"Circular Economy"

Waste Conversion to Energy Introduction

Global Green International Companies

- Company Overview
- Business/ Opportunity Of Waste
- Technology And Process
- Waste To Energy Plant - Example
- Risk Management
- Strategic Partners
- Development of Technology
- Management Team
- Next Steps

Who We Are

Global Green Energy Group (Canada) Inc. is the Canadian subsidiary of **Global Green International Investments,** which holds the exclusive global license for leading waste-to-energy technology.

Since 2009, our Patented Pyrolysis Process has been successfully converting various waste streams—household waste, tires, and refuse-derived fuel—into clean, renewable energy such as renewable diesel, electricity, char, and hydrogen, preventing landfill accumulation.

The success of this technology is driven by its modular design, environmental sustainability, and strong economic viability.

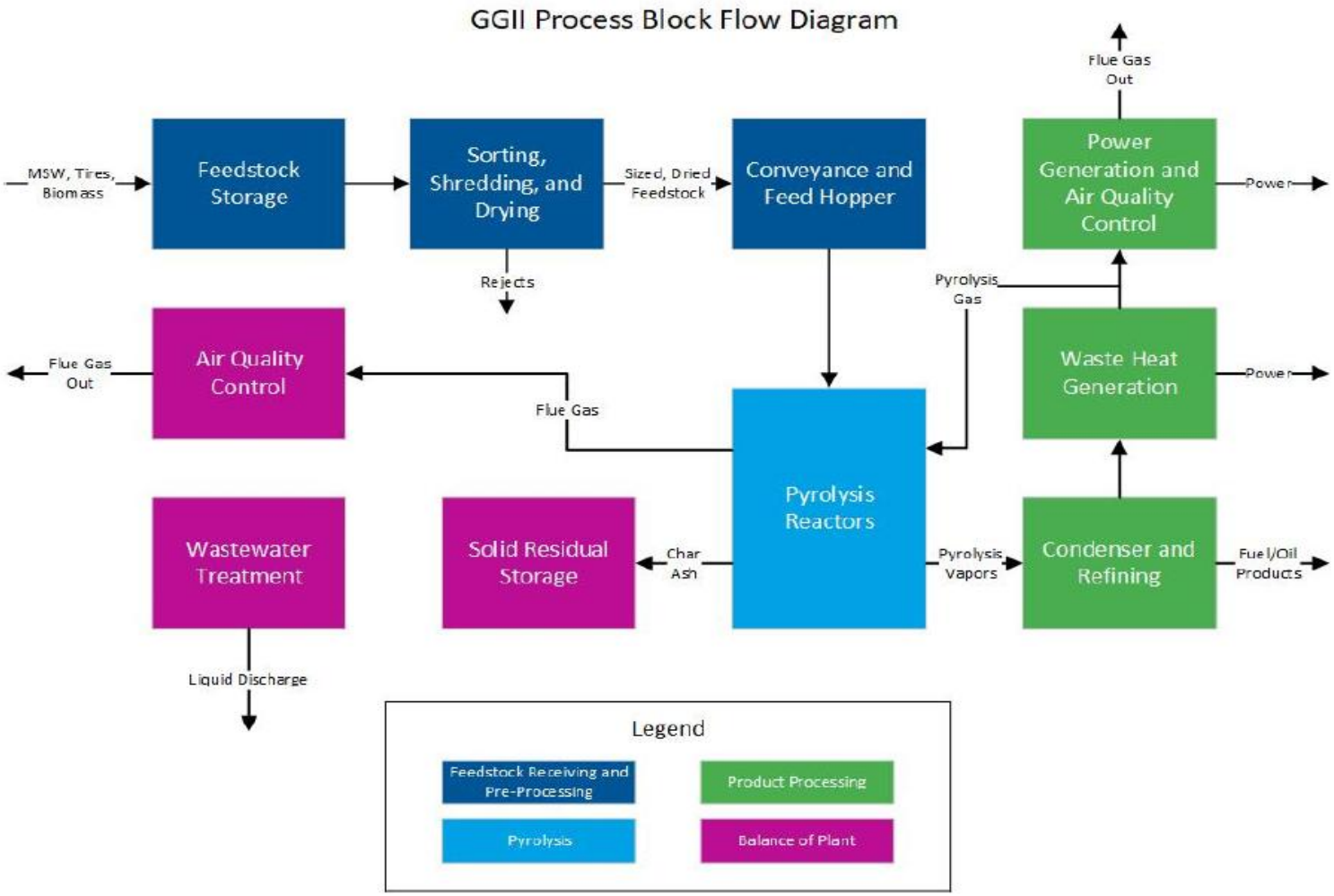
We are actively working waste conversion facilities across Europe, Asia, Australasia, and the Pacific, supporting global energy transformation.

