



Arigna Fuels

A real-life transition story from fossil fuel to one of the largest biochar producers in the world

Cathal Fitzgerald, Chairman, Arigna Fuels

www.arignafuels.ie

About the Company

- Production facility in Ireland and 4 distribution centers in the UK
- 75 employees
- \$15m revenues
- Started in coal



Our Early History

1900s

1980s – 90s

Mid 1990s

2010 – Present

Mining

Low Smoke
Coal
Manufacturer

Wind
Farms

Biochar &
Biocoal



Early Biochar Journey

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2010

Small-scale Pyrolysis
Equipment. Hired R&D
Manager



2012

1 TPH
Pyrolysis
Reactor



2017

Harvest
Flame



Biochar Journey - 2023

April

June

August

November

Delivery of Two 35k mt
Pyrolysis Reactors

Preparation
for
Installation

Installation

10 TPH
Pyrolysis
Reactor



Research is Crucial

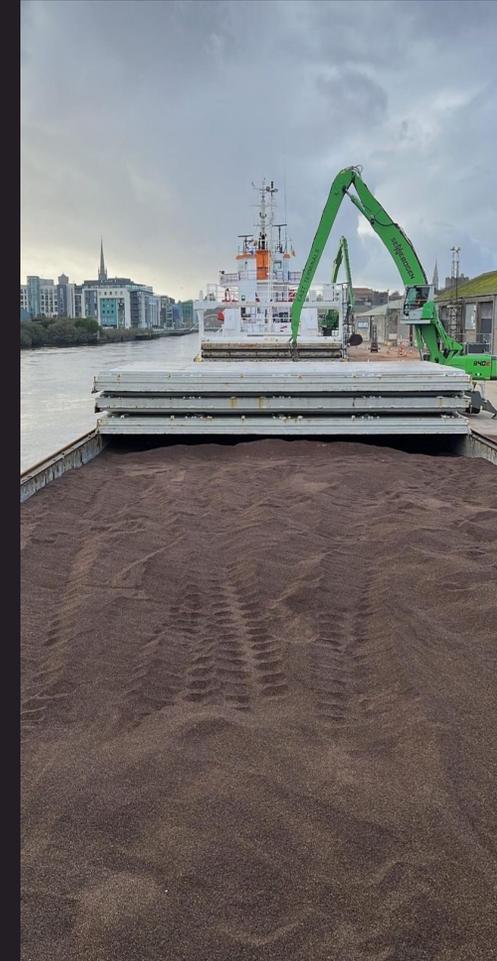
- \$10m+ invested
- Research facility and two research staff
- Focus is on testing, scaling and customer requirements
- Versatility is as important as scale
- Economic return



The Current Situation

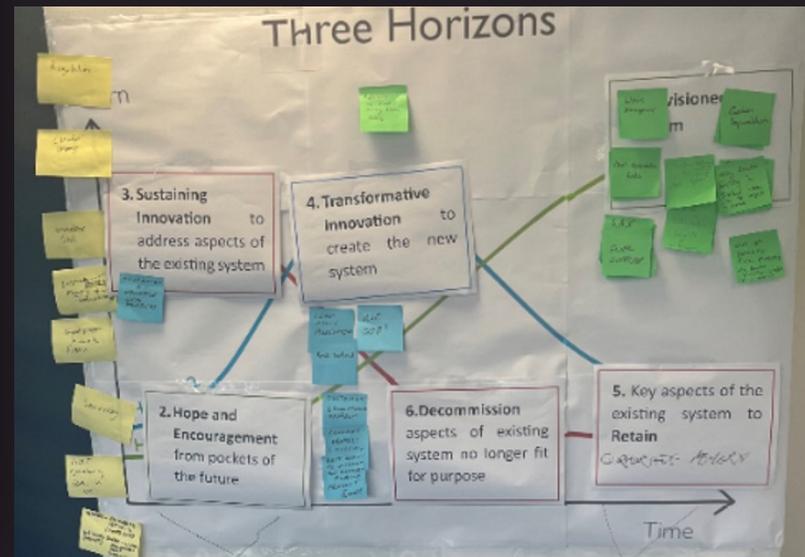
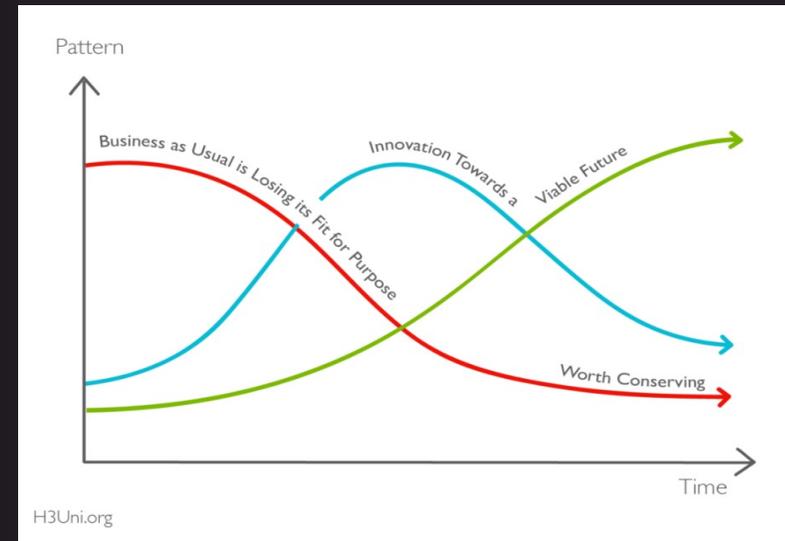
- We can provide multiple grades of biochar
- Excellent R&D facilities
- We can use many feedstocks
- Our main product is domestic biocoal
- We can adapt to and meet industrial customer demand

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The Transition

- Undertook a strategic review
- Used McKinsey's 3 Horizon Framework
- Suitable for companies in transition
- Importance of data and market input
- Translated into SMART goals



Challenges

- Seasonality of domestic fuel market
- Our location
- Security and diversity of feedstock supply
- Association with coal
- Too many opportunities of small scale
- Many opportunities have long lead times, requires certification or are marketing intensive

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Immediate Opportunities

- Large domestic fuel markets
- Coal users in industry
- Anaerobic digestion (bio-methane)



FORBES > INNOVATION > SUSTAINABILITY

Official U.K. Figures Show Air Pollution From Stoves And Fireplaces Has Doubled

While the IEA predicted a decline in coal in power stations, it said its use in heavy industries like cement production was expected to continue at high levels.  Phys.org

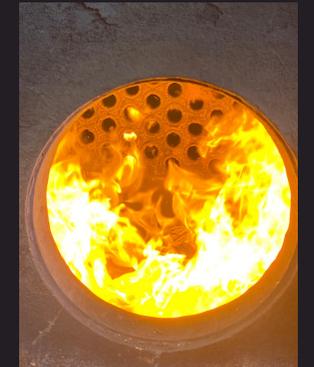


Bioresource Technology

Volume 341, December 2021, 125797

Review

A review of biochar in anaerobic digestion to improve biogas production: Performances, mechanisms and economic assessments



Medium Term Opportunities

- Building materials
- Carbon credits

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Long Term Opportunities

- Agriculture
- Horticulture
- Waste treatment

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Conclusion

- Expertise and capacity to produce large quantities of high-quality biochar
- Scale and adaptability are crucial
- Near term opportunity is industrial biocoal
- Medium term opportunity is carbon insetting in building materials
- Awareness / market creation / revenue





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Questions?

Cathal Fitzgerald, Chairman, Arigna Fuels

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