



BUSINESS CASE FOR A TMCC 500 kW PLANT

Sugar Cane Bagasse

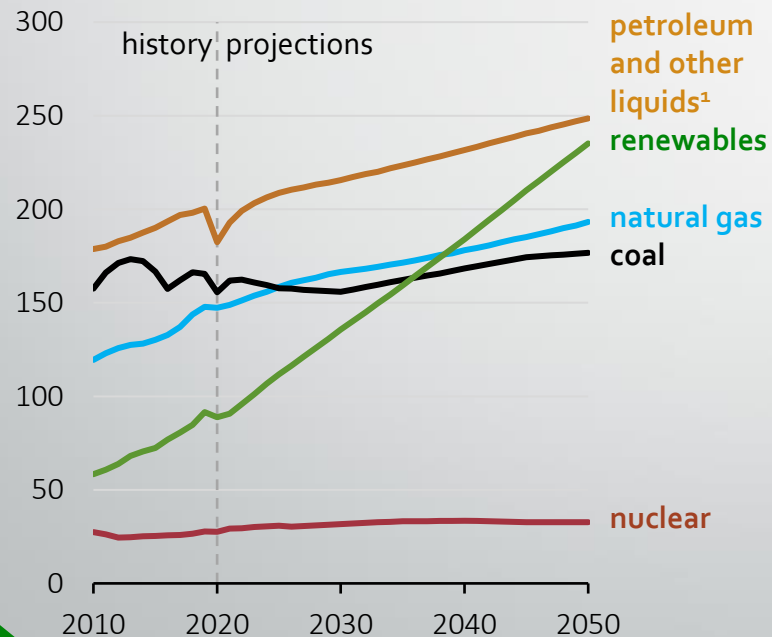
January 2026

Executive summary

- TMCC technology is an innovative waste management solution for the renewable energy market that manufactures turnkey plants that produce drop-in carbon neutral synthetic biofuels
- TMCC provides the highest efficiency, low-carbon renewable liquid synthetic fuel production to assist decarbonization efforts and achieve net-zero mobility
- Ecokat offers a TMCC 500 kW turnkey plant ready for operation
- Ecokat will be responsible for the installation and startup of the equipment
- Our business model allows the investor for any number of plants to be operated, since each site works as an independent center
- Investing in a TMCC plant generates annual cash flows of up to 50% of total investment, and has a high IRR and NPV

The world faces ever-rising fuel costs, scarcer resources & increased energy demand...

Primary energy consumption by energy source, world
quadrillion British thermal units



Source: U.S. Energy Information Administration, International Energy Outlook 2021 (IEO2021) Reference case

¹ includes biofuels

Traditional waste management solutions have tried to address these problems

- Landfills
- Incineration
- Gasification
- Waste centralization

...But current solutions like these have failed

Our solution is to tap into hydrocarbons contained in waste to convert them into usable energy

Energy in waste can be contained in different forms:

- Solid or liquid fuel
- Thermal energy
- Electricity

Thermal Mechanical Catalytic Cracking (TMCC) mimics the natural process that takes millions of years to create fossil fuels in nature **in minutes**:

- Using crystalline activated molecular sieve powder catalysts
- Raising the temperature up to 380 °C from 15 °C in nature
- Converting kinetic to thermal energy by friction
- Producing effective mixing and degradation of solids
- Resulting in a high energetic yield

TMCC produces sustainable synthetic diesel fuel at a fraction of fossil fuel costs with organic material

TMCC can process organic material like the following to produce sustainable fuels:

- Plastics mix and rubbers
- Crude oil, refining residue oils, bitumen, waste lubricants
- Mineral carbon
- Selected municipal solid waste (RDF)
- Biomass, cardboard, paper, wood, straw, sawdust, grasses, bagasse
- Animal produce and waste

TMCC plants are 2-in-1 solution for decarbonization efforts of all industries:

- Reduce waste through circular economy cycle
- Maintain neutral CO₂ balance by emitting only CO₂ stored in waste

TMCC technology offers the most effective, efficient, ethical and ecological solutions with high returns

- Effective: Positive energy balance, energetic yields of 80%, flexible organic feedstock.
- Efficient: Cost competitive, scaling/modular operations, simple process.
- Ethical: Not competing with food chain
- Ecological: Environmentally friendly (process emissions free, type of chemicals used, by-products produced)