Opportunity – The Business of Waste

The **North American market generates approximately +300 million tons of waste annually**, with over +**50 million tons** ending up in **landfills**. However, landfill capacity is dwindling, with only 10 years remaining due to site closures and China's ban on recycled material imports.

As the waste management industry evolves, cities across Canada are implementing "Zero Waste" initiatives, aiming for 100% landfill and incinerator diversion through reuse, recycling, and recovery.

This shift presents a significant opportunity for companies specializing in Material Recovery Facilities (MRF's) and waste-to-energy technologies, driving the demand for sustainable waste solutions.


GGII Process Block Flow Diagram
MSW, Tires, Biomass
Feedstock Storage
Sorting, Shredding, and Drying
Sized, Dried Feedstock
Conveyance and Feed Hopper
Flue Gas Out
Power Generation and Air Quality Control
Power
Rejects
Pyrolysis Gas
Flue Gas Out
Air Quality Control
Flue Gas
Waste Heat Generation
Power
Pyrolysis Reactors
Wastewater Treatment
Solid Residual Storage
Char Ash
Pyrolysis Vapors
Condenser and Refining
Fuel/Oil Products
Liquid Discharge
Legend
Feedstock Receiving and Pre-Processing
Product Processing
Pyrolysis
Balance of Plant

Inputs

A significant portion of waste streams can be recovered, recycled, and reused

Municipal Solid Waste
Plastics, Tires, Biomass, Other
Carbon-Based Waste

Outputs

Renewable diesel, electricity, hydrogen, activated, carbon, steam, and biochar.

Pyrolysis Technology - Key Advantages

Proven technology- Plant operational 15+ years

•Sustainable long term waste management solution

•Minimize need for additional landfill sites – overall lower costs per ton

•Modular design/scalable to address population growth and increase in WASTE

•Meets global air, soil and groundwater emission standards

•Public relations – improve environmental profile while addressing waste problem

•Provide skilled and unskilled employment

The upcoming 5 slides will be tailored according to the audience, whether it is a general group, investors, or potential buyer of a WTE plant.

Waste Conversion to Energy Project – Overview

Total 28,000 tons annually
Daily - 80 tons MSW (Municipal Solid Waste).

Renewable Energy Outputs - Diesel and Electricity

Estimated Investment - $45 M.

Feedstock and Lease Agreements – 20 Years.

