EQTEC™

Beyond fossil fuel

Carbon-negative, baseload energy and biofuels for energy security and independence

December 2022

PHOTO: EQTEC commercial-scale Market Development Centre in Croatia (Bešlišće)

EQTEC IS NEW ENERGY INFRASTRUCTURE

Decarbonisation of both waste management and energy generation

BASELOAD

Genuine **alternative to fossil fuels** for baseload energy based on continual waste availability and 24 x 7 x 365 performance

VERSATILE

60 feedstocks and the full range of offtake applications including electricity, thermal, SNG, H_2 and other biofuels

CLEAN

CO_2 emissions **30% lower than incineration**; no nitrous oxide, toxic dioxins, furans or heavy metals

PROVEN

Two R&D facilities and **four EQTEC plants** built, one with a decade of exceptional operational availability

GROWING

Eight EQTEC plants operational or under construction with 14 under development and 200+ in the pipeline

COMMERCIAL

Projects using our technology are **profitable**, and we **guarantee** annual operational uptime of 86%

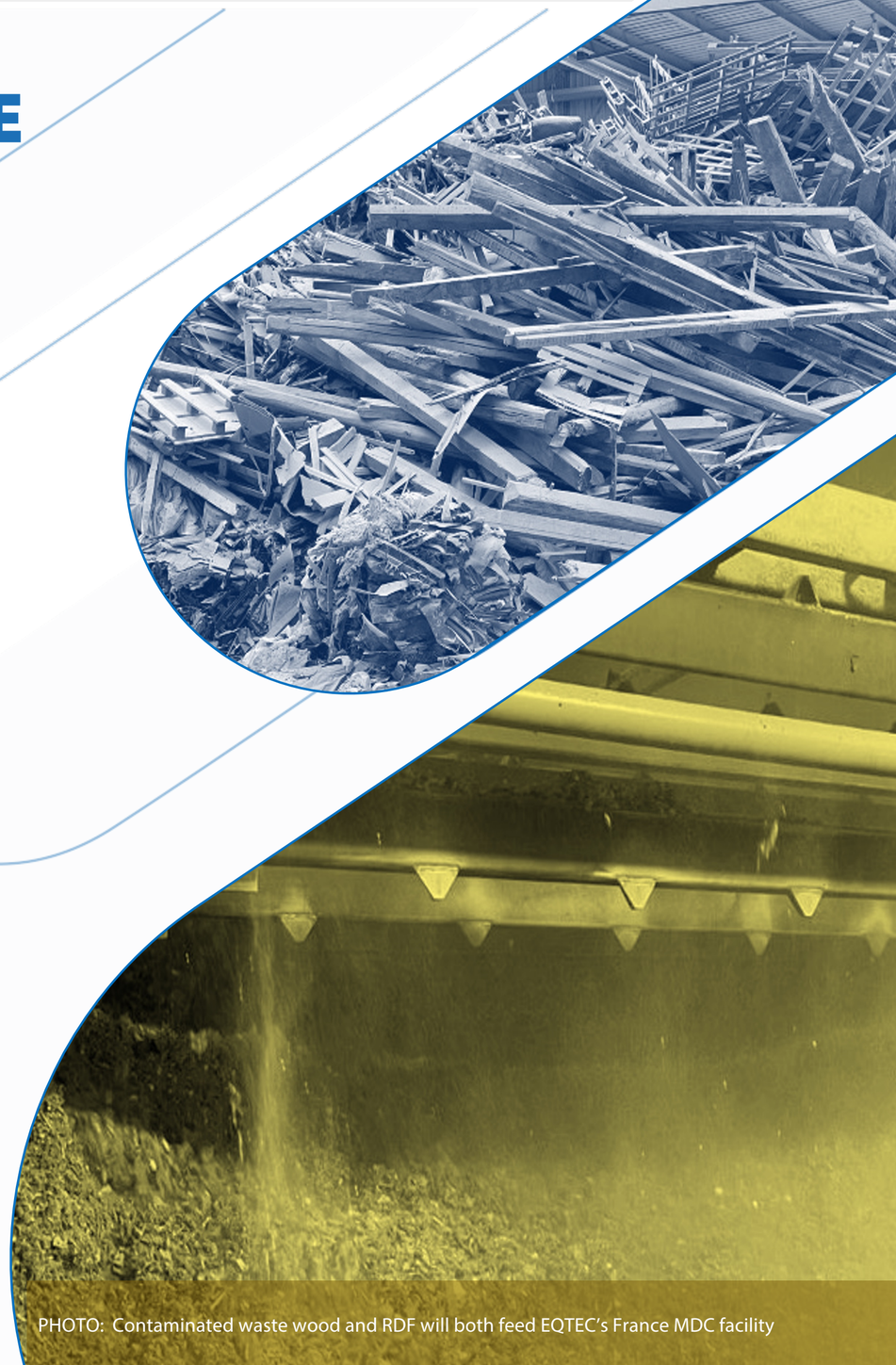
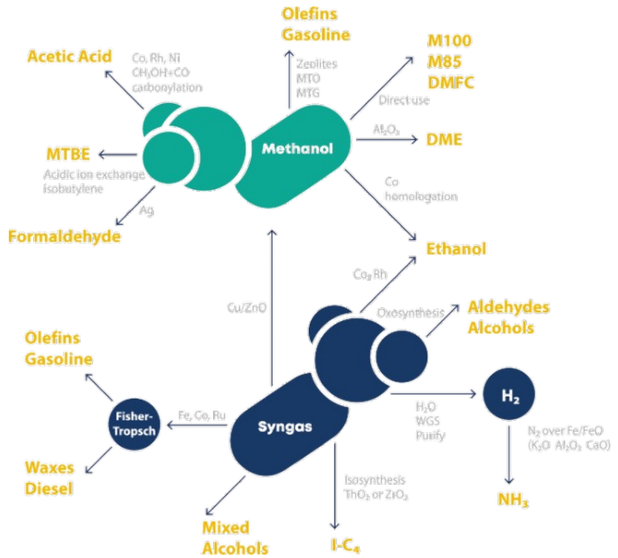


PHOTO: Contaminated waste wood and RDF will both feed EQTEC's France MDC facility

SYNTHESIS GAS (‘SYNGAS’)

