

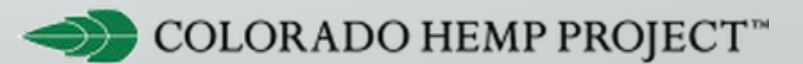


GHA

GUYANA
HEMP
ASSOCIATION

Presented By:

Dr. Turhane M. Doerga Ph.D.



Work Smarter, Not Harder.

- Diversification = Economic Stability and Durability over time
- Agriculture already understates the Guyanese Economy
 - Rice
 - Sugar
 - Coconuts
- Hemp = Rice x10
 - The results of Alesie Group's Economic Recovery Program for Guyana in the 1990s show Guyana's abilities in Global Agro-Economics.
 - Hemp is the most valuable crop in the world.
 - End-Product Processing locally will multi-fold the impact on the economy in all sectors and industries.





THE VERY USEFUL INDUSTRIAL HEMP

with over **50,000** different uses...

HEMP SEEDS

HULLING

HEMP MEAT

Food

Dairy products

PRESSING / CRUSHING

HEMP SHELL

Flour

Bakery Products

FLOUR

HEMP OIL

Personal Care Products

Cooking Oil

Fuel / Paint

HEMP CAKE

Food Beer

Feed

FEED

Hemp seeds contains nutritious, **Polyunsaturated Fatty Acids (PUFAs) 80%** the highest amount found within the plant kingdom. Highly nutritious of humans and animals.



HEMP is a RESOURCE

20 vs **4**
years for trees to mature vs months for hemp

Hemp can yield 3-8 dry tons of fiber per acre, **FOUR** times what an average forest can yield.



Paper, fertilizers, soil nutrients and animal bedding can be made from leftover waste when processing hemp.

This means all parts of the plant are being used, or put back into the earth.

HEMP STALKS

DECORTICATING

HEMP FIBER

Hacking PRIMARY (Line) Fiber	Hacking SECONDARY	Scutching TOW
Fabric Insulation Carpeting Paneling	Cordage Pulp Recycling Additive	Cordage Bagging Fiber Board

Anything made out of cotton, timber or petroleum can be made out of hemp

Hemp fiber is the **strongest** natural fiber in the world

HEMP HURDS

Fiber board
Compost
Mortar
Paper filler
Absorbent bedding
Chemical feedstocks
- Plastics / Paint / Sealant

Hemp hurds can be cleanly **Converted** into **Gasoline!**

Through a Heat Process called **PYROLYSIS** Hemp Biomass can also make Ethanol, Methanol & Methane Gas

Hemp Seeds & Flowers

- 33% protein
- 35% essential fatty acid (Omega 3, 6, 9 and GLA)
 - Contains 6.2 x more Omega-3 than raw tuna.
- Contains all 9 essential amino acids.
- Contains an abundant source of GLA
- Great source of Vitamin E and minerals such as: phosphorus, potassium, sodium, magnesium, sulfur, calcium, iron and zinc
- High in dietary fiber



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Hulled Hemp Seeds

Hemp Seeds are the most concentrated and best balanced source of proteins, essential fatty acids, and vitamins found in nature.



Hemp Protein

Hemp is a complete protein, containing all 9 essential fatty acids, Omega-6 and Omega-3 in an optimal 3:1 ratio



Hempseed Oil

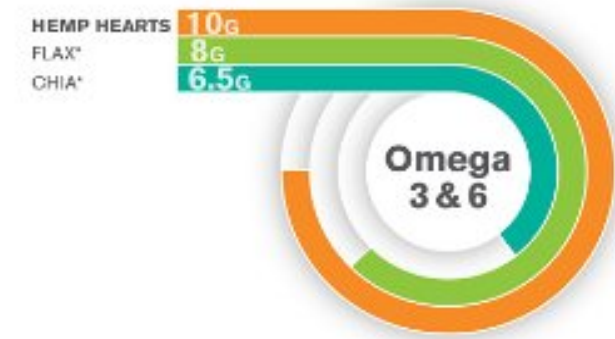
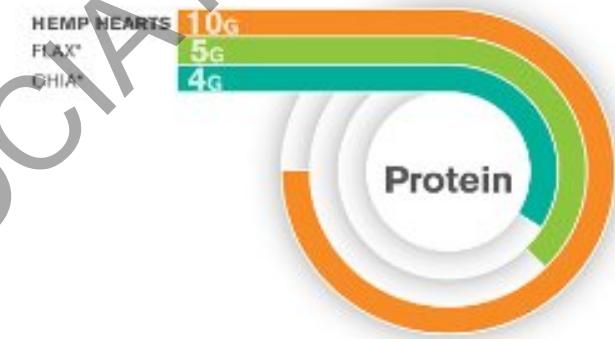
Hemp Seed Oil is the richest source of essential fatty acids and has been dubbed "Nature's Most perfectly balanced oil" due to its perfect Omega balance and Gamma-Linolenic Acid (GLA) content.



