

Power generation with negative CO₂

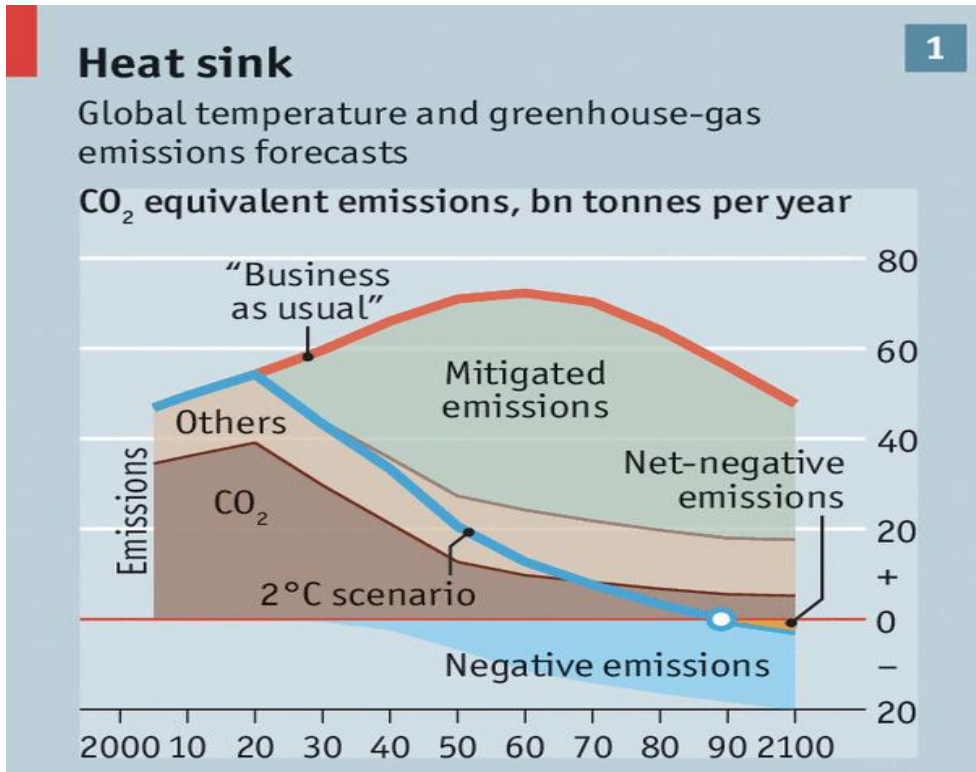
Rushlight Summer Show
14th June 2018

Nicky Chambers
CEO



OrigenPower

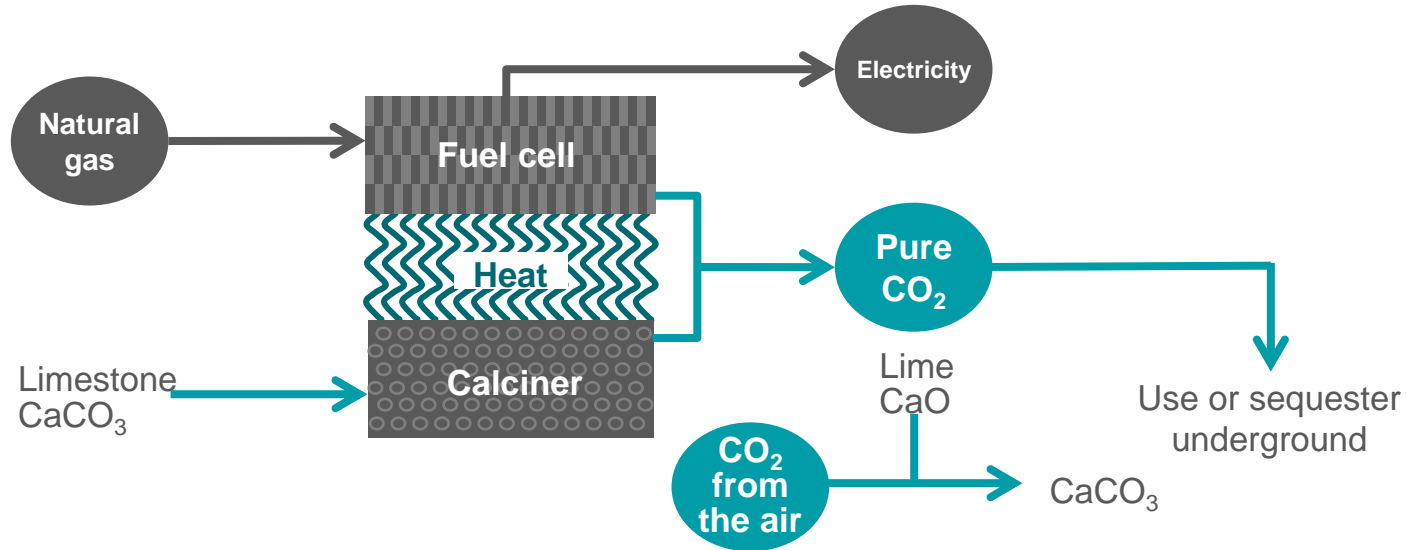
The Problem



Source: Economist

- All of the **1.5°** possible pathways to reach the Paris Climate Agreement require removal of 700 gigatonnes of CO₂ from the air.
- We currently have no proven technologies to take CO₂ from the air.
- The UN and national governments are calling for net zero emissions policy.

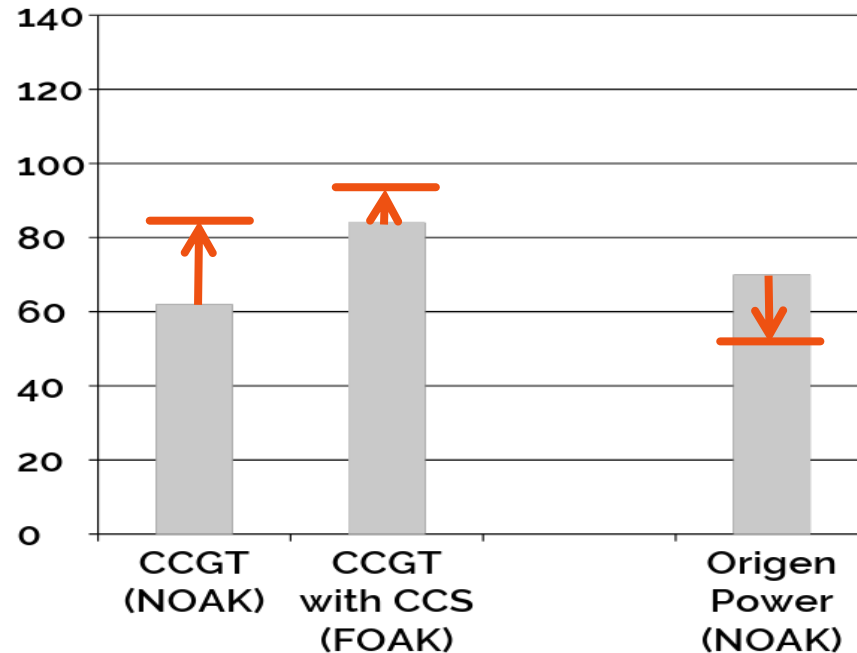
The Solution



- **Two patents** granted (UK)
- Integration of two **proven** technologies
- Produces all CO_2 as **pure** stream
- **Products:** electricity lime, pure CO_2 / CO_2 reduction

The Commercial Opportunity II

UK Levelised Cost of Electricity
2025 projections £/MWh



Source: BEIS 2016, Global CCS Institute

Carbon negative electricity generation

- 2025 CCGT will incur **£24/MWh** carbon cost
- CCGT + CCS will be more expensive
- ... and will still emit **~200g CO₂/kwh**
- Origen Power carbon adjusted LCOE **£51/MWh**
- OP removes **600g CO₂/kwh**

How does a 25MW plant stack up?

