



BIOCYCLE RENEWABLES



RENEWABLE BIOGENETIC
PLANT BASED
RECYCLEING

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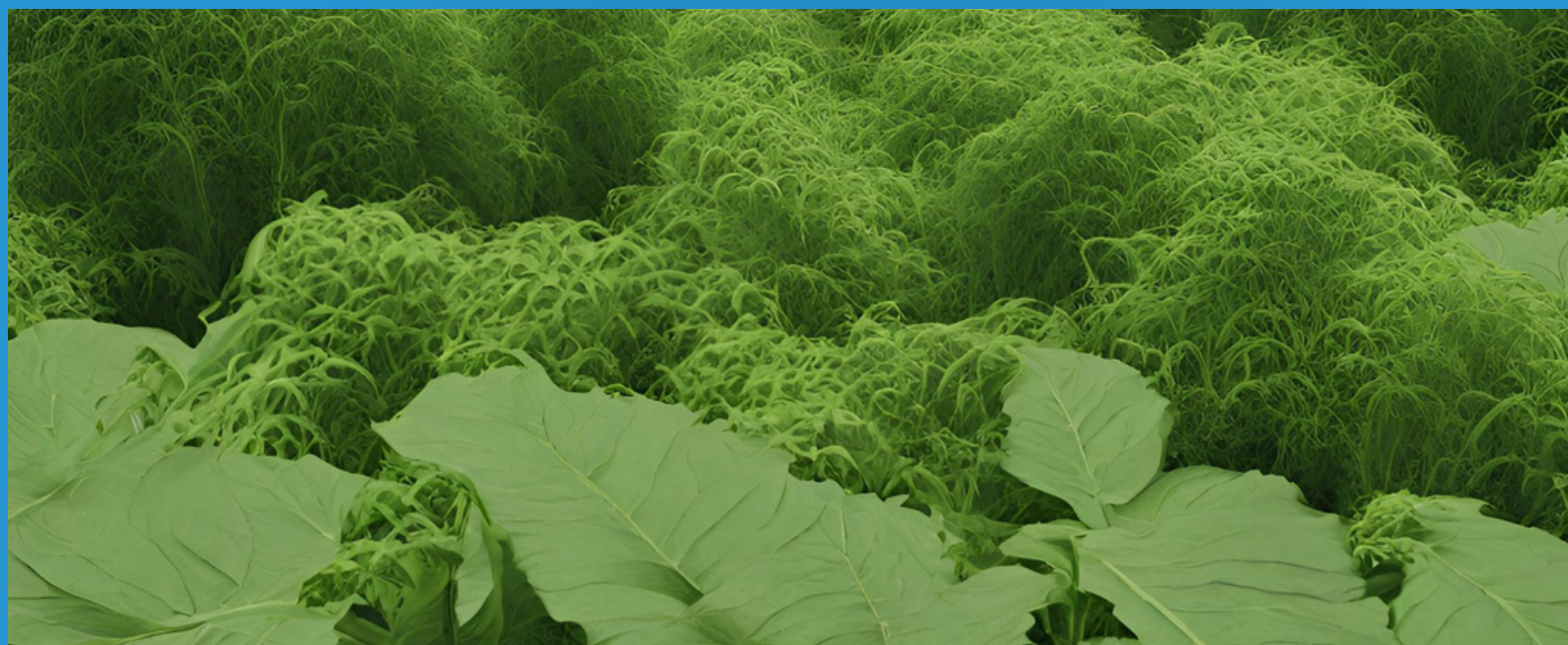
Before we start..

Imagine a world where failure is not a hindrance to your dreams. What would you aspire to be? What would you do with your life? The truth is that in this world, a single idea can make a difference and impact millions. One person's courage can spark a revolution that changes everything. Picture a world where sustainable energy is embraced by everyone and benefits all. All it takes is for one person to have the courage to be the change that they want to see in the world. Be that person who transforms the renewable energy landscape for the betterment of all; when we imagine that world, it leads us to this.

Goal Seven: Clean Energy



BioMass



What is Clean Energy?