HEMP HEARTS

COMPARED TO OTHER PRODUCTS

Per 30g serving



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Hemp Bio-Fuel

- Hemp seed oil produces non-toxic diesel fuel and lubricating oil.
- Hemp seeds account for up to half the weight of a mature hemp plant
 - This makes Hemp seed the most viable source for these products.
- University of Connecticut used Hemp seed oil to create biodiesel using a common process called Transesterification.
- Tests revealed that Hemp Bio-Diesel had a conversion rate of 97% of the hemp oil converted to Bio-Diesel
- Test results also suggest it could be used at lower temperatures than any biodiesel currently on the market.



Hemp Stalks

Fiber & Hurd

- **Clothing**

- Stronger, Cheaper, and more Eco-Friendly than Cotton

- **Construction Materials**

- Eco-Friendly and Non-Toxic Hemp-Crete and Insulation

- **Paper**

- 1 acre of Hemp = 4 Acres of Trees for paper pulp

- **Biofuel**

- 70-80% conversion rate makes Hemp the most viable source
- 80% less carbon emissions

- **Plastic Composites**

- Strong, light, bio-degradable





KEY



CORN



SWITCHGRASS



HEMP



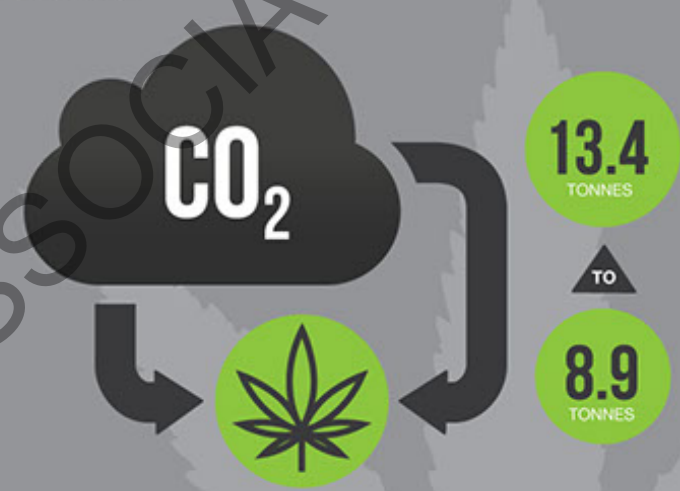
GASOLINE



GREEN HOUSE GAS

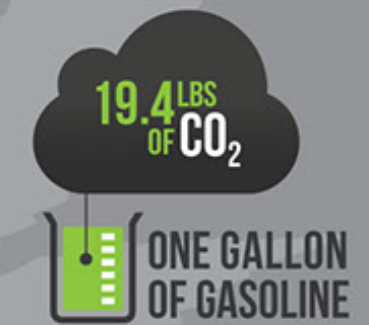
GREENHOUSE GAS ABSORPTION

(per hectre)



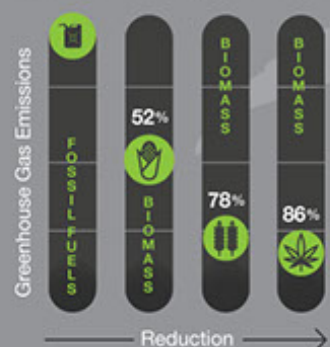
TRANSPORTATION

Cars, Trucks, Trains, Airplanes



GREENHOUSE GAS REDUCTION

IN ADDITION to producing substantially fewer greenhouse gas emissions during burning for fuel, cellulosic ethanol also produces 86% less GHG emissions during production than gasoline, and it beats both corn and sugarcane sources of ethanol in this regard as well.