TMCC synthetic fuel specification

Synthetic Fuel Specification ULSFO (Ultra Low Sulphur Fuel Oil)

Property	Test method	Measurement	Minimum	Maximum
Appearance	Visual	Optical	Tan/clear	clear
Color	ASTM D1500-02		0	2.5
Cetane Number	ASTM 976-91	ppm	45	none
Caloric Value	ASTM 2015	Kcal/kg	10,800	none
Sulfur Content	ASTM 4294-02	ppm	0	500
Flash point	ASTM 93-02	° C	56	none
Density	ASTM 1298-99	kg/l @ 15° C	0.82	0.86
Kinematic Viscosity	ASTM 445-03	cSt @40° C	1.5	5.5
Copper Corrosion	ASTM 130	3h @50° C (mm)	0	1.0
Ash	ASTM 482-02	% Weight	0	0.01
Water Content	ASMT 95	mg/kg	0	200
Residual Carbon	ASTM 189	10% resid, %wt	0	0.30
Distillation	ASTM 86	90% Recovery °C	0	380

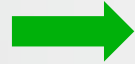
NOTE: This specification describes middle distillates in crude oil refining that are referring to **Diesel Fuel Grade No. 2-D S500** used for off- road engines and machinery which includes: Tractors, Harvesters, Cranes, Excavators, Boilers, Diesel power generators, Transport refrigeration units, **Marine diesel (MGO)**, and Heating applications.

Our business model designs, manufactures, and commercializes *Waste-to-Energy* TMCC plants



Manufactures and sells TMCC plants

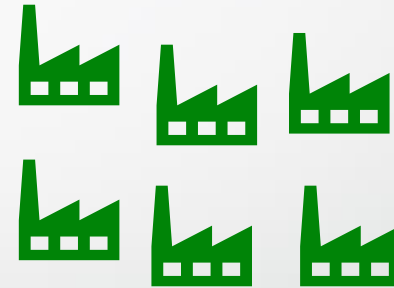
- Oversees installation, commissioning, training, and operation of turnkey plants
- Leads R&D of projects



Investor

Purchases and operates TMCC plants

- Finances TMCC plants
- Operates own and/or third party plants
- Commercializes end products



TMCC plants manage waste & produce energy

- Eliminates landfill pollution
- Produces sustainable synthetic diesel with net-zero carbon footprint
- Independent profit center selling products



Multipurpose TMCC plant applications

1. Chemical catalytic oiling and liquid fuel synthesis process
2. Thermal desorption of sludges and muds in multiple industries
3. Thermo mechanical dryer for treatment of sticky materials
4. Upgrading for heavy oils, crude conversion, vacuum bottoms, and bitumen

Current market state & competition landscape

Competitive analysis of TMCC Diesel , in direct numerical comparison to other biofuels:

Process	Efficiency*	Yield L/Ha/Y	Hu MJ/Kg	Density Kg/L	Yield toe/Ha/Y**	Costs \$/L	Costs \$/L Diesel***
Methanol	40-50%	5,000	21.1	0.80	2.0	0.40	0.92
Ethanol	33-50%	4,200	27.7	0.80	2.2	0.48	0.84
RME ¹	45-54%	1,600	37	0.90	1.3	0.61	0.71
FT Diesel ²	40-47%	2,000	42.5	0.85	1.7	0.77	0.83
TMCC Diesel ³	75-80%	9,000	45	0.86	5.9	0.37	0.37

Source: Ekokat analysis, 2023

* Energy efficiency = (calorific value of product – auxiliary power)/ calorific value of raw material

** 1 toe = energy equivalent of 1 metric ton of oil = 41.87 GJ

*** USD \$/L Diesel = \$/Lt Diesel equivalent = \$/38.7 MJ

1. RME = Rapeseed-based Biodiesel
2. FT Diesel = Fischer-Tropsch method
3. For TMCC Diesel, costs can be substantially lowered with larger plants

Each ton of diesel produced in TMCC prevents 3.143 tons of CO₂ emissions compared to incineration

