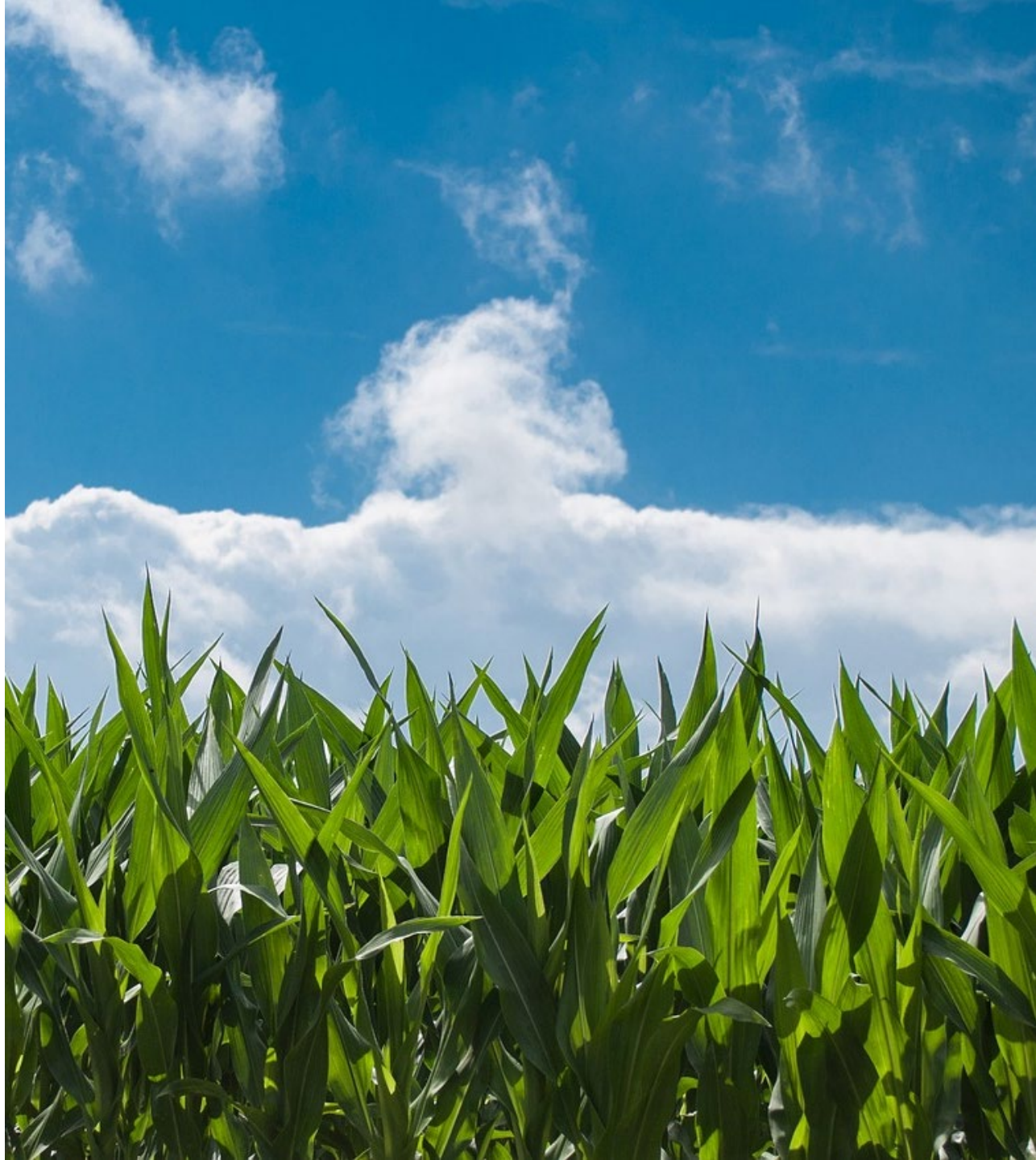
Leading green gas
aggregator & shipper

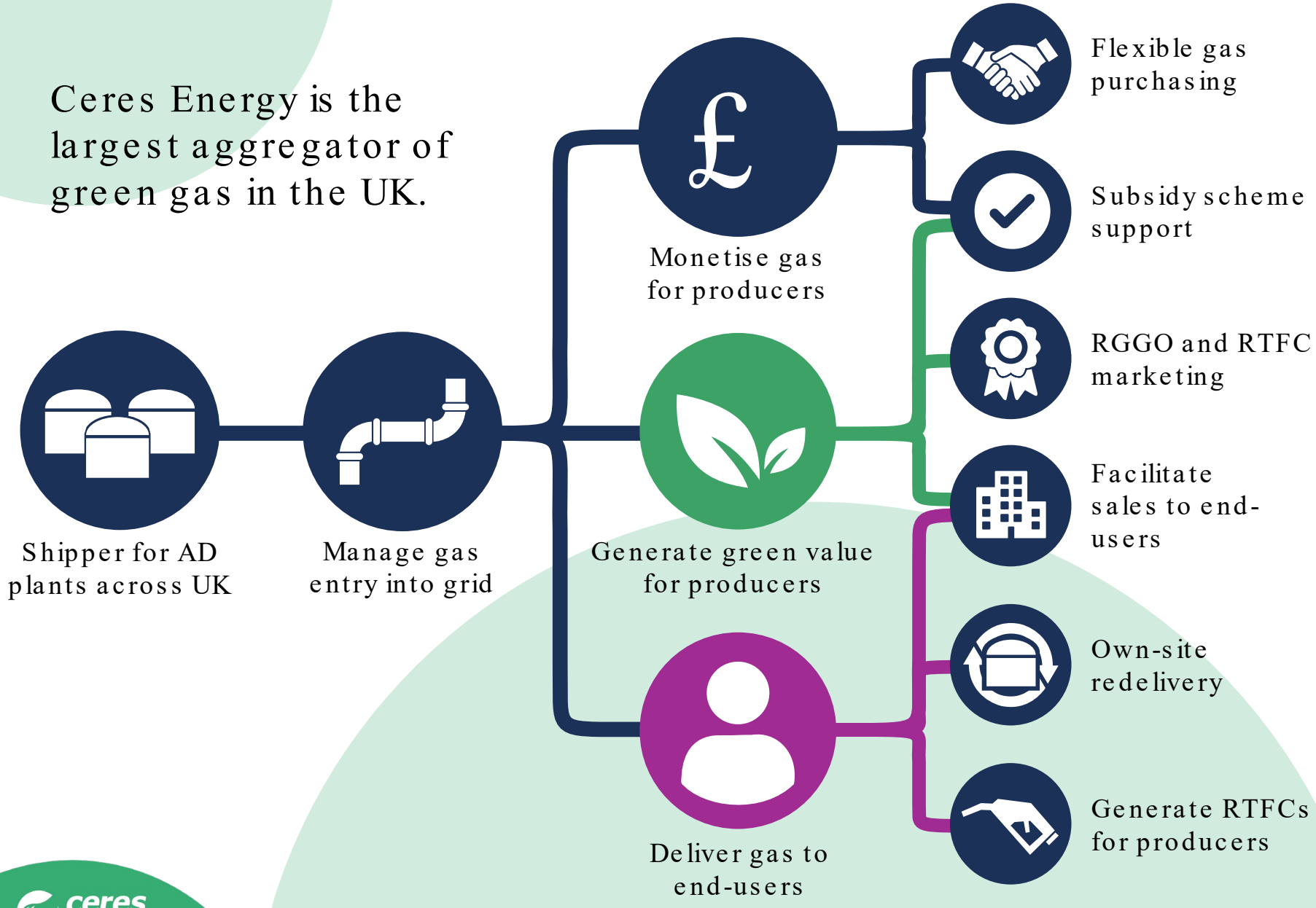
Biogas to Biomethane: The Carbon Trail

Helen Edwards
CEO



What we do

Ceres Energy is the largest aggregator of green gas in the UK.