Fossil fuel replacement…EQTEC makes it from waste

- (Fossil fuels)
- Forestry biomass
- Agricultural biomass
- Industrial waste
- Municipal waste



- Electrical power
- Thermal energy and steam
- Synthetic Natural Gas (SNG)
- Hydrogen
- Liquid fuels
- Methanol
- Biochar

Syngas consists primary of **hydrogen**, **methane**, **carbon dioxide** and **carbon monoxide**; EQTEC’s syngas is the purest on the market, with only trace quantities of **hydrocarbons**, making it ideal for **advanced biofuels and other applications**

PHOTO: CTO Yoel Alemán with Lead Contractor on site at North Fork plant

EQTEC™

LEADERSHIP

Nearly a century of collective management experience

EQTEC (AIM:EQT) is publicly traded and led by a Board of Directors including these four

David Palumbo, CEO

- 20+ years in private equity, infrastructure, venture capital, including renewable energy, digital and cleantech
- B.Sc and M.Sc, Electrical engineering
- LatAm, UK, Europe, CIS
- EQTEC since 2018 (CEO from September 2019)

Jeff Vander Linden, COO

- 25+ years in business & operations strategy, IT and business programme delivery, digital transformation
- PwC, IBM, Capgemini, SABMiller, AB InBev, Diageo
- UK, Europe, Japan, AsiaPac, India, North America
- EQTEC since July 2020 (COO since December 2020)

Yoel Alemán, CTO

- 20+ years in gasification of biomass and MSW/RDF, following PhD in gasification
- R&D plants and commercial scale plants; renowned for reviving failed gasification projects
- PhD in chemical engineering (focus on gasification), author of three patents and counting
- EQTEC since 2010

Nauman Babar, FD

- 20 years of international experience within corporate finance, audit and Finance transformation
- PwC, EY, Accenture, Mott Macdonald, Woodlands Energy Services
- Fellow of the Institute of Chartered Accountants
- EQTEC since July 2021

90%

OPERATIONAL UPTIME

120,000+ OPERATING HOURS

TECHNOLOGY VERSATILITY
= COMMERCIAL VIABILITY

GUARANTEED AT 7,500 HOURS P.A. (c. 86%) BY CONTRACT

PHOTOS: EQTEC monitoring & control systems; EQTEC-enabled commercial plant; EQTEC R&D facility

EFFICIENCY AND VERSATILITY

EQTEC's IP is not a piece of equipment but world-leading design & engineering

EQTEC equipment is the physical manifestation of its end-to-end process know-how

EQTEC PROPRIETARY

COMPUTATIONAL MODELLING

Proprietary modelling allows accurate prediction of process, quantity and quality of syngas & bottom ash to ±5%.

EQTEC PATENT

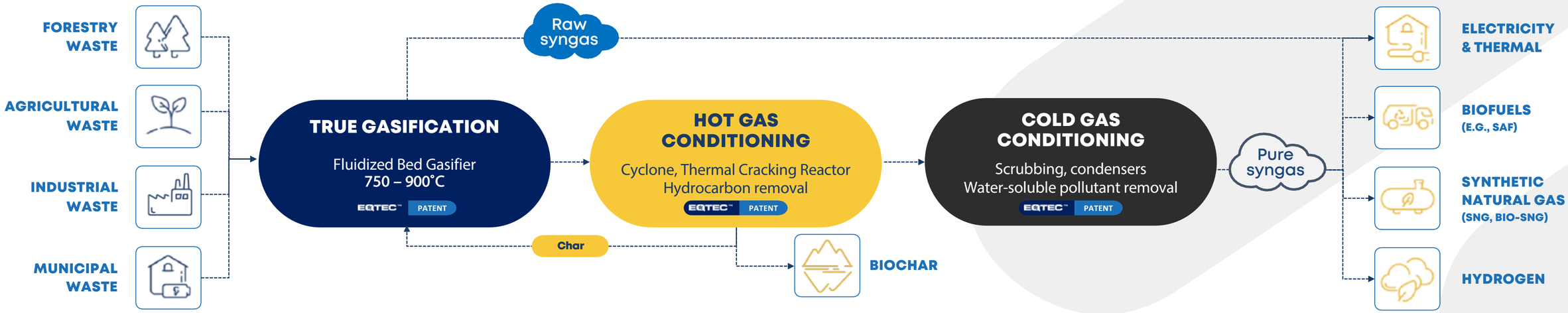
REACTOR DESIGN

Bespoke design of all components enables maximum offtake of CO, CH_4 and/or H_2.

EQTEC PROPRIETARY

CONTROL SYSTEM

Exclusive system manages heat, pressure, churn and other reaction factors to target relevant feedstock/application combination.



EQTEC PROPRIETARY

FEEDSTOCK LIBRARY

~60 feedstocks tested and documented fast-tracking modelling and enabling design for efficient operations

EQTEC PATENT

SYNGAS CONDITIONING

EQTEC **'tunes' the syngas** for the level of purity to suit the application, including ultra-pure for advanced biofuels or hydrogen