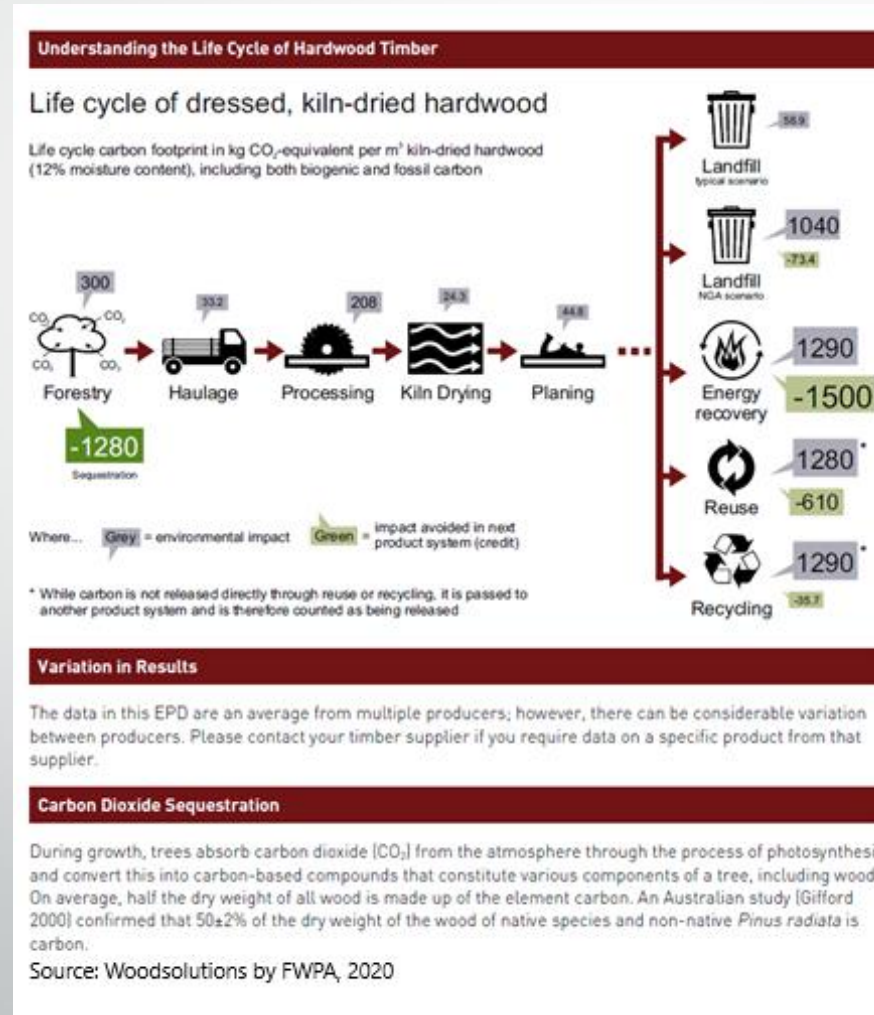
CO₂ emissions analysis of TMCC Diesel , in direct numerical comparison to incineration:

Input Material	CO ₂ Produced by Incineration	Co ₂ Produced by TMCC Technology	Savings CO ₂ in %
Cellulose	100%	40.0%	60.0%
Cellulose & Rubber or Bitumen	100%	14.0%	86%
Oils and Plastics	100%	9.0%	91.0%

CO₂ produced in the TMCC process originates solely form the oxygen contained in biomass and the exhaust of the power plant used to run the plant

Source: Ekokat analysis, 2023

CARBON CREDITS-2.15 kg CO₂e / liter of Synthetic Diesel
INCOME-Carbon allowance futures of \$900,000 USD+ / yr,
@ \$80 USD / ton CO₂e



Proposed CAPEX of \$5.0M to purchase a TMCC 500 kW plant to process sugar cane bagasse

Total investment is \$5,500,000 USD:

- \$5.0 million USD in one turnkey TMCC 500 kW plant
- \$500,000 USD of auxiliary equipment, installation and commissioning, and working capital during the construction period to finance the operation

Investment provides full ownership of TMCC 500 plant

Financial model assumptions

- Operation time: 8,000 hours/year
- Process capacity: 13,000 tons/year of sugar cane bagasse @ 10% humidity
- Production of synthetic diesel: 5.3 million liters/year
- Sales price of synthetic diesel: \$1.13 USD/liter
- Sales of synthetic diesel: \$4.8 million USD (80% efficiency)
- COGS: \$0.4 million USD
- Operation cost and expenses: \$0.6 million USD
- Depreciation: 1 year accelerated depreciation allowance
- CO₂ emission savings of 11,400 tons/year; Carbon credits of \$900,000 USD/year (not included in projection)