Goal seven of the EU Clean Energy can be best summed up as ensuring that energy is affordable, secure, and sustainable. It focuses on promoting renewable energy and improving energy efficiency in order to reduce greenhouse gas emissions and combat climate change. Additionally, it aims to ensure that all EU citizens have access to affordable and clean energy, which is crucial for achieving long-term economic growth and a stable energy supply.

How does BioMass play a part?

Oh, when we dream of clean energy, we often imagine sun-soaked solar panels, the gentle hum of hydroelectric dams, the rhythmic turning of watermills, and even the occasional soccer ball turned flashlight. But what about Biomass? It's a bit of a puzzler, isn't it? Or is it? Maybe it's not as tricky as we once thought! Did you know that Biomass is actually organic material like wood, crops, and agricultural waste that can be used to create heat, electricity, and transportation fuels? By tapping into this renewable energy source, we can reduce our carbon footprint and decrease our dependence on fossil fuels. And, as an added bonus, using Biomass can actually support local economies by creating job opportunities. Who knew that Biomass could be such a hidden gem in the world of clean energy?

Unlocking the Hidden Potential of Biomass: Achieving EU Goals 3, 7, 9, and 12

Bicycle Renewables aims to address critical issues in our country with our comprehensive plan. From concept to completion, we propose solving an impending drug, invasive species, and renewable energy problem that our country desperately needs.

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



7 AFFORDABLE AND
CLEAN ENERGY



3 GOOD HEALTH
AND WELL-BEING



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



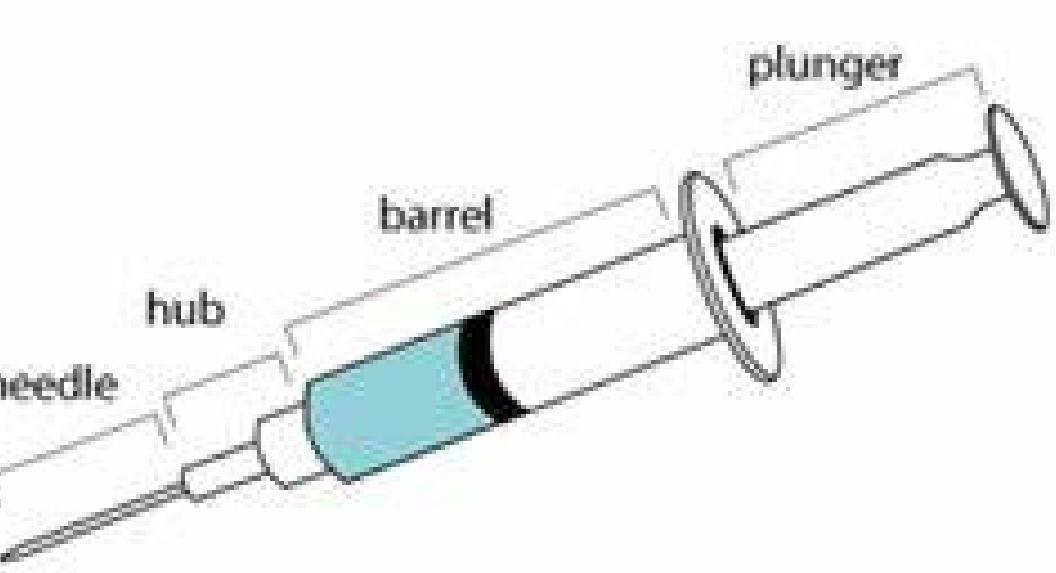
Step One : Needles

The widespread use of syringe needles is a primary concern. It's estimated that 30 billion needles are used every year, and over 40 states have needle exchange programs that allow anyone to purchase needles with little to no justification. Unfortunately, these needles end up in landfills, on the streets, and in the hands of people struggling with addiction. Cocaine, heroin, opioids like fentanyl, hydrocodone, oxycodone, morphine, methamphetamine, and prescription stimulants such as Adderall are the most commonly injected drugs, although ketamine and PCP are also occasionally injected. In the United States alone, there were an estimated 3,694,500 individuals who injected drugs in 2018, accounting for 1.46% of the adult population. Male non-Hispanic whites aged 18-39 had the highest prevalence of injection drug use. Even though dirty needles can spread blood-borne diseases, people with an addiction will still use them out of desperation. The problem is that needles are too easily accessible, and after usage, what do you do with them? But what if they were recyclable? What needle tips were Biomass?

