might be unethical to use a technology like JWT Patent GREEN without receiving informed consent.

Mitigation: Prioritize community engagement and consultation as a form of mitigation. Throughout the implementation phase, seek consent, involve locals in decision-making, and offer chances for feedback and input.

Stakeholders should collaborate for a more responsible and inclusive deployment of JWT Patent GREEN in Indonesia by proactively addressing these ethical issues. This strategy not only protects the welfare of neighborhood communities but also lines up with the more

general objectives of social justice and environmental sustainability.

Feedback and Consultation from Experts or Stakeholders

JWT Patent GREEN must be optimized for SDG 6.1 in Indonesia based on comments and suggestions from experts, stakeholders, and potential users:

Technological Optimization: Professionals with knowledge of water management and renewable energy sources can offer advice on how to improve JWT Patent GREEN's performance in Indonesian settings.

Community Input: Engage local leaders and communities to ensure that the technology addresses their needs and concerns.

User-Friendly Design: Work with prospective users to develop an understandable and efficient design.

Environmental damage Assessment: Consult with conservationists for guidance on reducing ecological damage.

Financial Sustainability: Develop a finance strategy with the help of financial consultants to assure the long-term viability of the technology.

Regulatory Compliance: Consult with legal and political specialists to understand regional laws.

Capacity-Building Programs: Work with training authorities to assist technicians and local communities.

Inclusivity Advocates: Advocates for inclusivity should make sure that disadvantaged groups have fair access to technology.

Enhancing Monitoring and Reporting: Work with experts to improve the system for monitoring impacts.

JWT Patent GREEN can be adjusted to meet local demands and maximize its beneficial effects on water accessibility and quality by taking into account this feedback. The efficacy and durability of the project are strengthened by this cooperative approach.

Conclusion

In summation, our research highlights the crucial significance of SDG 6 and its first target, emphasizing the necessity of ensuring that everyone has access to affordable and clean drinking water. Innovative

technology adoption, like that of JWT Patent GREEN, offers Indonesia a chance to reinvent itself. Water efficiency, pollution reduction, and resource utilization are prioritized by JWT Patent GREEN, which perfectly complements SDG 6's goals. This ground-breaking technology carries significant socioeconomic possibilities in addition to environmental benefits. JWT Patent GREEN presents a route to sustainable development, from employment creation to enhanced livelihoods.

Environmental impact analysis further shows that using JWT Patent GREEN has significant advantages. Indonesia can create a more sustainable and ecologically conscious future by lowering greenhouse gas emissions, decreasing pollution, and protecting natural resources.

The adoption of JWT Patent GREEN is a ray of hope and advancement as Indonesia plots its route towards a more sustainable future. We have the chance to go above and beyond the SDG targets through joint efforts and creative solutions, leaving a legacy of environmental stewardship for future generations.

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joules water team
https://www.jwt-jwt.it/

Subject to the NDA, consultancy and appropriate industrial property rights are available;

(**INNOVATION** - Patents and Projects, with relevant BPs and StartKit Commercial Offers)

JWTeam

http://www.expotv1.com/ESCP_NUT_Team.pdf
Offers extensive support on ***Energy*** *and* ***Water Cycle,*** *verse* ***IP_S DGs /UN***

Bibliography/Conclusion

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Digester from MBGC (source) :

Patent:

MBGC , **https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2016092582** (organic waste to biogas, for urban and periurban); view1, MBGC_Plan, Hello;

Italy: GRANT

http://www.expotv1.com/LIC/MISE_0001427413_MBGC.pdf, ...mean "INDUSTRY (useful), NEW (no make before), INVENTIVE (teach some things)"

Abstract/Description - Patent:

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Full Intellectual Property

http://www.expotv1.com/ESCP_Patent.htm

Full JWTeam Service

http://www.expotv1.com/PUB/JWT_Service_EN.pdf

Summary – Applications (to SDGs)

MBGC

https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2016092582

Biogas - generate high purity raw materials from organic matrices. MBGC is dedicated to the disposal and reconversion of organic waste , both from excrement (human and animal) and from manufacturing processes (agri-food industry), as well as in many agro-zootechnical activities. Very compact system that uses only renewable energy, with high energy recovery indices and production of high quality by-products (CH4, CO2, NPKx , H2O). Excellent solution for urban areas for contrast to the disposal of wastewater and containment of interventions on its infrastructures (sewerage transport networks and purifiers), acting in a distributive /pervasive manner where the problem arises. It offers significant contrast to the load Organic contributing to the performance on " **Water cycle** ".

Project: MBGC – Mini Bio Gas Continuous

Objective : Launch a pre- assembly and testing site (procedures and manuals) for the production of MBGC tanks

Target: Prefabricated (CLS) companies, hydromechanics , financial investors, operators in the BioGas / BioMethane sector

The project aims to activate a production site, from design to assembly (pro delivery and rapid assembly), with the development of production-oriented procedures agreed with the client (based on the products available for supply) and destinations of the outputs produced. The solutions rely on standard products from the water management and prefabricated market, assembled and tested with a view to optimize linear anaerobic digestion, with selective and corrective extraction. In collaboration with internal and external laboratories, it will act as remote support for the installations in charge (EPC - Engineering , Procurement and Construction).