EQTEC PROPRIETARY

MONITORING & FEEDBACK

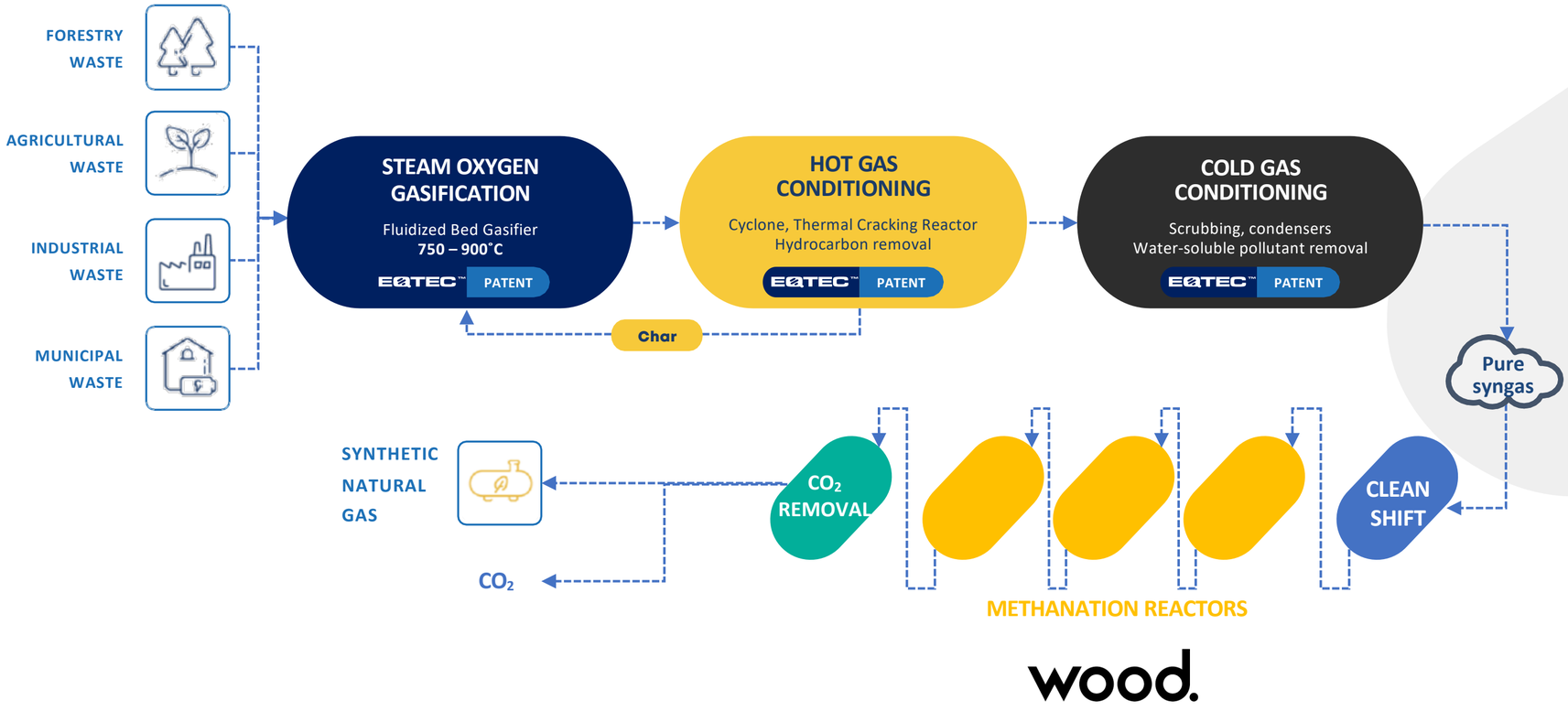
Real time, continuous monitoring allows variations in control system to improve efficiency and quality of process for specified feedstock/application combination.

WASTE TO RNG OR H_2

EQTEC syngas is the key differentiator for high efficiency, advanced biofuels

With partners such as Wood, we convert pure syngas to RNG or clean hydrogen

EQTEC SYNGAS WITH WOOD VESTA METHANE OR HYDROGEN SEPARATION



wood.

SYNGAS COMPOSITION FOR CLEAN HYDROGEN

following conditioning, based on biomass gasification 3 – 5

COMPOUND		UNIT	VALUE
Hydrogen	H_2	% vol.	32.0 – 34.0
Carbon dioxide	CO_2	% vol.	30.0 – 35.0
Carbon monoxide	CO	% vol.	20.0 – 25.0
Methane	CH_4	% vol.	6.5 – 8.5
Water	H_2O	% vol.	2.4 – 2.8
Hydrocarbons	C_2H_y	% vol.	0.0 – 0.5
Hydrocarbons	$C_3H_y – C_5H_y$	% vol.	0.0 – 0.1
Nitrogen	N_2	% vol.	0.0 – 0.1
Tar		mg/Nm^3	< 3.5

GREEN HOUSE GAS (GHG) FOOTPRINT

EQTEC outperforms nearly every alternative in terms of low GHG emissions

GHGs include seven harmful gases* with a warming impact on the climate, measured in CO_2 equivalent (CO_{2e})

EQTEC outperforms other waste-to-energy alternatives and on balance other technologies that do not address waste emissions

	$KgCO_{2e}$ per kWh			
Technology	Emissions [2]	Landfill impact [3]	Total	vs. EQTEC
Anaerobic digestion	(0.21)	--	(0.21)	-124%
EQTEC	**0.85**	**--**	**0.85**	**--**
Incineration (best in class)	1.33	--	1.33	56%
Landfill	1.61	--	1.61	89%
Wind (onshore)	--	1.61	1.61	89%
Hydro [1]	0.0075	1.61	1.62	90%
Wind (offshore)	0.01	1.61	1.62	90%
Tidal [1]	0.03	1.61	1.64	92%
Geothermal [1]	0.03	1.61	1.64	93%
Nuclear	0.06	1.61	1.67	96%
Solar [1]	0.10	1.61	1.71	100%
Incineration (EU average)	1.83	--	1.83	115%
Gas-fired power station	0.87	1.61	2.48	191%
Coal-fired power station	0.87	1.61	2.48	191%

[1] indicates lifecycle emissions, including upstream supply chain and end of life
[2] based on in`dustry analysis and benchmarking of actual CO_2 emissions
[3] applies only to technologies that do not address emissions from prevention of waste landfill

EQTEC's process addresses both waste and energy generation emissions without burning and without releasing GHGs from its end-to-end gasification process

EQTEC's process is…

- 22% more efficient than incineration at waste-to-energy conversion
- 56 – 115% less emitting of greenhouse gases ($CO2_e$) than incineration
- 89% less emitting of greenhouse gases ($CO2_e$) than landfill disposal

…because EQTEC's process produces…

- No toxic dioxins and furans
- No fly ash
- No nitrous oxide emissions
- No fly ash
- Non-hazardous bottom ash with no poisonous metals
- Autothermic reactions that drive a continuous process without added heat

* The seven GHGs (and their CO_{2e}) are: CO_2 carbon dioxide (x1); CH_4 methane (x28); N_2O nitrous oxide (x265) and four 'F gases' (x23,500), including HFCs hydrofluorocarbons, PCFs perfluorocarbons, SF_6 sulphur hexafluoride and NF_3 nitrogen trifluoride.