Fact Check:

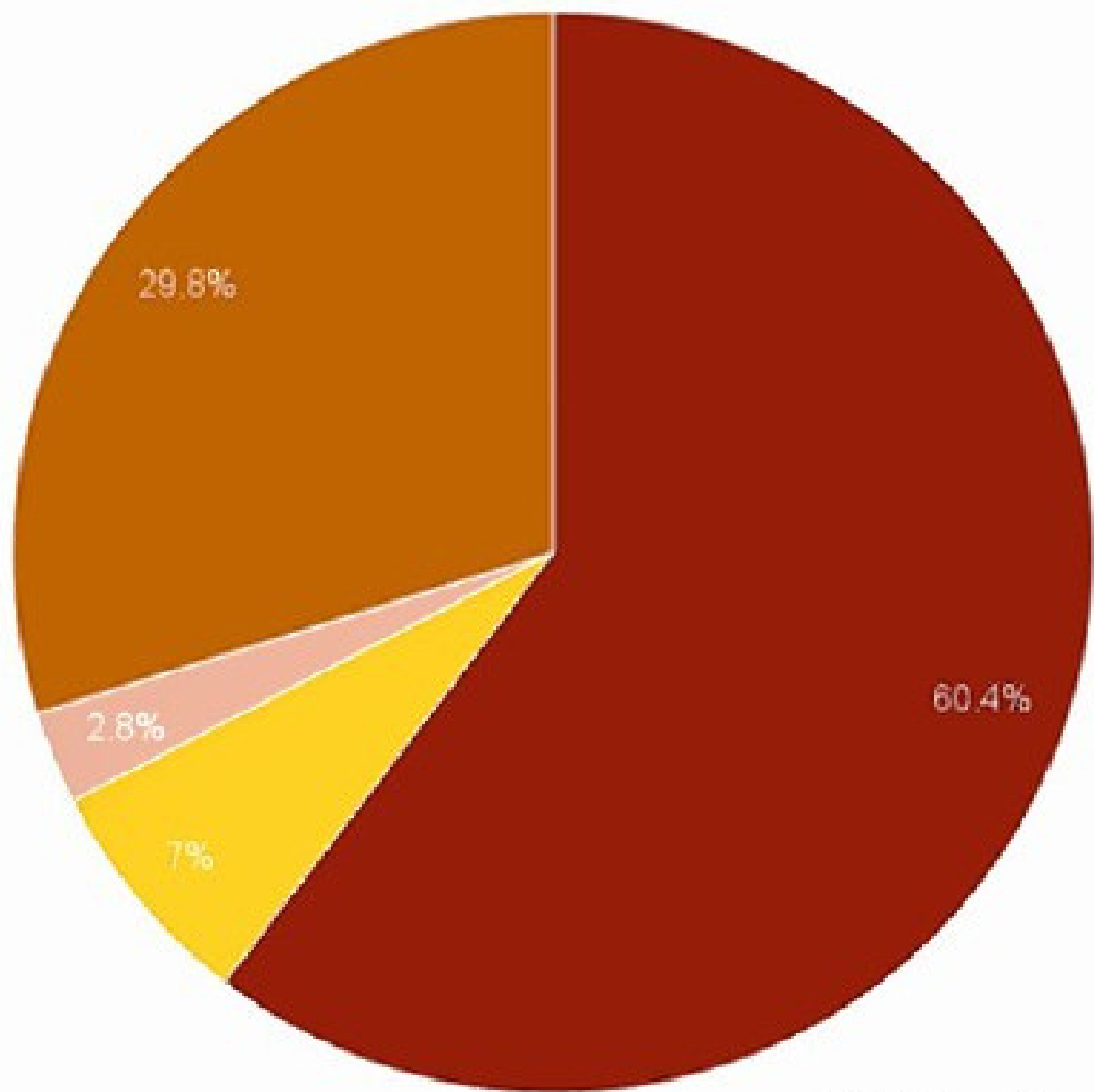
During our inquiry, we approached three nurses who graduated from VSU and inquired about using stainless steel needles. However, their responses were simple and limited to the benefits of durability and cleanliness. Rhonda Gray, a VSU alumna among those interviewed, expressed confusion and admitted that they were never taught any further explanation on the subject.