1995
Began actively trading in the GB gas market

2008
Became licensed gas shipper in GB

2012
Became first commercial biomethane shipper in GB and began trading in green gas certificate market

2013
Became supplier for first bio-CNG station in GB

2017
ISCC certified for sustainable practices & transparent supply chain management

2017
Facilitated the first sale of GB biomethane to mainland Europe

2021
Became licensed gas shipper in ROI

2023
Became licensed gas shipper in NI

About us

64 /144

AD Meter Points in GB

2.1/5.9

TWh expected in 2025

1st

Contracted UK Hydrogen Shipper

2 /3

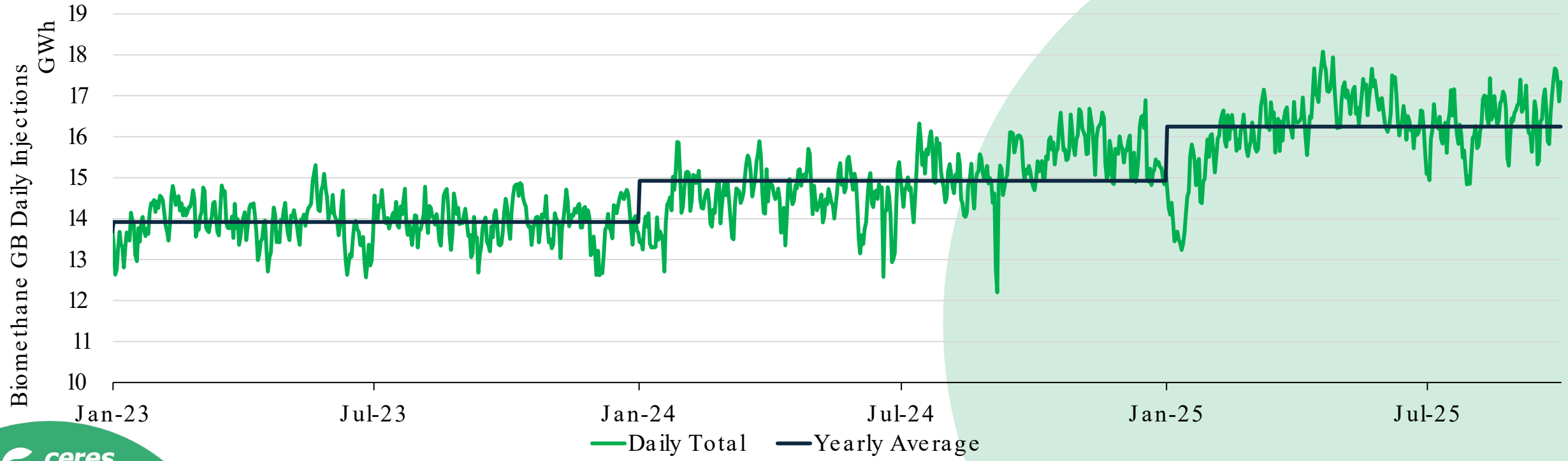
GB Injection Hubs for which we are the dedicated shipper

95%

Gas from AD in our Portfolio

Biomethane: Grid injection each year

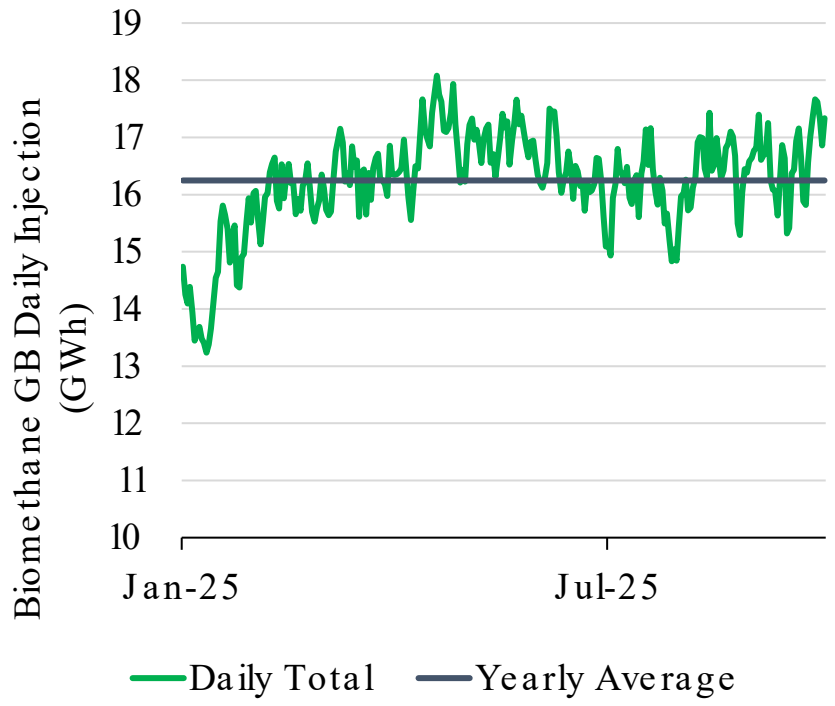
	2023	2024	2025*
Gemini Data (includes 8% propane)	5.1 TWh	5.5 TWh	5.9 TWh
Grid Biomethane (includes 0% propane)	4.7 TWh	5.0 TWh	5.5 TWh
Published Figures	7.5 TWh (Dukes)	7.7 TWh (Dukes) 5.5 TWh (FES)	N/A