TOTAL ENERGY

(Joules)



Textiles, Fabrics & Cordage: Hemp Vs. Cotton

- **On an annual basis, 1 acre of hemp will yield what 2 to 3 acres of cotton will yield.**
 - Hemp fiber is stronger and softer, lasts twice as long as cotton, and will not mildew.
- **Cotton grows only in moderate climates and requires significantly more water than Hemp**
 - Requires only moderate amounts of water, and grows relatively easily compared to other cash crops
- **Cotton requires large quantities of pesticides and herbicides--50% of the world's pesticides/herbicides are used in the production of cotton.**
 - Hemp requires no pesticides, no herbicides, and sometimes moderate amounts of fertilizer based on the soil.
- **Fashion designers such as Stella McCartney, Armani and Calvin Klein are using hemp textiles in their collections.**





PREMIUM HEMP HERITAGES RECYCLED PAPER
HEMP
GREEN FIELD PAPER COMPANY 8 1/2 x 11 1/2 SHEETS PER BOOK
DRAWING BOOK
Ruled surface. Excellent for sketching, drawing, and illustration. Available in a variety of colors, sizes and weights.
Acid-Free/Lightweight 100/80 GSM

PREMIUM HEMP HERITAGES RECYCLED PAPER
HEMP
GREEN FIELD PAPER COMPANY 8 1/2 x 11 1/2 SHEETS PER BOOK
JOURNAL
Ruled, unruled and blank. Recommended for students, artists and a variety of other users. Collage rated on one side.

PREMIUM HEMP HERITAGES RECYCLED PAPER
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Hemp Plastic

- Hemp can produce all products made from petroleum-based plastics
- Hemp plastics
 - tough
 - durable
 - contain no harmful chemicals
 - Biodegradable!
- 3D-Printing Tech w/ Hemp Plastics
 - Hemp-Plastic is the most viable source for biodegradable mass produced products for the future.



In 1941, Henry Ford made a car out of Hemp

- More resistant to blows from a sledge hammer than steel cars were in demo
- 20% Lighter than steel car
- Engine ran on Hemp Fuel



Ford's 'GROWN FROM THE SOIL' **HEMP CAR**

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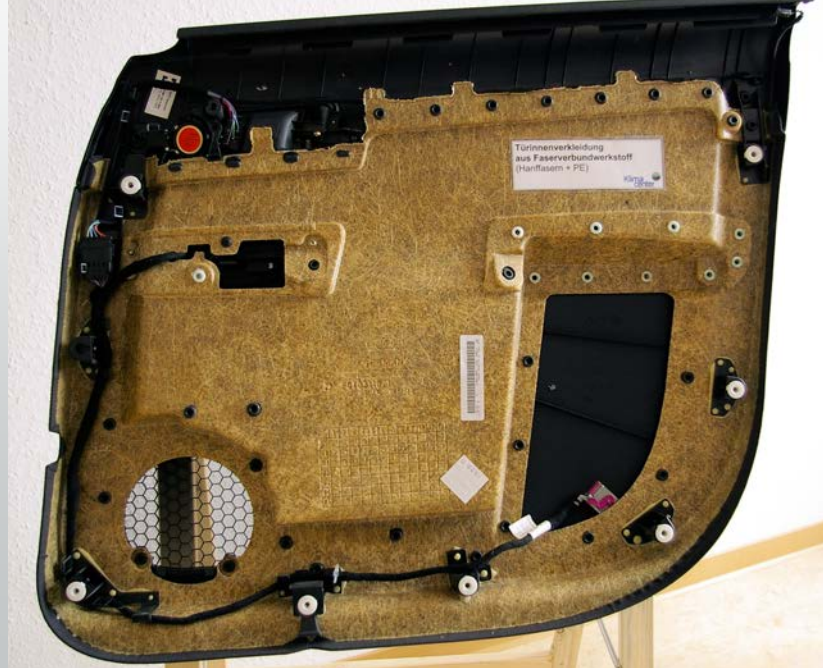
One of Henry Ford's first cars ran entirely on Hemp ethanol. The body was also constructed from Hemp plastic, which was 10x stronger than steel.