Parts of a Syringe

More than half of hepatitis C infections were attributed to injection drug use in 2015



Recorder Graphic/Tom Relihan
Data: Massachusetts Department of Public Health

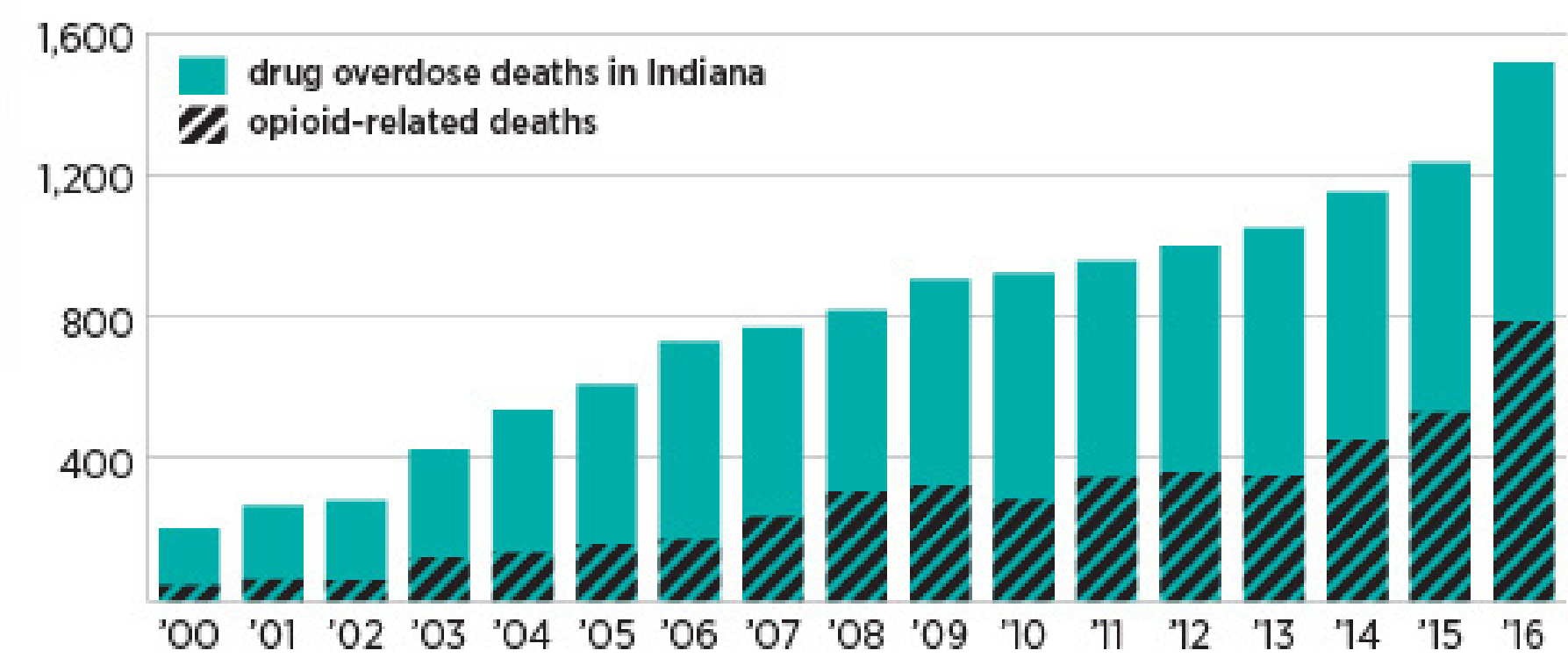


Parts of a Needle

- Injected Drugs
- Other Risk Factors
- No response
- No/unknown history

Opioid deaths spiking

Fatal opioid overdoses are climbing in Indiana—from less than 20 percent of all fatal drug overdoses in 2000 to more than half in 2016.