Financial model

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Main operating assumptions											
Diesel produced (000 litres) @ 80% efficiency		4,238	4,238	4,238	4,238	4,238	4,238	4,238	4,238	4,238	4,238
Price of diesel per litre		1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
(US\$ in 000)											
PROFIT AND LOSS STATEMENT											
Diesel sales (or diesel expense substitution)		4,807	4,807	4,807	4,807	4,807	4,807	4,807	4,807	4,807	4,807
Cost of goods sold		(418)	(418)	(418)	(418)	(418)	(418)	(418)	(418)	(418)	(418)
Depreciation		(5,000)									
Operating expenses		(574)	(574)	(574)	(574)	(574)	(574)	(574)	(574)	(574)	(574)
Operating profit		(1,185)	3,815	3,815	3,815	3,815	3,815	3,815	3,815	3,815	3,815
Income tax		0	(789)	(1,145)	(1,145)	(1,145)	(1,145)	(1,145)	(1,145)	(1,145)	(1,145)
Net income		(1,185)	3,026	2,671	2,671	2,671	2,671	2,671	2,671	2,671	2,671
CASHFLOW STATEMENT											
Net income		(1,185)	3,026	2,671	2,671	2,671	2,671	2,671	2,671	2,671	2,671
Depreciation		5,000									
Changes in working capital		(597)									
Free cashflow		3,218	3,026	2,671	2,671	2,671	2,671	2,671	2,671	2,671	2,671
Investment in TMCC 500kW plant and accesories	(5,500)										
Free cashflow after capital investment	(5,500)	3,218	3,026	2,671	2,671	2,671	2,671	2,671	2,671	2,671	2,671
Cummulative FCF after capital investment	(5,500)	(2,282)	744	3,415	6,086	8,756	11,427	14,098	16,768	19,439	22,110
			Payback								
VALUATION ANALYSIS											
Payback	Year 2										
IRR of FCF after capital investment (*)	53%										
NPV of FCF after capital investment @ disct rate of 20%	5,333										
(*) no terminal value or carbon credits considered											

Financial model results

- Based on a 500kW plant
- Bagasse processed of 13,000 tons per year with 10% humidity
- Total investment of \$5.5 million USD, including working capital
- Payback is 2 years
- 10 year IRR of investment is slightly over 50%
- NPV of \$5.3 million USD @ 20% discount rate

Team has 30+ years experience in the production of biofuels & waste management industries



Marcelo Fernandez

- Founder of Ecolat (2007) as a producer of sustainable fuels with net-zero carbon footprint
- Patent holder as Inventor (US10953381 B1, Mar 2021), Chemical Reactor for Catalytic Conversion of Organic Material into Diesel and other Liquid Fuels
- Chemical reactor developed for original patent holder of catalytic conversion originated at Siemens' R&D labs with Federal funding from Germany (1980's)
- 2x Founder of waste management companies : Aquarec (2017), Ecoquim (1990)
- BS in Chemical Engineering and Computer Systems ITESM
- MBA University of Texas at Austin



Thermtech AS

- Norwegian Technology with patented thermal desorption technology (Thermomechanical Cuttings Cleaner or TCC)
- Plant manufacturers with 60+ plants operating around the world
- Global Operations include Norway, UK, Netherlands, Nigeria, Egypt, Kazakhstan, Kuwait, Russia, Turkmenistan, Argentina and Germany.
- Customers include big players such as M-I SWACO, Halliburton, SAR Kuwait, Scomi Oil Tools, Veolia and the Total Waste Management Alliance (TWMA), which brands it as "TCC RotoMill" for offshore use.



Associated risks & mitigation factors



Risks

- 500kW plant has not been tested on large-scale commercial operation
- Regulatory approvals and environmental permits by application and by country
- Availability of catalyst



Mitigation

- All tests conducted to date on a 200kW test plant have yielded expected results
- Based on tests performed, operating efficiencies and yields of a 500kW plant have been projected with statistical levels of confidence
- Ecokat and Thermtech will work with client in obtaining all required local permits
- Catalyst used in TMCC technology is readily available worldwide

Associated risks & mitigation factors



Risks

- Equipment performance
- Chemical performance



Mitigation

- Thermtech guarantee for equipment manufacturing defects
- Extended maintenance policy for periodic hour setback to zero
- Thermtech provides resale assistance if equipment is discarded by client
- Ecokat has test-derived evidence on operation of a 200kW unit
- Given allowable material input, chemical reactions are not sensitive to scale

Thank you

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