Biomethane: Site breakdown

2025*

Gemini Data (includes 8% propane)	5.9 TWh
Grid Biomethane (includes 0% propane)	5.5 TWh
Other	0.1 TWh



5.6 TWh of Biomethane: Site breakdown

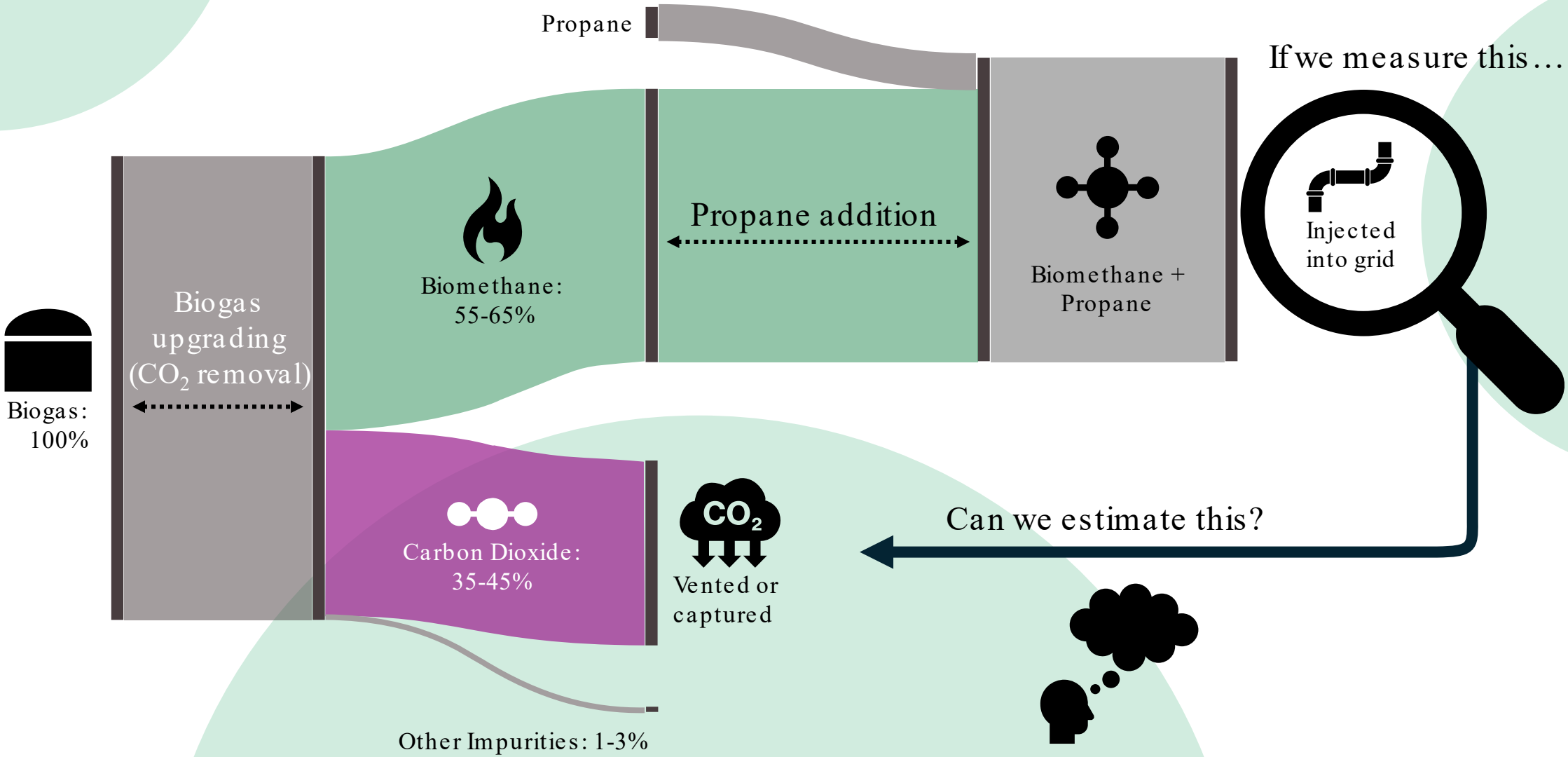
146 Sites
- 139 Onsite Grid Injection
- 5 Sites Injecting at Hubs
- 2 Other