Of course - Hemp was then outlawed in the US in 1937 due to the potential damaging effect it would have on many powerful industries at the time, including the oil, plastics & paper industry.

Imagine where we would be today had these power hungry tyrants not suppressed the amazing bio-technologies of Hemp?

A black and white photograph of a white 1941 Ford car. The car has a green hemp leaf logo on the side and the text 'Hemp for Victory.' written in green. The license plate reads 'DEARBORN MICH. 8-19 1941'. Two men in suits are standing behind the car. A watermark 'GUSTINA HEMP ASSOCIATION' is visible across the image.

hempforvictory.co.nz





← Temporary form work to fill w/Hempcrete

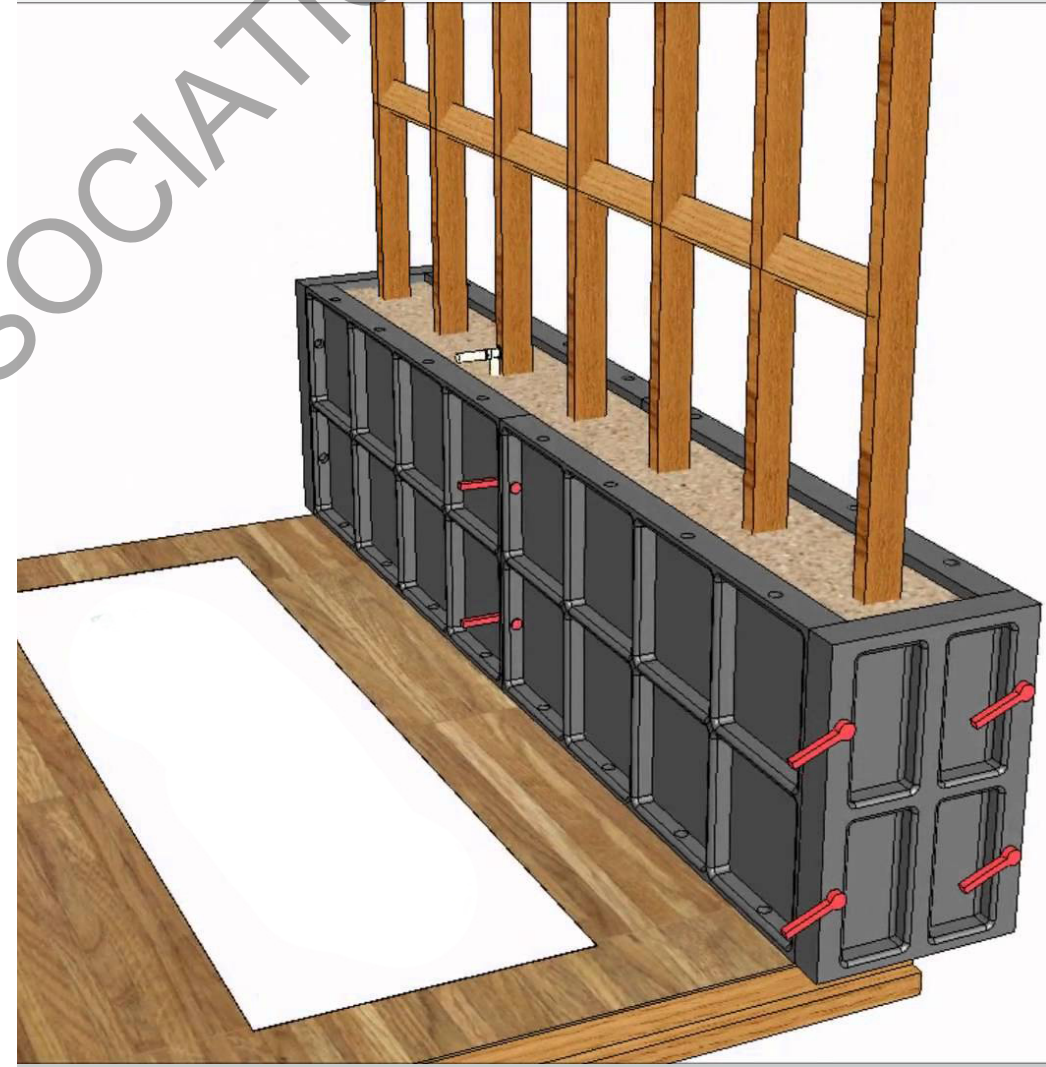
Exterior wall assembly

- Structural 2x6 wood framed wall
- Hempcrete to surround structure
- Lime Render (optional finishes can be used)
- Lime wash