Source: Indiana State Department of Health



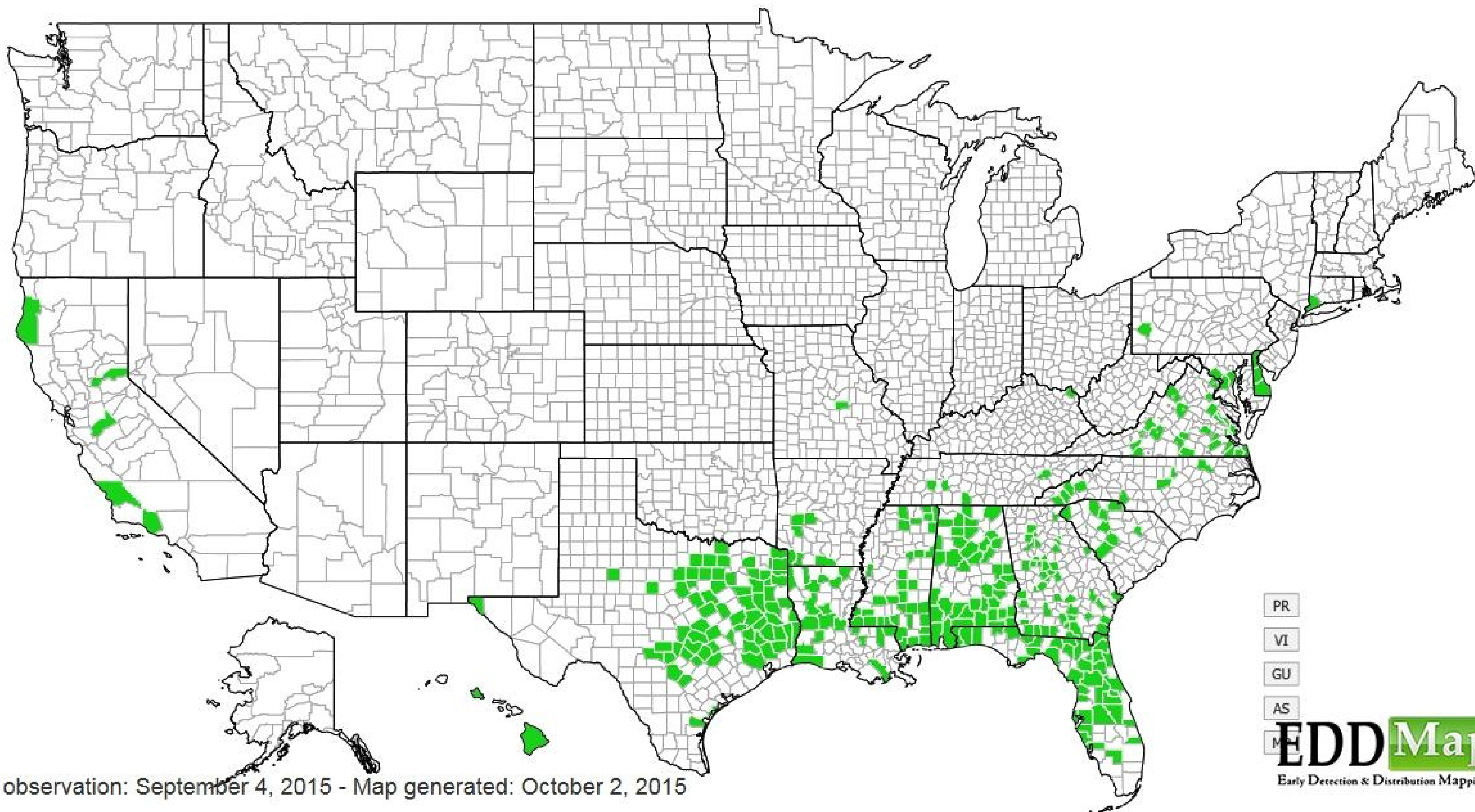
Step Two: Bamboo

Bamboo is a unique species that has both harmful and beneficial properties. According to the Georgia Exotic Pest Plant Council, golden bamboo (*Phyllostachys aurea*) is a category 1 invasive plant that can cause serious problems in Georgia's natural areas by extensively invading native plant communities and displacing native species. Maryland, Pennsylvania, Virginia, and West Virginia have also considered bamboo an invasive species.

However, despite its invasive tendencies, bamboo has proven to be one of the most ecologically sustainable and versatile materials known to man. Its tensile strength allows it to be used in a multitude of applications, including food, fuel, pulp, cloth, and even furniture. Over the years, bamboo has been used for a wide variety of purposes, such as cooking, construction, and even medicinal uses. In Asia, bamboo tattooing has been a practice for centuries. Bamboo can also grow an inch every hour.