CO_2 Separation & Capture

Our knowledge | Assumptions

	Capturing	Tech Compatible	Water-wash Limited	Undisclosed
Sites	32	41	19	54
Annual Production	1.6 TWh	1.3 TWh	1.2 TWh	1.5 TWh
Average Plant Size	51 GWh	31 GWh	62 GWh	27 GWh

Can we estimate CO_2 Based on Biomethane Injection?



John Baldwin's Rules of Thumb

We assessed a typical AD site and derived a CO_2 capture rule of thumb.

0.138 kgCO_2/ kWh of biomethane

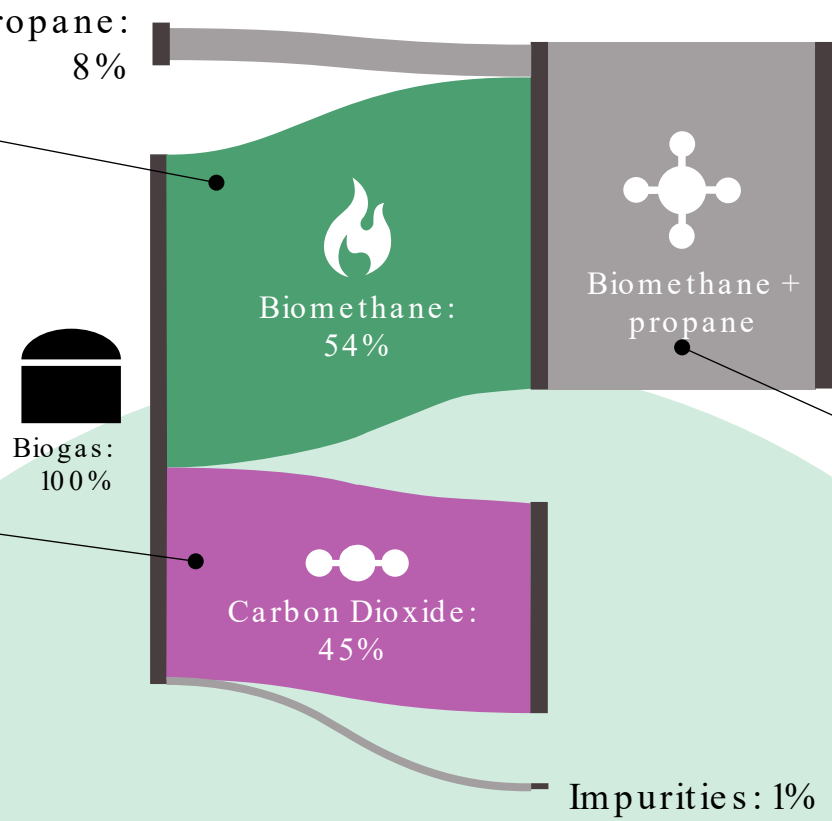
Propane exclusive biomethane inj.