Interior wall assembly

- Structural 2x6 wood framed wall
- Hempcrete to surround structure
- Lime Render (optional finishes can be used)
- Lime wash



HempCrete

The Social Effect

- Insurers provide a discount for the use of HempCrete because of its durability and its health benefits.
- Enough HempCrete for a complete 1,500-square-foot house could be produced on a few acres in one growing cycle.
 - The Hemp plant grows almost a foot a week during its lifecycle
 - Significantly lowering the cost of living in smaller and rural communities.
- HempCrete was used in The Prince of England's Natural House as proof of concept that you can grow your home
 - an eco-friendly demonstration home built in Great Britain by HRH the Prince of Wales's Prince's Foundation for Building Community.





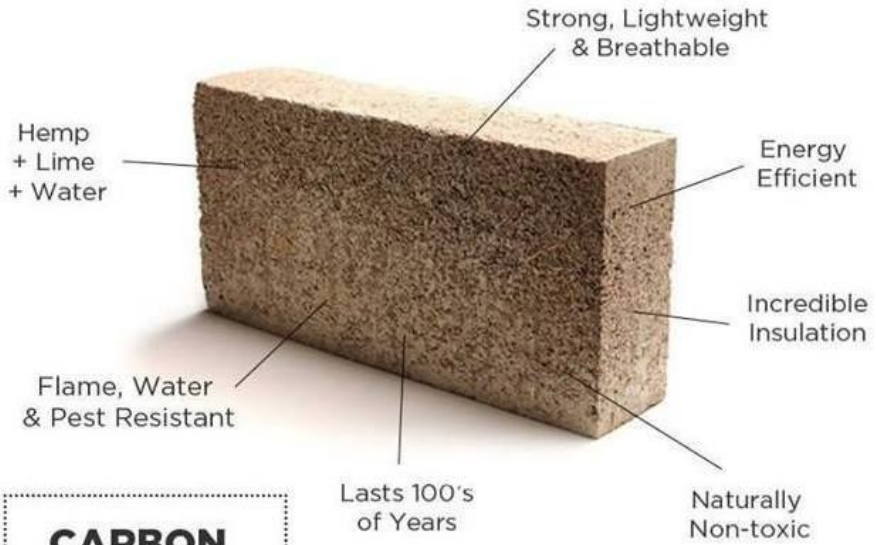


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Designed to build, not to smoke.

HEMPCRETE



CARBON NEGATIVE

EDUMED

FB.COM/EDUCATIONNOTMEDICATION



shives for concrete

shives & fibre for plaster

shives & fibre for finishing plaster

hemp wool in rolls or panel

hemp mat for flooring





Hash Marihuana & Hemp Museum
AMSTERDAM - BARCELONA



GaGa Trading .Com
AB3999VS0025
Lot-No.: 58871115
 25kg 12,5kg
100% Biodegradable HempPlastic

GaGa Trading .Com
AB4000VM0100
Lot-No.: 58881115
 25kg 12,5kg
100% Biodegradable HempPlastic

Hemp Future: Battery-Tech

- David Mitlin, and his team, of University of Alberta's Chemical Engineering department built a supercapacitor using Hemp Nano-sheets.
- The best property of the device is its maximum power density
 - At 60 °C, the material puts out 49 kW/kg;
 - Activated carbon used in commercial electrodes supplies 17 kW/kg at that temperature.
- Mitlin says. "If you process it the right way, it separates into Nano-sheets similar to graphene."
 - Liming Dai a chemical engineer at Case Western Reserve University, says the Hemp-based material shows promise as a low-cost substitute for graphene.



Hemp Future: Hemp Bio-Mat

- **Faurecia, one of the largest car parts suppliers in the world**

- The company's top customers include VW, Ford, Renault-Nissan, GM, and BMW
- BioMat and offers a lighter and more eco-friendly alternative to traditional injection-moulded plastic

- **BioMat is produced from a mixture of hemp fibers and PBS (poly-butylene succinate)**

- Developed with Mitsubishi
- For interior components like door panels, which can then be covered with various textiles or leather.