In terms of strength, bamboo surpasses both wood and metal. Its inherent strength means that little to no processing is necessary when using bamboo as a substitute for these materials. When compared to conventional building materials, bamboo is stronger than steel when it comes to tensile strength. In fact, bamboo can attain additional properties that make it even stronger and more robust when processed. This has led to bamboo being referred to as "Green Steel". With its impressive strength and versatility, could bamboo be the new stainless steel needle tip of the medical world?





Last observation: September 4, 2015 - Map generated: October 2, 2015

PR
VI
GU
AS
M
EDD MapS
Early Detection & Distribution Mapping System

Step Three: Make Biomass Bamboo the new needle tip.

Today, we propose bamboo as a replacement for stainless steel needles in the medical industry. The production and processing of bamboo and bamboo products is a relatively new industry, especially compared to conventional materials like steel and wood. However, the International Organization for Standardization (ISO) has produced a set of production standards for bamboo being used in particular applications, which has vastly improved the standards of bamboo being used in various industries.

Despite this, the production of needle tips has stayed the same for decades, with the cleaning process of the needles remaining unchanged. Given the potential harm caused by stainless steel needles, it begs the question as to why a more sustainable and eco-friendly alternative like bamboo has not been explored for this purpose.



Step Four: Send Bamboo needles to factories and industries that use Biomass as fuel.



Bamboo's carbon footprint



Chevron/Renewable Energy Group (REG) is a renowned producer and supplier of renewable fuels, including diesel, biodiesel, and chemicals. They are famous for utilizing biomass as fuel for factories and industries. When the biodiesel industry was still a fledgling sector, the company made its first batch of biodiesel in 1996 in Iowa under the umbrella of West Central Cooperative.

West Central opened one of the world's biggest continuous-flow processing plants for processing soybean oil into biodiesel fuel in 2002. After four years, Renewable Energy Group, Inc. became an independent corporation. The company raised 100 million USD in private equity, the largest-ever investment in the biodiesel industry at that time. Since then, REG has become the biggest biodiesel producer by volume in the United States.