Summary: This is a method for anaerobic digestion and a device for its implementation. Anaerobic digestion is a biological process that breaks down organic matter in the absence of oxygen, producing biogas, fertilizer and water. Biogas is a mixture of methane, carbon dioxide and other gases that can be used as a renewable energy source. The fertilizer is composed of nitrogen, phosphorus and

potassium salts (NPKx salts) which can be used to enrich the soil or supplement supplies from specific industries. Water is the liquid fraction that can be reused or discharged after treatment.

A device to implement this method consists of a tank divided into different areas, where different phases of anaerobic digestion take place. The tank is equipped with bulkheads, pipes, pumps, heating means and gas separation means. The organic matter enters the tank through a vertical inlet pipe (in homogeneous diffusion mode) and undergoes the following phases:

1) Hydrolysis: organic matter is divided into smaller molecules by means of water and enzymes;

2) Acidogenesis : the hydrolyzed products are transformed into volatile fatty acids and other compounds by acidogenic bacteria .;

3) Acetogenesis : volatile fatty acids and other compounds are further transformed into acetic acid, hydrogen and carbon dioxide by acetogenic bacteria;

4) Methanogenesis : acetic acid, hydrogen and carbon dioxide are transformed into methane and carbon dioxide by methane genic bacteria;

The liquid mixture flows through the tank from one area to another, following a path defined by the bulkheads and pipes. Along the way, some pumps recycle some of the liquid mixture to optimize the process. In the last zone, the liquid mixture separates into different components by gravity:
a) Oleic phase: the lighter fraction which mainly contains fats and oils , is drained and brought back to the beginning;

b) Protein phase: the heavier fraction which mainly contains proteins and amino acids, not yet treated, is taken and brought to the beginning;

c) NPK salts: the solid fraction that precipitates at different levels according to their solubility and specific weight;

d) Clarified water: the clear fraction that remains after the separation of the other components is expelled by gravity and thermally pre-treated in the last part of the tank at half level;

The gases produced during the process (methane and carbon dioxide) rise towards the top of the tank, where

they separate by density and start non-specific functions. Carbon dioxide, being heavier, remains in the lower part of the space above the liquid surface, while methane, being lighter, moves towards the upper part of the space. Gases are extracted through pipes with holes that are connected to gas storage or utilization systems. The device also includes a lighting and cooling system to prevent the formation of hydrogen sulfide, a toxic gas that can result in anaerobic digestion, damaging it. Lighting stimulates photosynthesis in some bacteria that consume hydrogen sulfide in the absence of oxygen. Cooling condenses water vapor in the gas phase and returns it to the liquid phase .

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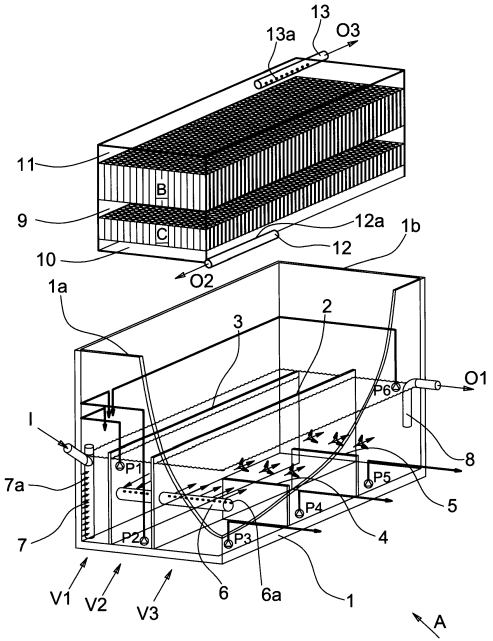
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12
O2
1a
3
2
O1
P6
I
P
P1
8
7a
P5
5
P4
4
7
P2
P3
6
6a
1
V1
V2
V3
A

Fig. 1

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(54) Title (EN): METHOD FOR ANAEROBIC DIGESTION AND DEVICE FOR IMPLEMENTING SAID METHOD

(54) Title (FR): PROCÉDÉ DE DIGESTION ANAÉROBIE ET DISPOSITIF POUR LA MISE EN ŒUVRE DUDIT PROCÉDÉ

(57) Abstract:

(EN): This invention relates to a method and to a device for the implementation of said method, to decompose and to selectively extract methane, carbon dioxide, NPK salts (nitrogen, phosphorus and potassium salts) of various titre and clarified water, from an organic matrix; said components will be the raw material for further industrial processes. The method is characterized in that it includes the following phases: • implementation of a hydrolytic phase, constituted by the fission action by means of the water, by hydration; • implementation of a acidogenesis phase generated by means of specific bacteria; •

implementation of a acetogenesis phase generated by means of specific bacteria; • implementation of a methanogenesis phase by means of specific bacteria, with a simultaneous gravimetric separation of a mainly oleic phase, lighter and of a predominantly protein phase, heavier; • gravimetric separation of solutions of said NPK salts of different titres • taking of clarified water. The device is characterized in that it comprises a basin (1) divided into various zones (V1), (V2), (V3), in each of which biological reactions occur, in accordance with the claimed method, said zones being all communicating and identified by suitable separation baffles, in particular: • a first baffle (2) extended from a first end (1a) of the basin to a second end (1b) of said basin (1), dividing it into two parts; • a second baffle (3), of height equal to said first baffle that divides one of said parts in a first zone (V1) and in a second zone (V2) extending from said first end (1a) of the basin (1) until it reaches the vicinity of said second end of the basin (1), so that said two zones (V1) and (V2) are communicating through an opening, of substantially vertical development, between the end of said second baffle (3) and the second end (1b) of the basin (1); • a plurality of baffles (4) and (5) transversely arranged to said first baffle (2) and inside a third zone (V3), delimited by said first baffle (2), said third zone (V3) being placed in communication with said second zone (V2) through a

transfer pipe (6), positioned at about half height of said first baffle (2); • two blocks (B) and (C), placed in the upper part of said basin (1) and provided by taking means (12, 12a, 13, 13a), each of said blocks (B) and (C) including a plurality of vertical pipes and being fitted to carry out a gravimetric separation of the gases that are generated during the treatment of said mixture; said baffles (2) and (3) and said transfer pipe (6), by identifying a path crossed by the liquid mixture to be treated, that runs into the beginning of said first zone (1) where it is placed an inlet pipe (7) of the liquid mixture to be treated and comes out from various points of said third zone (V3).

(FR): La présente invention concerne un procédé et un dispositif pour la mise en œuvre dudit procédé, pour décomposer et extraire sélectivement du méthane, du dioxyde de carbone, des sels de NPK (sels d'azote, de phosphore et de potassium) de titres divers et de l'eau clarifiée, à partir d'une matrice organique; lesdits composants constituant la matière première pour d'autres procédés industriels. Le procédé est caractérisé en ce qu'il comprend les phases suivantes : mise en œuvre d'une phase hydrolytique, constituée par l'action de fission au moyen de l'eau, par hydratation; mise en œuvre d'une phase d'acidogénèse au moyen de bactéries spécifiques; mise en œuvre d'une phase d'acétogénèse au moyen de

bactéries spécifiques; mise en œuvre d'une phase de méthanogénèse, au moyen de bactéries spécifiques, avec séparation gravimétrique simultanée d'une phase principalement oléique, plus légère, et d'une phase principalement protéique, plus lourde; séparation gravimétrique de solutions desdits sels de NPK de titres différents; prélèvement de l'eau clarifiée. Le dispositif se caractérise en ce qu'il comprend un bassin (1) divisé en différentes zones (V1) (V2), (V3), dans chacune desquelles ont lieu des réactions biologiques, conformément au procédé de l'invention, lesdites zones étant toutes communicantes et identifiées par des chicanes de séparation appropriées, en particulier : une première chicane (2) s'étendant d'une première extrémité (1a) du bassin jusqu'à une deuxième extrémité (1b) dudit bassin (1), le divisant en deux parties; une deuxième chicane (3), de hauteur égale à celles de ladite première chicane qui divise l'une desdites parties en une première zone (V1) et en une deuxième zone (V2) s'étendant entre ladite première extrémité (1a) du bassin (1) et le voisinage de ladite seconde extrémité du bassin (1), de sorte que lesdites deux zones (V1) et (V2) communiquent par une ouverture, de développement sensiblement vertical, entre l'extrémité de ladite deuxième chicane (3) et la seconde extrémité (1b) du bassin (1); une pluralité de chicanes (4) et (5) placées transversalement par rapport à ladite

première chicane (2) et à l'intérieur d'une troisième zone (V3), délimitée par ladite première chicane (2), ladite troisième zone (V3) étant mise en communication avec ladite deuxième zone (V2) par un tuyau de transfert (6), placé à environ la moitié de la hauteur de ladite première chicane (2); deux blocs (B) et (C), placés dans la partie supérieure dudit bassin (1) et munis de moyens de prélèvement (12, 12a, 13, 13a), chacun desdits blocs (B) et (C) comprenant une pluralité de tuyaux verticaux et étant conçu pour effectuer une séparation gravimétrique des gaz qui se dégagent pendant le traitement dudit mélange; lesdites chicanes (2) et (3) et ledit tuyau de transfert (6) délimitant un trajet emprunté par le mélange liquide à traiter, qui s'étend du début de ladite première zone (1) dans laquelle est placé un tuyau d'entrée (7) du mélange liquide à traiter et sort par différents points de ladite troisième zone (V3).

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Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv)) for the purposes of the designation of the United States of America


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