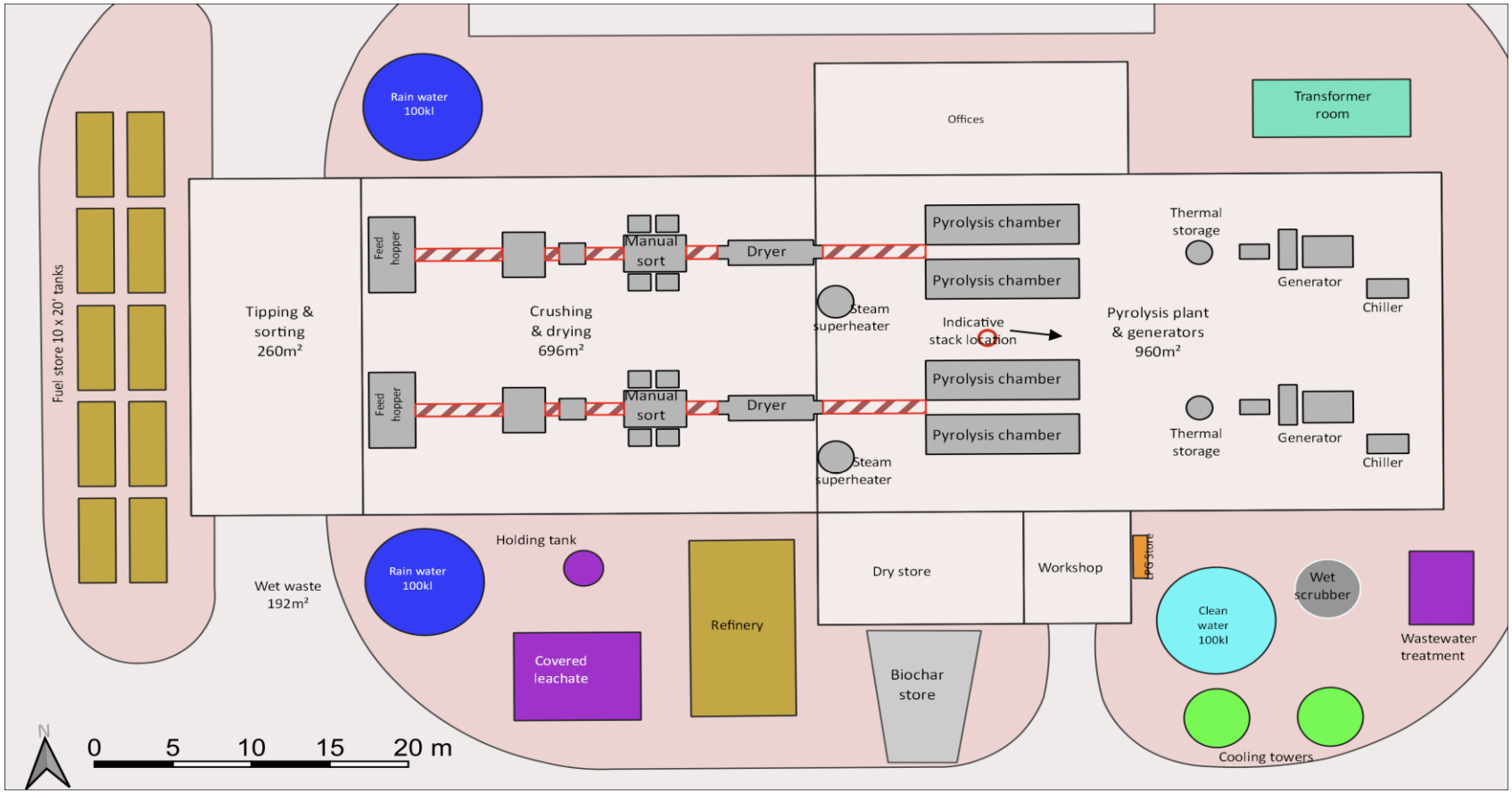
Off-Take Agreements with global oil and gas company in place and others are work-in progress

Required permits to be facilitated via feedstock supplier.

Compliance, regulatory, and permits process will be performed by a major local environmental consulting company.

Plant Commissioning and Start-Up – 12 months after order placement.

Waste to Energy Plant Site – Indicative Site Layout



What is Pyrolysis

Pyrolysis is a process that breaks down organic materials by heating them at high temperatures without oxygen. This controlled heating transforms waste into valuable products like fuel, electricity, and carbon-based materials.