BUSINESS MODELS

Energy transition, energy security, energy independence…from waste

Replication of designs, financial models, plans and delivery teams


Belišće plant in Croatia

INDUSTRIAL

- Standard build on factory site
- Captive feedstock, instant offtaker
- Replicable, scalable across sites

Lead markets: UK, France, Ireland, Croatia

Flagship projects: Movialsa (Spain), Deeside (UK), Seps Revel (France), Data Centre 1 (Ireland), Belišće (Croatia)

Pipeline opportunities: 12

MUNICIPAL

- Distributed, replicated plants
- Address waste issue (e.g., forest fires, contaminated plastics, toxic waste)
- Energy is value-added by-product

Lead markets: USA (West), Ireland

Flagship projects: North Fork (USA), BMEC (USA), Napa (USA), Southport (UK)

Pipeline opportunities: 20+


Build site for BMEC project in Wilseyville, California, USA


Larissa plant in Greece

AGRICULTURAL

- Built near feedstock/ waste
- Pool local requirements (e.g., from farms)
- Return baseload energy & biofuels

Lead markets: Greece, Italy, Croatia, Ireland

Flagship projects: Larissa, Livadia, Drama, Nobilis (Greece), Italia MDC (Italy), Karlovaç (Croatia), Shannon (Ireland)

Pipeline opportunities: 20+

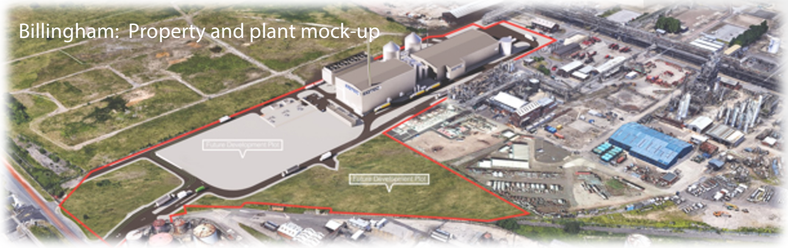
UTILITY

- Centralised, customised plants
- Feedstock (e.g., MSW, RDF) transported in
- Offtake aimed at high-value clients

Lead markets: UK, France

Flagship projects: France MDC, Billingham (UK), Gardanne, Limoges, Lucy (France)

Pipeline opportunities: 5


Billingham: Property and plant mock-up

10 years

COMMERCIAL OPERATIONS

1 PLANT FOR 1+ DECADES
2 R&D FACILITIES
4 COMMERCIAL-SCALE PLANTS
5 PLANTS UNDER CONSTRUCTION
14 PLANTS UNDER DEVELOPMENT

+100s OF QUALIFIED OPPORTUNITIES IN A GROWING ‘PIPELINE OF PIPELINES’

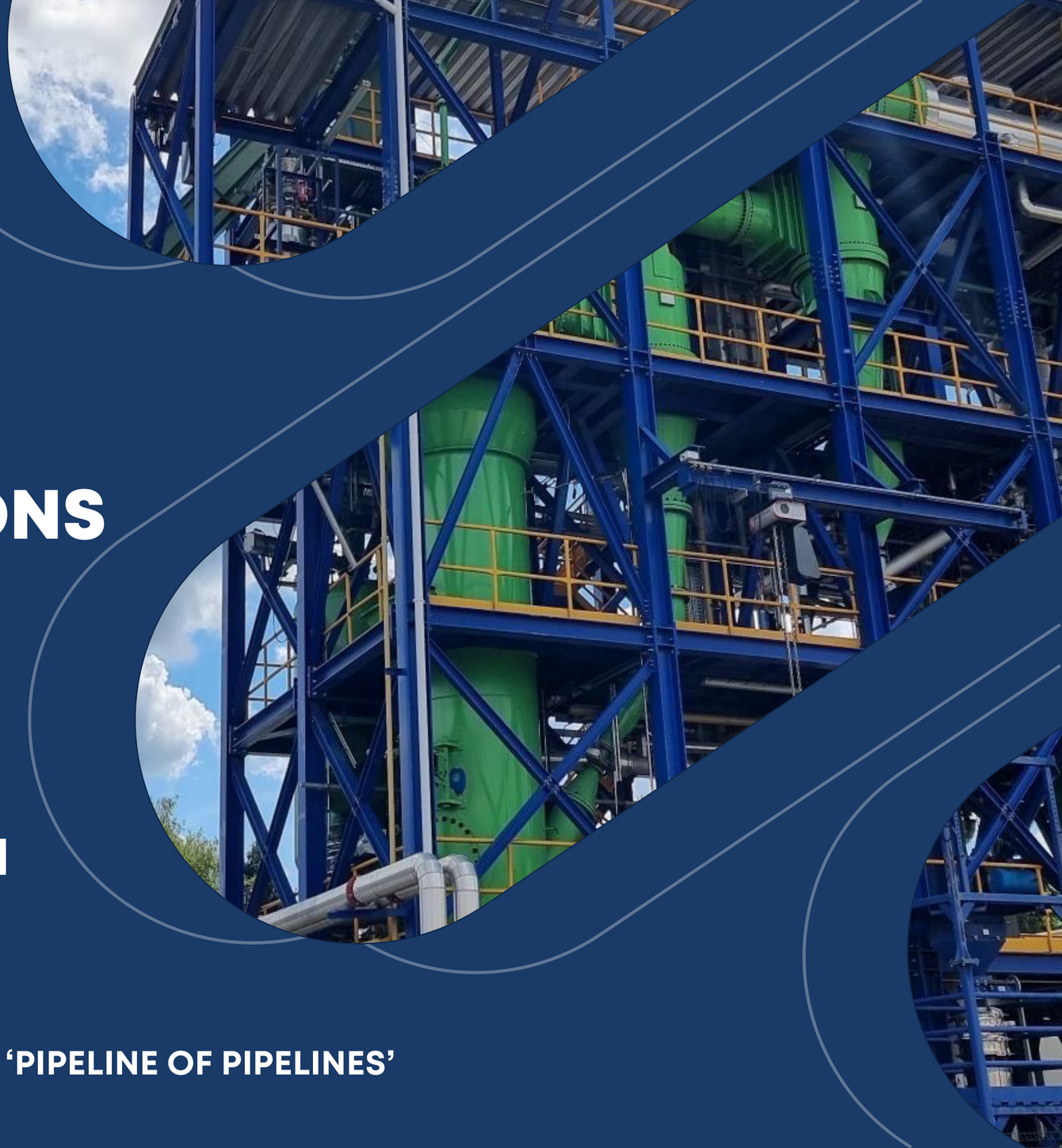


PHOTO: EQTEC commercial-scale Market Development Centre in Croatia (Belišće)