01 Biomethane

- Biogas composition: 54%
- AD operation: 100%
- Biogas HCV: 21.16 MJ/m3
- Biogas Density: 1.203 kg/m3

02 CO_2 Capture

- Biogas composition: 45%
- CO_2 capture efficiency: 100%
- CO_2 capture plant availability: 97% (relative to BUU availability)



04 Gemini Data

- Energy (kWh) data on all injection points in GB

03 Biomethane Data

- Methane capture rate: 100%
- BUU availability: 97%

Biomethane and CO_2: All sites in analysis

BioCO₂ capture if all sites had appropriate technology on site

Site inclusion criteria	Number of sites
All sites	146

Biomethane
5.6
TWh

CO_2 Production
775,081
tonnes CO_2

At 2024 max capacity (7.7TWh) → ~1.06 million tonnes CO_2

Industrial CO_2 use is reported around 600,000 tonnes CO_2

All 146 sites in analysis

Captured CO_2: Active CO_2 capture sites

BioCO₂ capture is already underway in the UK via adapted separation technology or purpose-built plant designs.

Site inclusion criteria	Number of sites
Capturing	32

Biomethane

1.6 TWh

CO_2 Production

226,768 tonnes CO_2

Of 775,081tCO_2 (29%)

Active CO_2 capture sites

Potential for CO_2: Appropriate technology to capture CO_2

$BioCO_2$ capture requires appropriate technology; water-washing separation is ineffective, the below covers sites with alternative technology.

Site inclusion criteria	Number of sites
Tech compatible	41
Undisclosed sites	54 (73%* of 54 site's quantities used)

*73% of disclosed sites had suitable separation technology

Biomethane
2.4
TWh

CO_2 Production
328,620
tonnes CO_2

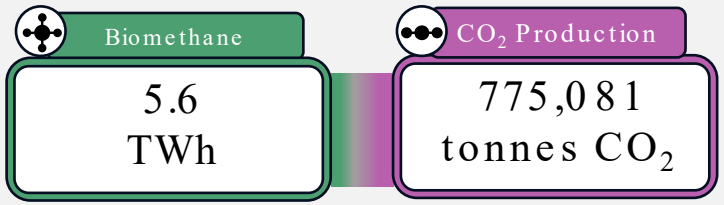
Of 775,081tCO_2 (42%)

Sites with potential to start capturing CO_2
Tech compatible
Undisclosed

BioCO_2: Summary

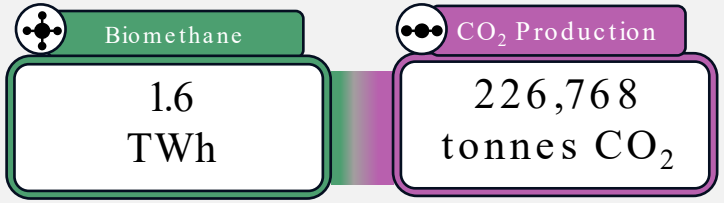
1 Full Potential

- 146 of 146 sites
- All sites contributing to analysis
- Doesn't consider any financial/technological restrictions at sites



2 Currently Active Sites

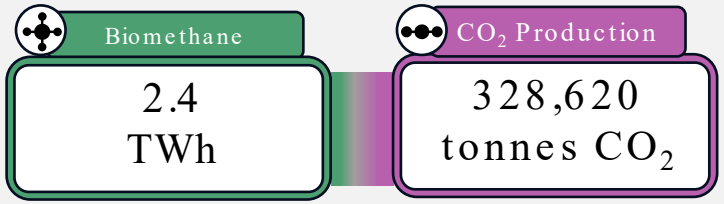
- 32 of 146 sites
- Includes satellite, onsite injection, and other known sites
- Based on our knowledge of sites already actively capturing CO_2



Combined
555,388 tCO_2 (72% of total)

3 Technology Compatible With Capture

- 95 of 146 sites (54 of which undisclosed)
- Includes satellite and onsite injection sites
- Uses confirmed technology where possible
- Where technology is undisclosed, 73% of quantities are used



How do you sell your CO_2?

We asked some of our biomethane producers:
How do you sell your CO_2?