25MW Plant Economics

Origen Power
licensing
income
(per 25MW
construction) ←

£36.1m

Capex

2 years

Build time

20 years

Operating life

£9m

Annual profit

21%

Unleveraged
project IRR

86,000

tCO₂/year
removed

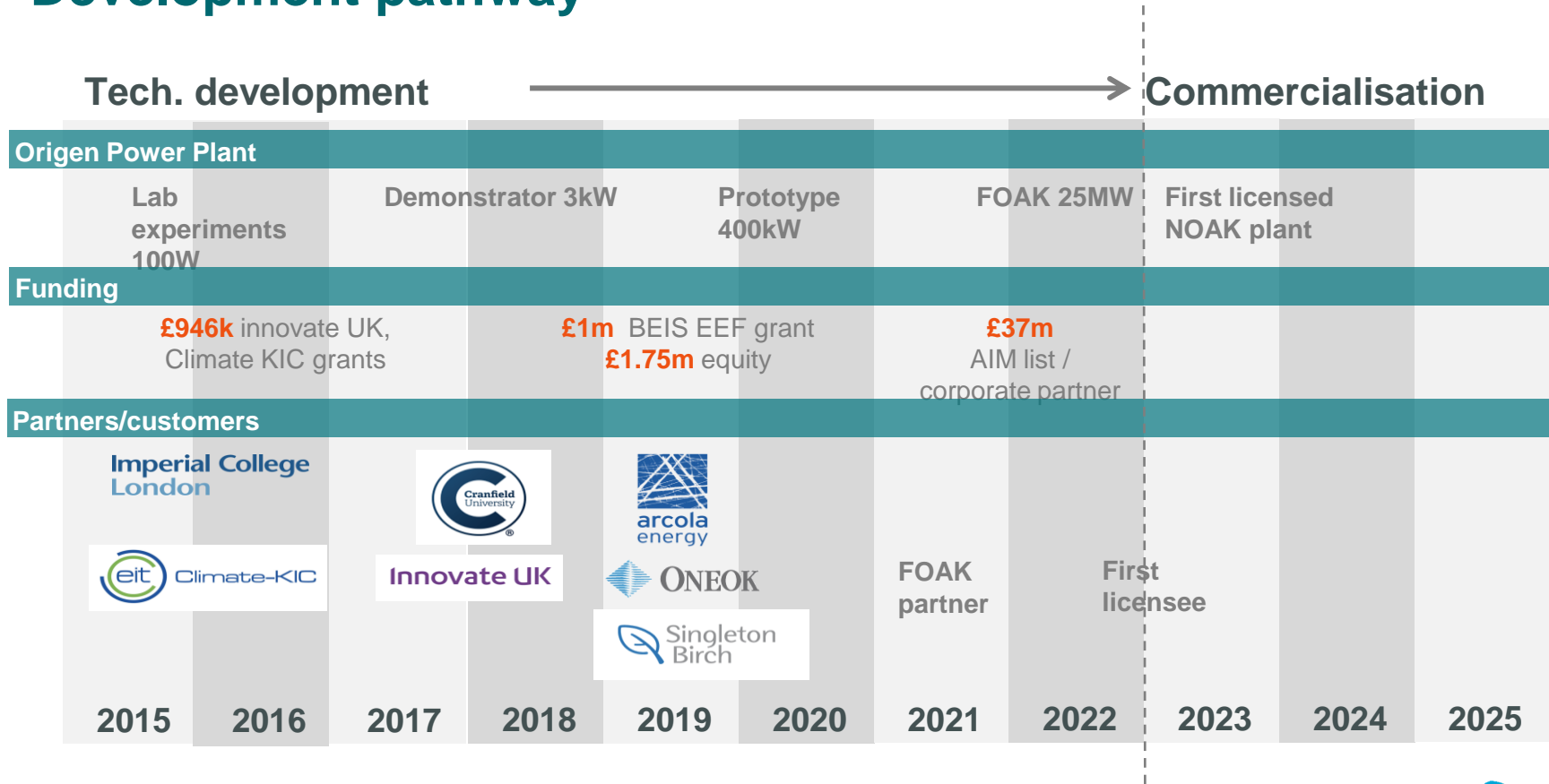
Competition – direct air capture of CO₂



BECCS

	OrigenPower	Global Thermostat	Carbon Engineering	CLIMEWORKS	BECCS
Cost \$/tCO ₂	\$0/t	\$10-30/t	\$136/t	\$600/t	>\$100/t
Low land footprint	✓	✓	✓	✓	✗
Low energy intensity	✓	✗	✗	✗	✓
Profitable model in 2018	✓	✓	✗	✗	✗
Location unconstrained	✓	✗	✗	✓	✗
Operating in market	✗	✓	✗	✓	✗

Development pathway



The Team



Tim Kruger

Founder and CTO Leader of Greenhouse removal policy research group at University of Oxford, inventor of greenhouse gas removal technologies



Barrie Jenkins

Chief Engineer. World expert with lifetime experience of designing and building lime technologies



Nicky Chambers

CEO. Serial eco-preneur with 30 years experience in carbon management and sustainability business



Paddy Thompson

CFO Chartered Accountant specialising in energy and carbon. Experience in successful in fuel cells business and high growth companies



Rick Jeffreys

Expert technical advisor with deep oil and gas industry and carbon capture experience



Charlie Curtis

Co-Founder and Non-executive director. Innovation consultant for high growth companies and serial entrepreneur

The Ask

Seeking initial £150k SEIS to release first £300k of government grant. Follow on £600k EIS Q1 2019 to release remainder of grant and fund commercialisation

Funding will last 27 months

With this round of financing we will:

- Design and build the pilot plant to demonstrate the Origen Power technology
- Build resource for commencing the licensing of the Origen Power technology

These funds and the grant income will be spent on:

- Pilot plant £1.5m
- Team consolidation & capacity building £0.5m

Cost Effective, Carbon Negative, Baseload Power



Reversing climate change
with patented technology
that removes CO₂ from the atmosphere
as it produces electricity.