TRACK RECORD

6 plants built and commissioned, with 3 running and 2 being recommissioned

The longest running plant has clocked over a decade at 90% operational availability

ON-PREMISE FACILITY FOR INDUSTRIAL AGRICULTURE

Mostos Vinos y Alcoholes, S.A. (Movialsa)

Ciudad Real, Spain

- Start-up date 2011
- 5.9 $MW_{e/th}$
- Agricultural waste (incl. olive pomace, wine must)
- Electricity, heat

Externally audited operational data (2015 – 2020)

Parameter	Unit	2015	2016	2017	2018	2019	2020
Plant availability[1]	*hrs/year*	8,600	7,300	7,060	7,800	7,314	8,157
	%	*98*	*90+*	*90+*	*90+*	*90+*	*93*
Equivalent electrical efficiency[2]	*%*	45	39	38	39	38	38
Electricity/feedstock ratio[3]	$kW_e/kg_{biomass}$	1.4	1.4	1.4	1.4	1.4	1.4

[1] benchmark for gasification is 4 – 5,000 hrs/year
[2] benchmark for this particular feedstock is 30%
[3] benchmark for incineration is <1.0

R&D PILOT PLANT

Universidad de Extremadura

Badajoz, Spain

- Start-up date 2010
- Biomass trials
- Fischer-Tropsch (gas-to-liquid) trials

R&D PILOT PLANT

Université de Lorraine (LERMAB)

Nancy, France

- Start-up date 2015
- Biomass trials
- RDF trials
- Contaminated plastic trials
- Steam oxygen (2022)

RECOMMISSIONING 2022

Syngas Italy

Gallina, Italy

- Start-up date 2015
- 1.0 $MW_{e/th}$
- Forestry and agricultural waste
- Electricity, heat

RECOMMISSIONING 2022

Belišće

Belišće, Croatia

- Start-up date 2016
- 1.5 $MW_{e/th}$
- Agricultural waste
- Electricity, heat, biochar

FUTURE TARGET

Karlovo

Plovdiv, Bulgaria

- Start-up date 2016
- 3.0 – 5.0 $MW_{e/th}$
- Agricultural waste
- Electricity, heat
- (Currently de-commissioned)

PIPELINE

Projects follow strategy, prioritised to demonstrate specific solutions

EQTEC has well over 200 opportunities in its complete pipeline, increasing weekly

INDUSTRIAL

LIVE 2023

Croatia MDC

Belišće, Croatia

- Global paper products company
- Industrial waste
- 8,000 tonnes/year
- Electrical power (1.5MW_e), biochar

LIVE 2024

Deeside

Flintshire, UK

- Toyota, national grid
- RDF, industrial waste
- 77,000 tonnes/year
- Electrical power (9.9 MW_e), H_2

LIVE 2025

Seps Revel

Haute-Garonne, France

- Seps France (waste company)
- Contaminated plastics
- 25,000 tonnes/year
- Electrical power (4.5 MW_e), RNG

PIPELINE:

- **Global auto manufacturer.** Industrial waste → CHP, H_2
- **Global consumer goods.** Industrial waste → CHP, RNG, H_2
- **Ireland data centres.** Industrial waste → CHP, RNG

UTILITY

LIVE 2024

France MDC

Doubs, France

- Waste management facility
- Contaminated waste wood, RDF
- 45,000 tonnes/year
- Electrical power (6.5MWe)

LIVE 2025

Limoges

Nouvelle-Aquitaine, France

- Multinational utility company
- Wood waste
- 35,000 tonnes/year
- RNG (10.5m NM^3/year)

LIVE 2026

Billingham

Teesside, UK

- UK utility, major fertilizer company
- RDF, industrial waste
- 200,000+ tonnes/year
- Heat (34MW_{th}), electricity (25MW_e), H_2

PIPELINE:

- **Multinational utility (France).** Mixed waste → RNG
- **Italian utility.** Biomass → LNG
- **California utility.** Biomass → RNG

MUNICIPAL

LIVE 2024

UK MDC

Merseyside, UK

- Southport community
- RDF
- 25,000 tonnes/ year
- H_2

LIVE 2023

North Fork

California, USA

- NF Community Development Council
- Waste wood, forest fire accelerant
- 35,000 tonnes/year
- Electrical power (2.0MW_e), biochar

LIVE 2024

BMEC

California, USA

- Wilseyville council
- Waste wood, forest fire accelerant
- 24,000 tonnes/year
- Electrical power (3.0MW_e), biochar

PIPELINE:

- **20+ California towns.** Wood waste, RDF → CHP, biochar
- **Karlovaç, Croatia.** Wood waste, RDF → CHP, biochar
- **Connecticut, USA.** MSW/RDF → CHP, RNG, H_2

AGRICULTURAL

LIVE 2022

Italia MDC

Tuscany, Italy

- Farming cooperatives
- Straw waste, wood waste
- 12,500 tonnes/year
- Electrical power (1.0MW_e) ,biochar

LIVE 2023

Larissa

Thessaly, Greece

- Agrigas (local owner-operator)
- Agricultural waste
- 3,750 tonnes/year
- Electrical power (0.5MW_e)

LIVE 2024

Livadia

Boeotia, Greece

- Farming cooperatives
- Straw, wood waste, olive waste
- 7,500 tonnes/year
- Electrical power (1.0MW_e)

PIPELINE:

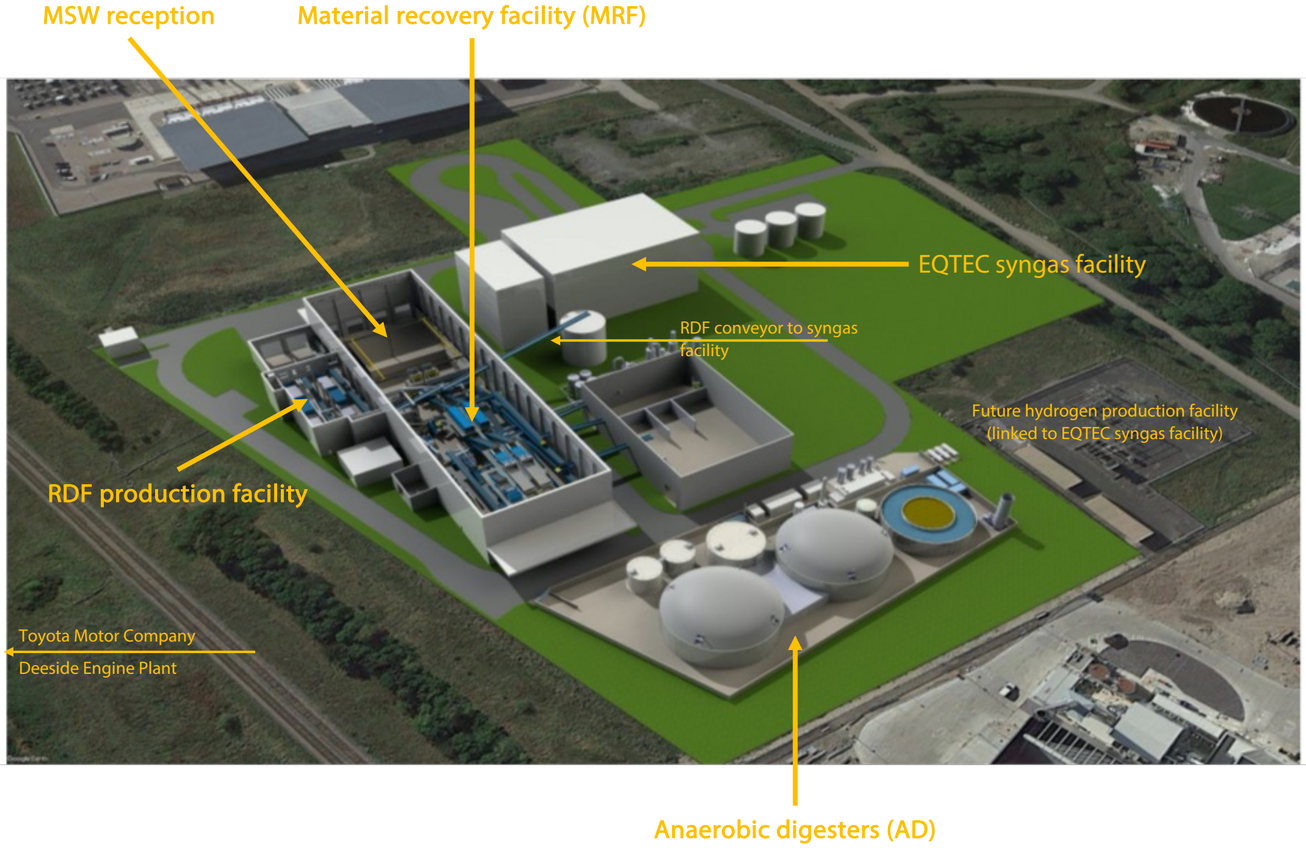
- **Nobilis, Greece.** Agricultural waste → CHP
- **Drama, Greece.** Forestry and wood waste → CHP
- **20+ Greece locales.** Mixed biomass → CHP, RNG, H_2

EQTEC INDUSTRIAL

Industrial waste transformation for clean power to Toyota Motor Company UK

Multi-technology capability for conversion of waste into clean gas, power and hydrogen

Deeside Industrial Estate, Deeside, Flintshire (north Wales), UK
6.27 hectares (15.5 US acres) site



Feedstock:

- 182,000 tonnes of waste per year
  - 60% MSW (Municipal Solid Waste)
  - 40% Industrial waste
- Processed into:
  - Recyclables (e.g., glass, metals), for processing off site
  - Biogenics (e.g., food waste), for processing in the AD facility
  - Refuse-derived Fuel/RDF (e.g., plastics), for processing in the syngas facility

Technologies:

- Anaergia MRF and RDF technologies
- 2.0 MW Anaergia anaerobic digestion technology
- 9.9 MW_e EQTEC advanced gasification technology

Offtake:

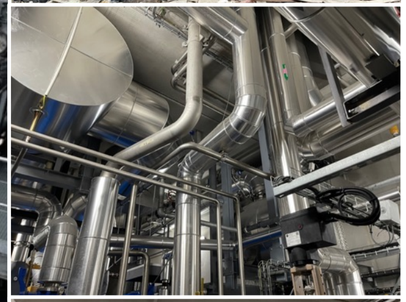
- 77,000 tonnes per year RDF (for syngas production)
- 5.5 million nM^3 biomethane per year
- 77 – 87,000 MWh electricity per year
  - 27,000 MWh (c. 35%) to Toyota Deeside Engine Plant, with potential to vary
  - Balance sent to national grid
- Potential for production of 700,000 kg per year of hydrogen

EQTEC UTILITY

Large utility company now negotiating for exclusivity of the plant

Three types of feedstock, including contamintated wood and RDF from municipal waste

France MDC, Villers-sous-Montrond, Doubs, France
Located on large-scale waste management site, for power generation and export to grid



PHOTOS: New build plant with legacy technology installed

Feedstock:

- 45,000 tonnes of waste per year
  - Waste wood (EU grade A)
  - Contaminated waste wood (EU grade B) from demolitions
  - RDF (from municipal solid waste)

Technology:

- Retrofit of failed gasification technology on new-build site
- 6.5 MWe EQTEC advanced gasification technology
- Upgrade, replacement of some ancillary technologies

Offtake:

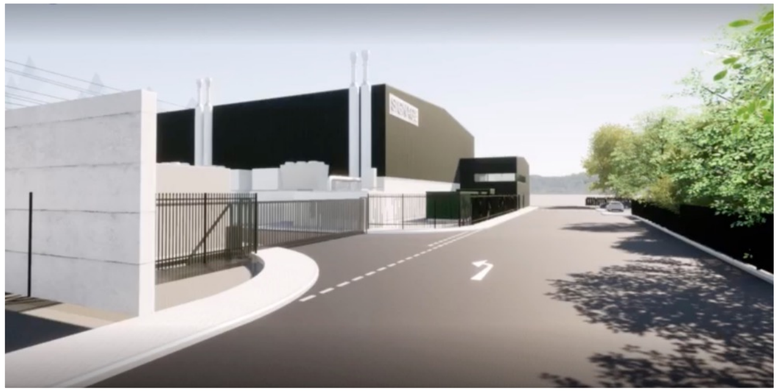
- 6.5 MWe electrical power for export to national grid
- Potential to increase output in future with existing technology (subject to further permissions)
- Preferential tariff agreed with French utility
- Annual revenues of c. €10 million, with potential to further improve economics