Why is Pyrolysis Important

By adjusting factors like temperature and heating speed, pyrolysis can produce different amounts of:

- Solid carbon (biochar or carbon char)
- Liquid fuel (such as synthetic diesel)
- Gases (including hydrogen for clean energy)

How Can It Benefit Us

Pyrolysis can turn household, commercial, and agricultural waste into useful resources, reducing pollution and creating sustainable energy solutions

High Level Example of 80 Ton WTE – Financials

Cash Flow Statement

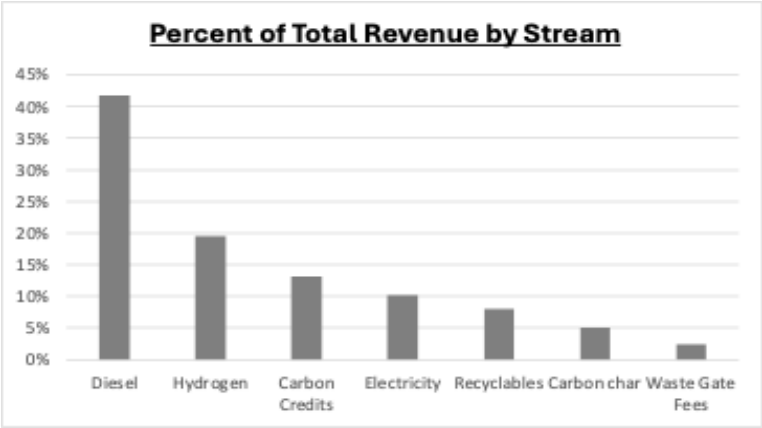
CAPEX Estimate

High Level Example of 80 Ton WTE - Financials

Capacity	80 Net Tons Per Day
Operating Days	330 Per Year
Outputs/Day	
Electricity	
Diesel	
Hydrogen	
Carbon Char	
Prices	
Electricity	
Diesel	
Hydrogen	
Carbon Char	
Gate Fee	
Tax Rate	
Interest Rate	

Initial 5-Years - Summary - USD Millions

	Year 1	2	3	4	5	Total
Revenue	20.4	21.0	21.6	22.3	22.9	108.1
EBITDA	11.5	11.8	12.2	12.5	12.9	60.9
EBITDA %	56%	56%	56%	56%	56%	56%



Financial / Business Risk Mitigation

RISK REDUCTION

GMAX

General Builders Risk Insurance

Outside Date Insurance

EPC Fit for Purpose Bonding

Performance Bonding & Insurance

OPERATION & MAINTENANCE

Outside Date Insurance

Output Insurance wrap

Contractor payment based upon industry standard performance bonus program

AON

Empower Results®

FINANCIAL

Coverage ratio of 275% additional profits impacts not carried in financial model:

- Refining credits
- Local Economic Incentives

OFF-TAKE CONTRACT

AA Rated Off-Take Partners

Long-Term Contracts

PROJECT

Full Risk Coverage

Surety

Insurance Wraps

Evaluation, Viability, Capability

Market Analysis, Sales, Logistics

TECHNOLOGY

Performance, Feasibility

Working & Computer Models

AON Risk Performance Warranty

Swiss Re

SCIENCE

In-House Laboratory Testing, Analysis, Usability, verifying ASTM standards of goods prior to transportation to off-takers

ENVIRONMENT

Environmental & Ecological Analysis

Climate Change Sustainability

Waste Conversion to Energy – Partners

EPC Contractor

BLACK & VEATCH

Manufacturing Partners

MITSUBISHI HEAVY INDUSTRIES

HITACHI
Inspire the Next

Renewable diesel Refining Partners

UOP
A Honeywell Company

TIPTON Tipton Corp.

Insurance Partners

AON
Empower Results®

Lloyds

Swiss Re

LOCKTON

Operations & Maintenance

globalgreen international

Engineering consultants

BLACK & VEATCH

Off Take Partners

bp

Renewable Electricity Partner

GE Power

Waste to Energy - Technology Development

2005 – Five Ton R&D Plant Facility

Waste to Energy - Technology Development

Commissioned in 2009 - , Frist Generation 20ton MSW module produces 10K liters of renewable diesel per day, continues in operations .

Global Green Energy Group

globalgreen international

Hankook Waste Tires Conversion Plant
Commissioned - 2018

Hankook Waste Tires Conversion Plant

8 x 25ton pyrolysis chambers convert 200 tons of waste tires per day into energy and to fuel tire manufacturing process.

Our Management Team

Combines a wealth of experience, strategic vision, with diverse backgrounds in leadership , operation, finance and technology innovation.