- **According to the company, BioMat:**

- "reduces the industry's dependence on the oil price and helps reduce greenhouse gases and will contribute to a higher recyclability level for future vehicles, as well as to a positive impact on the life cycle assessment."

- BioMat is an improvement over older hemp composites made from hemp and petroleum-based polypropylene.
- BioMat 25% less than comparable fiberglass materials, contributing to better car performance and fuel efficiency.



Guyana Is An Easy Fix

Steps to Social and Economic Recovery and Growth

1. Establish a durable and diverse economic “bottom-line”
2. Low Interest Rates
3. Public-Sector budgeting focused heavily on education and infrastructure development

The Difficulties of Implementation

1. Large Populations (3 million people+)
 - Guyana’s Population is less than 1 million
2. Infrastructure that must be broken down to be rebuilt
 - Its much easier to paint a clean canvas

UAE vs. Guyana



UAE
(At time of
Oil Boom)

Less than 1
million people at
time of oil boom.

Oil Reserves

Easily educated
population

Guyana
(Prepping for
Oil Boom)

Less than 1
million people at
time of oil boom

Oil Reserves +
Massive Natural
Resources

Population
already educating
themselves



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Why Did The UAE's Boom Work:

Diversification

Sheikh Zayed bin Sultan Al Nahyan is credited for The UAE's immediate and dynamic reinvestment of oil revenues into:

- Opening Trade And Shipping Lanes
- Developing The Business Infrastructure
- Made Foreign Business Development Easy
- Educating Their People At The Highest Level

This lead to sustained and exponential growth.

The UAE now has a strong \$400 Billion USD economy that will continue to grow.

Life Is Not What You Get... Its What You Negotiate For.

As the owners of the resources, we wield the power to decide what is done with it, **AND AT WHAT PRICE!!!!**

When was the last time you told the store how much you were going to pay for your items???

A World In Flux

- Solar and wind is now either the same price or cheaper than new fossil fuel capacity in more than 30 countries.
- The proverbial "tipping point" for the end of fossil fuel energy being "cheaper" has been met.

The Stone Age didn't end for lack of stone,
and the oil age will end long before
the world runs out of oil.