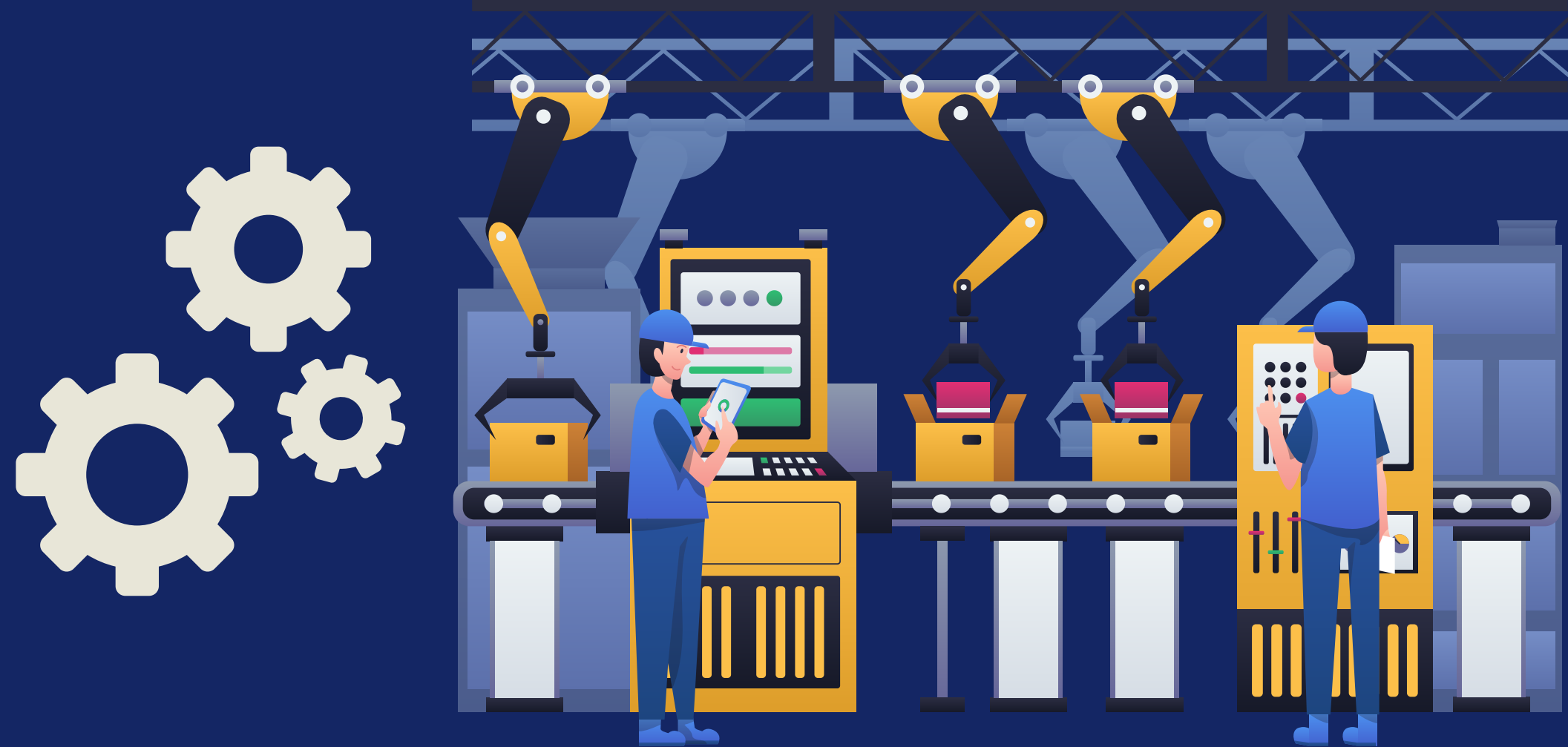
POET is another company that has grown from a single bioprocessing plant in South Dakota to one of the largest bioproducts producers globally. They develop renewable bioproducts and alternatives to petrochemicals and fossil fuels. They have 33 bioprocessing plants with an annual production capacity of 3 billion gallons of bioethanol.

Their sustainability goals are based on two pillars: investing in technology focused on achieving carbon neutrality, increasing the use of plant-based products, and advocating for a sustainable society. Their continuous innovation in biotechnology has earned them a spot on Fortune's 2019 'Change the World' list and Fast Company's 'Most Innovative Companies of 2019.'

High Heat Output: One of the significant benefits of burning bamboo is its ability to generate intense heat. Due to its dense composition, bamboo burns hotter than many other types of wood commonly used for fuel. This makes it an excellent choice for heating purposes or cooking over an open flame.

Less Smoke: When compared to traditional firewood options like oak or pine, bamboo produces significantly less smoke when burned. This reduction in smoke emissions not only contributes to better air quality but also minimizes the risk of respiratory issues caused by inhaling harmful particles.

Minimal Ash Residue: Another advantage of using bamboo as firewood is that it leaves behind minimal ash residue after burning. This means less time spent cleaning up ashes and more time enjoying the warmth and ambiance provided by your fireplace or wood-burning stove.



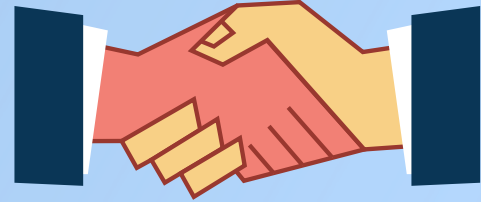
Luer slip tip syringes 100 pack
\$11.69 amazon



Luer lock tip syringes 100 pack
12.99 amazon



Business Plan



We should consider the following steps to move our idea forward:

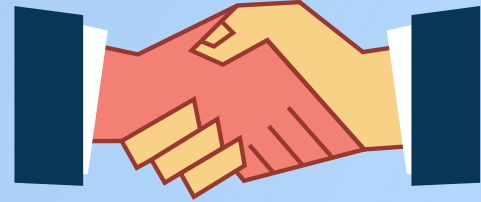


1. It would be beneficial to gather opinions from medical professionals and scientists. We can reach out to our connections and see if anyone is interested in giving feedback. So far, three members of the medical field have expressed interest in our idea.
2. Building relationships with a banker, accountant, and lawyer could be helpful. We can leverage the connections we have made at VSU to find reputable professionals.
3. Finding investors who are interested in our company is important. We can explore potential partnerships with green companies or organizations that have concerns about big pharma and the FDA. Amy Watson may be able to provide some valuable insights.