Allan has been involved in GGII 's technology since 2004 and leads manufacturing as well as ensuring continued R&D ensuring innovation & world leadership in waste to energy

Allan Clarke , Chairman & founder of GGII
Director GGEG

President of GGEG in the Americas , with over 30 years in the Oil & Gas industry, Ruben has held senior management across key sectors, including Exploration & Production (E&P), Chemicals, Refining

Ruben Aldape ,CEO GGEG

Steve is a chartered accountant and highly experienced in developing optimization strategies for operational facilities. Steve has worked international level and has headed up divisions of GE and Spotless.

Stephen McIntyre
CEO GGII

Alan has over 30 years experience in marketing development, analysing markets and implementing strategies to ensure facility objectives are achieved.

Alan Matthews
Director GGEG
Director GGII & CEO of GGIE

Richard has global experience in infrastructure development and process engineering, operations and maintenance and leads the GGII engineering team

Richard Simcock
Director Engineering GGII

Steve has 35+ years in international banking and was Head of Markets for Westpac Hong Kong and GM of National Australia Bank. Steve works closely with the United Nations Sustainable Development Goals in promoting environmental and social responsibility for project implementation.

Steven Lambert
Independent Director GGII

Next Steps

•Prepare business plan for presentation to secure project funding.

•Engage environmental consultants to undertake environmental assessment and lodgment of relevant permit applications.

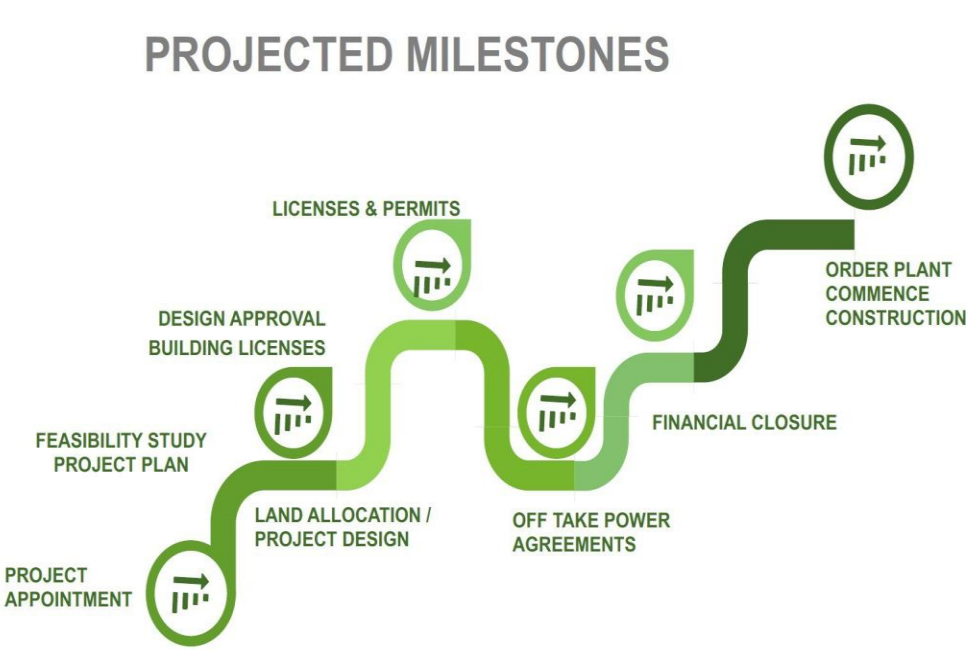
•Seek government approvals for SPV to build, own & operate the waste conversion facility.

•Engage architects to design the facility and prepare civil & building drawings.

•Engage Black & Veatch to manage EPC operation.

•Undertake waste characterization study to confirm plant outputs.

•Engage with potential off takers for diesel/electricity/char and carbon credits to secure offtake agreements.



Plant Commissioning and Start-Up – 12 to 15 months after order placement.

Global Green Energy Group and its affiliates are committed to advancing their innovative technology in small-scale pyrolysis plants.

Today's trash
can be tomorrow's resources