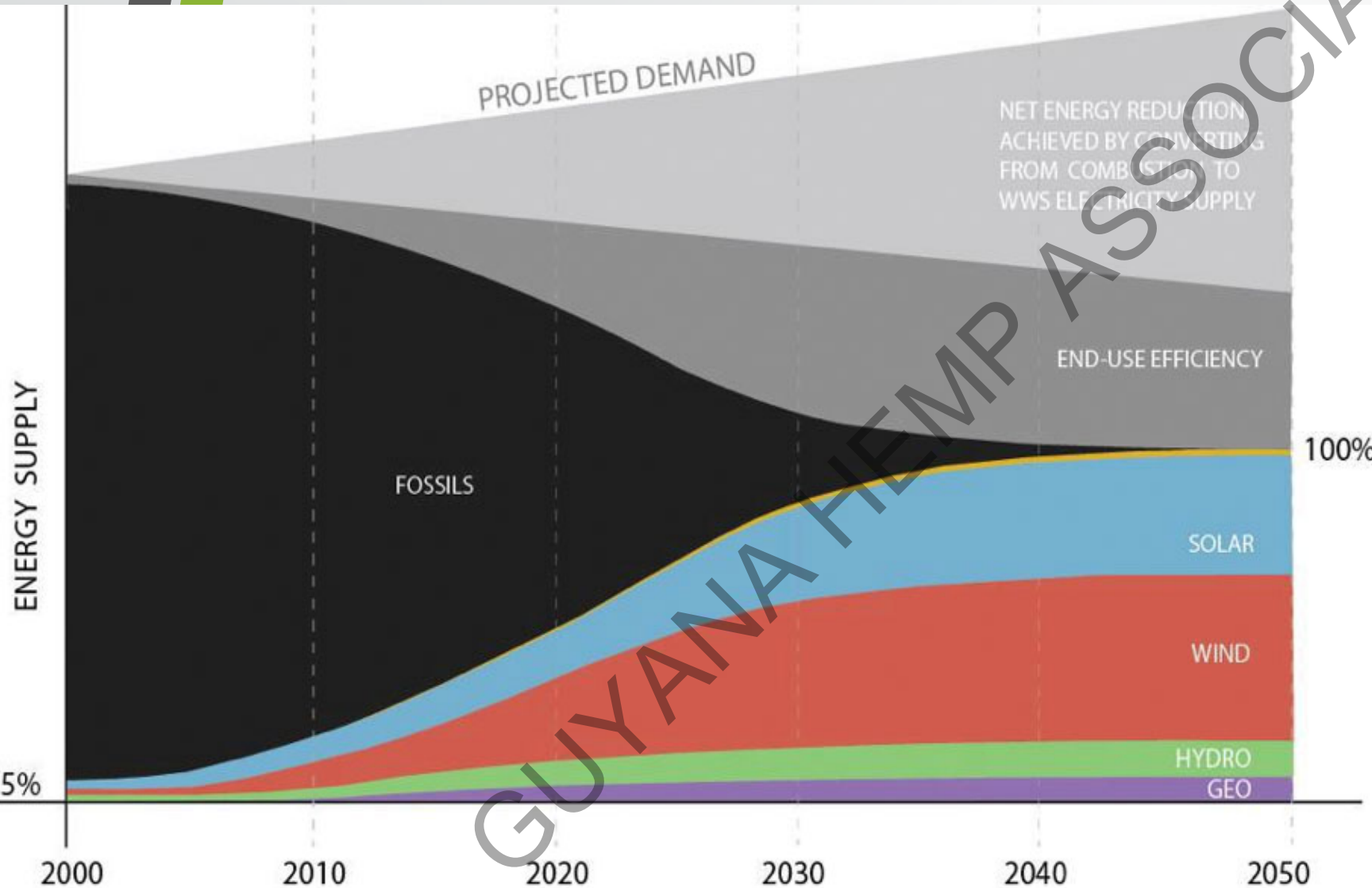


- Sheik Ahmed Zaki Yamani

“Black to Green” Growth Strategy

Use Guyana’s Temporary Oil Wealth to generate long-term growth in all, and additional sectors.

“Black To Green” Growth Strategy



Energy Outlooks from Petroleum-based energy companies for global switch-over are not reflective of the development of smaller emerging economies.

Less Established Infrastructure
+
Need For Electrification & Infrastructure Development
=
Easy/Cheaper Switch To Sustainables

Following the energy switch-over model of large nations would severely strangle Guyana's Development.

Time Is Of The Essence

Oil Industry = 15-20 years

Gold Reserves = 15 years

Timber = 20-30 years to grow back

Teamwork Makes The Dream Work

Trickle down methods don't work

- Build from the bottom up
- Educate from the bottom up

Where Does Guyana Fit Into The New Global System?

- The “Global South” and the “The East” will emerge as the controllers of natural resources.
 - There is no longer a need for centralized commodity trading, such as Wall Street or CBOT.
 - Localized exchanges near production zones, with world-wide access.

Simply Put

Guyana has many base materials which are used to create the products and services of today and tomorrow. They cant do it without us.

WE OWN IT

Therefore we deserve AND MUST REQUIRE,
a price that WE DEEM FAIR.

The Exploitation of the Emerging Markets has Ended

Guyana: The Dubai of the Caribbean

- Vibrant Agronomics
 - Rice, Sugar, Coconuts, Hemp
- Massive Oil Wealth
 - 2nd largest reserves on this hemisphere
- The Gleaming Headquarters of CARICOM
- Guyana's Redevelopment will set the stage and make it easier for the rest of CARICOM to grow and prosper.

So, Why Can't We Start Planting?

- Guyana is currently in non-compliance of United Nations Regulations.
 - The Narcotic Drugs and Psychotropic Substances Act of 1988 has a missing component to the "Control of Cannabis".
- The NDPSA states that when referencing narcotics, "Cannabis" refers to any plant in the genus "Cannabis".
- According to the United Nations regulations, in reference to Control of Cannabis:
 - "This Convention shall not apply to the cultivation of the cannabis plant exclusively for industrial purposes (fibre and seed) or horticultural purposes."



The Future Is Now.



TESLA



620 Miles
Highway Range



2025 , Guyana Is The Next Dubai!