After the prototype stage:

4. Testing our product in laboratories will be crucial. We will need to work with VSU alum in the medical field to navigate any potential barriers.
5. Creating a factory will require us to purchase syringe machines, hire workers, and source bamboo.
6. Once we have a product ready, we can market it to hospitals and medical centers.

Revenue Model



Acquiring and Processing Bamboo:

Estimate the cost of acquiring and processing bamboo at \$0.15 per pound, with each needle requiring 0.01 pounds of bamboo. Assume the cost of manufacturing and distributing one bamboo-based medical tool (needle) at \$0.02.

Product Offering

Set the selling price for bamboo-based medical tools (needles) at \$0.10 per unit, ensuring a competitive yet profitable pricing strategy.

Target Market:

The target model for Biocycle Renewables includes healthcare institutions, medical device distributors, environmental agencies, government policymakers, research institutions, investors, community groups, and end-users.

Marketing and Distribution:

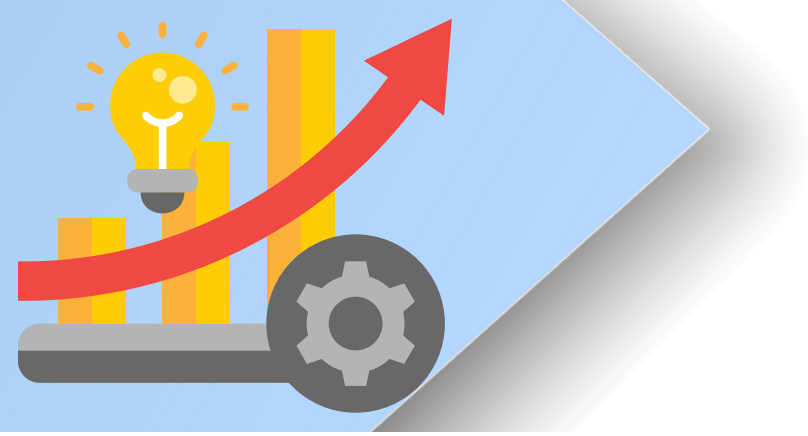
Allocate a marketing budget of \$20,000 for the first year to launch marketing campaigns, attend trade shows, and establish distribution channels.

Estimate distribution costs at \$0.02 per unit sold.

Additional Revenue Stream:

Estimate the revenue from selling 100,000 biomass units to Chevron at \$0.02 per unit, resulting in a total revenue of \$2,000.

Revenue Model



Revenue Streams

(if) projected revenue from selling 500,000 bamboo-based medical tools (needles) in the first year, resulting in a total revenue of \$50,000.

Costs and Expenses

Estimate total costs and expenses for the first year, including raw material acquisition, processing, manufacturing, marketing, and distribution, at \$35,000.

Estimate a net profit of \$15,000 for the first year from the sale of bamboo-based medical tools.

Profit from Selling Biomass

Calculate the profit from selling 100,000 biomass units to Chevron, considering the cost of acquiring and processing bamboo.

Let's assume a profit margin of \$0.01 per unit, resulting in a total profit of \$1,000.

Plant Power!

Kudzu (*Pueraria montana* var. *lobata*)



Kudzu is a fast-growing vine native to East Asia but has become invasive in many parts of the world, including the southeastern United States.

It contains cellulose and starch, which could be utilized for biofuel production.

Research suggests that compounds extracted from kudzu may have antioxidant and anti-inflammatory properties, making it a potential candidate for medical device materials, such as sutures or wound dressings.

Gorse (*Ulex europaeus*):

Gorse is an invasive shrub native to Europe but has become widespread in other regions, including North America, Australia, and New Zealand.

It contains lignocellulosic biomass suitable for biofuel production.

While not extensively studied for medical applications, gorse extracts have been investigated for their potential antioxidant and antimicrobial properties, suggesting possible uses in medical device materials.

THANK YOU

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QUESTIONS COMMENTS CONCERNS???