EQTEC MUNICIPAL

Waste treatment and hydrogen production in a green, tree-lined neighbourhood

The combined plant would deliver 35% or more of total Southport energy requirement

UK MDC, Southport, Merseyside, UK
Municipal waste dump as waste-to-electricity and H_2 facility



PHOTOS: Current status of waste facility, with artist depictions of target plant

Feedstock:

- 80,000 tonnes of municipal solid waste (MSW) per year
- Processed into:
  - Recyclables (e.g., glass, metals), for processing off site
  - Biogenics (e.g., food waste), for processing in the AD facility
  - Refuse-derived Fuel/RDF (e.g., plastics), for processing in the syngas facility

Technologies:

- Anaergia MRF and RDF technologies
- Anaergia anaerobic digestion technology
- EQTEC advanced gasification technology
- Wood Vesta syngas-to-hydrogen technology

Offtake:

- 6.0 million nM^3 biomethane per year, export to grid
- Gas-to-electrical power conversion for 9MWe export to grid
- 25,000 tonnes per year RDF (for syngas production)
- 250,000 kg per year of hydrogen, exported to grid
- (Potential for nearby expansion to 3 – 4 times of hydrogen production)

EQTEC MUNICIPAL

The local-to-local, distributed business model is aimed at forest fire prevention

All of the plants in the pipeline are 2 – 3 MW_e forestry waste-to-power & biochar facilities

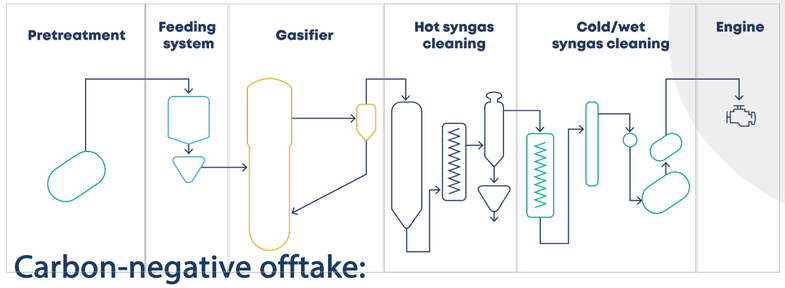
California pipeline, USA
20+ communities through the Sierra, Central Valley and Bay Area

PHOTO: EQTEC technology construction on site at North Fork

Background information:

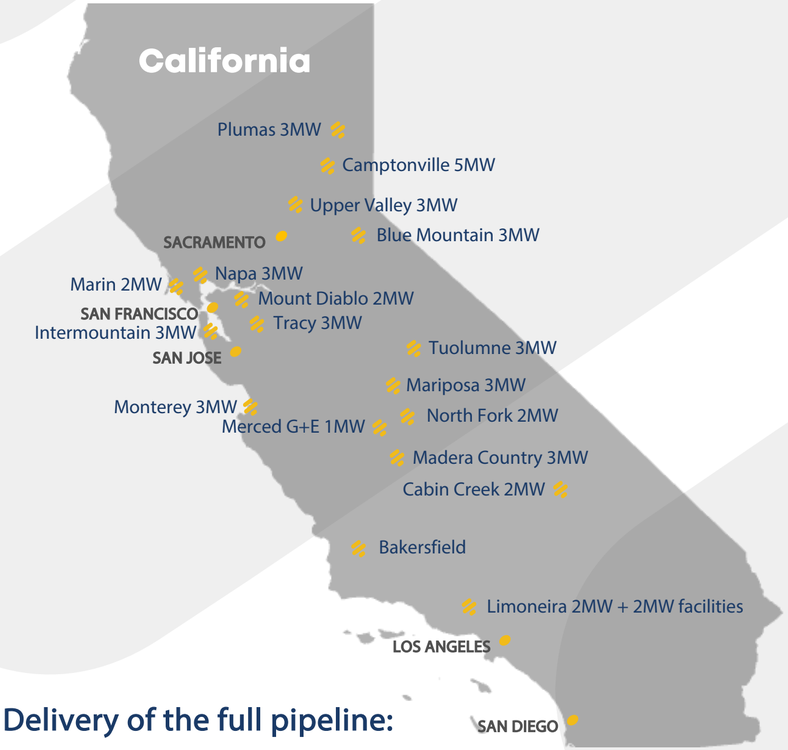
With forestry wood waste an increasing problem in the state of California, the North Fork plant will improve both environmental and economic outcomes for the local area, annually converting 17,550 metric tonnes of the biomass into clean electric and thermal energy and into 1,600 metric tonnes of biochar per year, for use as a soil substrate in reforestation and for agricultural plantations.

Biomass-to-energy configuration:



Carbon-negative offtake:

Heat and power from forestry biomass, plus biochar production. The State of California uses biochar along the highway system to filter ground water, with commercial agriculture using it to sequester CO_2 and enrich soil and increase crop yields.



Delivery of the full pipeline:

332,735 MTCO2e avoided by 2025

≈ total, annual emissions of 72,334 cars`

(for more information on EQTEC in California, please see separate Appendix document)

EQTEC AGRICULTURAL

Energy security and independence to remote communities that need it

Located in one of Italy's most beautiful valleys, delivering clean energy from waste

Italia MDC, Castiglione d'Orcia, Siena, Tuscany, Italy
Agricultural waste from local framing cooperatives and forestry, returning power to the grid

Feedstock:

- 7,000 tonnes of agricultural and forestry waste per year
- Dual feeding-in system supports high-density and low-density feedstocks for versatility and responsiveness to changing feedstock prices

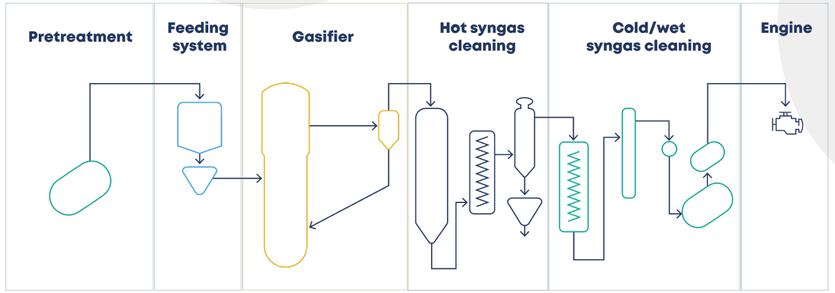
Technologies:

- EQTEC advanced gasification technology
- GE Jenbacher 612 gas engine

Offtake:

- 1.0 MWe electric power generation, for export to grid at preferential tariff

Biomass-to-energy configuration



EQTEC R&D

Committed progress at the leading edge of syngas technology

END-TO-END SYSTEM

The EQTEC facility hosted at the Université de Lorraine in France is a complete, EQTEC plant in microcosm, able to process tonnes of waste samples with precise measurement of process performance

BIOMASS & RDF

The facility has been running (with regular upgrades) since 2015, testing dozens of biomass feedstocks, as well as SRF and RDF from municipal and industrial waste, building our library of data

CONTAMINATED PLASTICS

In 2021, EQTEC and the university (UL) completed successful trials with plastic waste contaminated with hydrocarbons and hazardous chemicals, opening a new business pipeline in France

STEAM-OXYGEN

In 2022, EQTEC added steam-oxygen gasification capabilities, making possible the regular testing of advanced biofuels applications including RNG, hydrogen and liquid fuels

COMMERCIAL CLIENT APPLICATIONS

Over the years, EQTEC and UL have received delivery of real samples of feedstock from a range of prospective clients, to refine its plant designs; the commercial testing pipeline for 2023 is full

PHOTO: EQTEC full scope, end to end R&D facility at Université de Lorraine (France)

EQTEC IN THE U.S.

EQTEC has strong links into the US and intends to grow there

- **EQTEC shareholding.** The company's largest shareholder is a US-based family office; it owns just under 20% of the total shares.
- **Legal entity.** The company is preparing for its formal registration in the US—either through a wholly-owned subsidiary or through a joint venture.
- **USA partners and pipeline.** The company has established project development, delivery and business development partners in California, Texas and Washington DC and works with other partners based in Arizona, Colorado and Missouri.
- **US procurement.** With its Texas-based partner, the company has completed a supplier assessment for a majority of its components for California plants, toward procurement of those parts in the US.
- **Earliest project.** One of the company's earliest projects (financial close 2020) is the North Fork project in California, the first in a large pipeline across that state.
- **Board member.** The COO is a native, US citizen (born and raised in Indiana, family in Virginia, attended university in Connecticut).

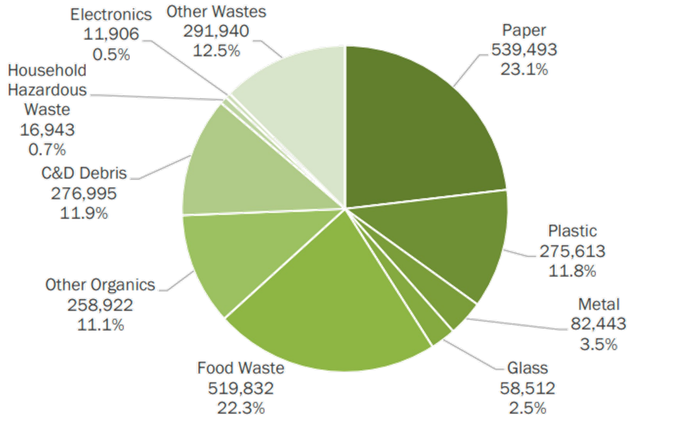
PHOTO: EQTEC modular gasification island build at North Fork plant

QUESTIONS FOR CONNECTICUT

New technologies could more efficiently and sustainably fill the MIRA gap

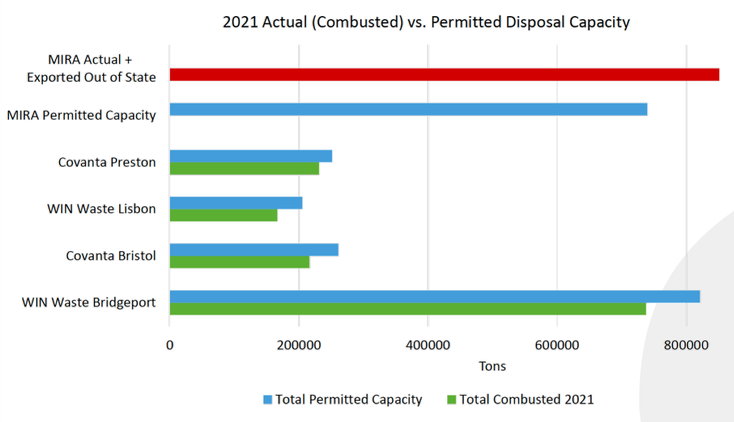
EQTEC relies on developers and owner-operators to deploy our technology in US

WHAT TO DO WITH WASTE



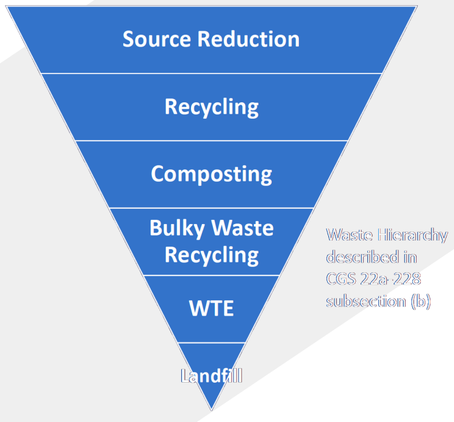
- Is CT considering anaerobic digestion and/or gasification for 1/3 of its waste (food waste and other organics)?
- How to cleanly dispose of highly calorific waste such as plastic and (potentially) construction & demolition debris?

EXTEND EXISTING TECHNOLOGIES



- Are current waste sites at full capacity or near it, to cover some of the MIRA 'gap?'
- Is the plan to extend permits to existing technologies and/or replace them?
- Is there stronger interest in large, centralized facilities or smaller, local ones suited to local waste-to-value?

OR EXTEND THE WASTE HIERARCHY



- (This resembles similar hierarchies in UK and EU, now changing for newer tech)
- How does CT view advanced gasification technology in this hierarchy?
- Is there still an appetite for landfill use (e.g., outside CT) and/or incineration (WTE)?

DATA SOURCE: DEEP, State of Materials Management in Connecticut paper

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PHOTO: Site for new, EQTEC-enabled waste wood plant at Wilseyville, California, USA