



Project Carbon Harvest

AD plants without subsidy



UK's largest operator

12 anaerobic digestion plants developed, built and currently operated in the UK



-  Existing sites
-  In construction
-  New BECCS sites in the pipeline

12  Anaerobic digestion plants

500  GWh per year of biomethane

400  Farmers working with us

73  GWh per year of clean electricity

Development and operations

UK leader in anaerobic digestion

160

Biogas experts

12

Biogas plants developed, built and currently operated

0.5 TWh

Biomethane generated p.a.

£200 m

Assets under management for institutional investors

Trusted partner of
£200m of assets



Backed by 3i Infrastructure plc, a FTSE-250 listed firm worth over £3.4 million

The Future of Biogas

Project Carbon Harvest is a new opportunity to combine anaerobic digestion and carbon sequestration

Biomethane has moved to the forefront of the energy transition



Biomethane

Decarbonise gas networks

- Produced without subsidy
- Offering true additionality

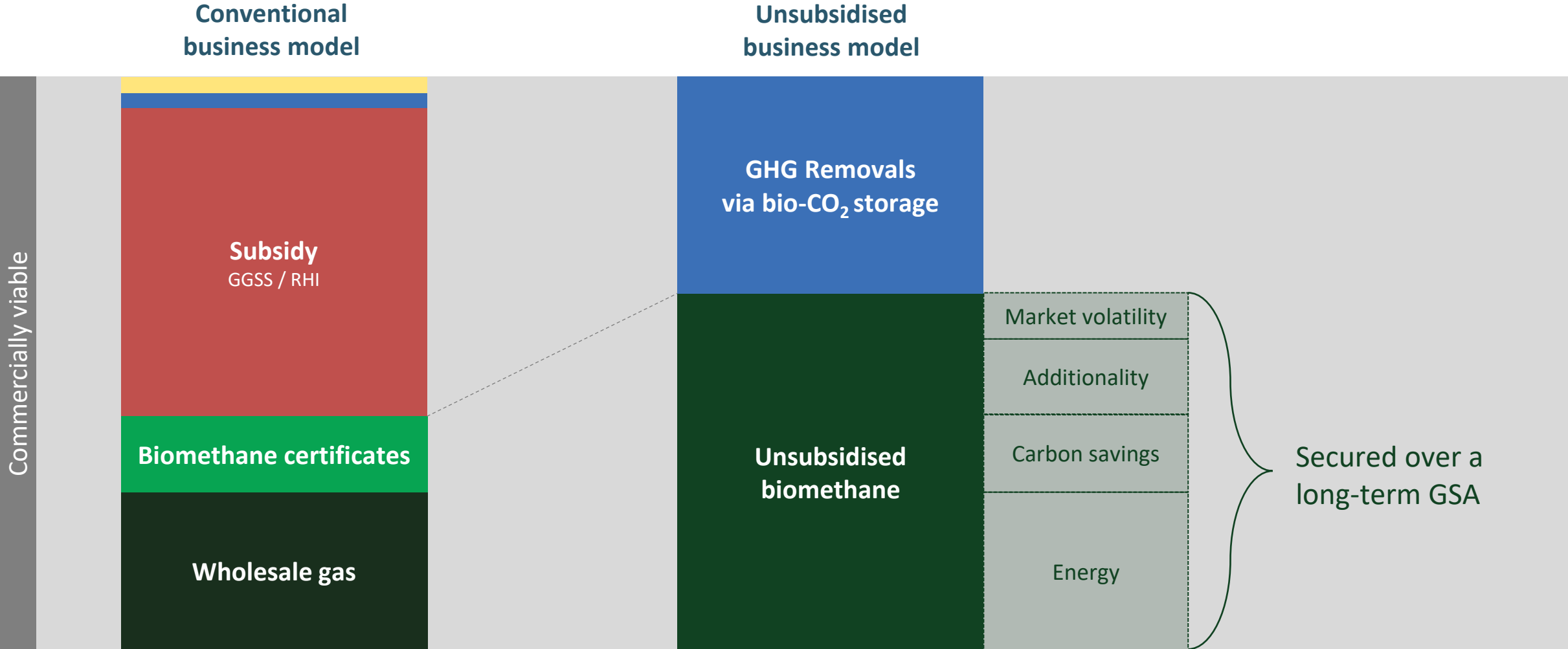


Carbon Sequestration

Deliver high value removal certificates








- Capturing CO₂ and permanently storing this in a reservoir 3000m below sea level.

Breaking AD's dependence on subsidies



Case study



AstraZeneca Requirements	Future Biogas Solutions
 Set Target 100% emission reduction by 2025 on 350 GWh demand	 Develop 125 GWh unsubsidised biomethane AD plant
 Avoid & Reduce Electrification, insulation and upgrades to reduce demand	
 Replace Unsubsidised low emission biomethane	 Biomethane Offtake 15 year agreement
 Offset Offset unavoidable residual emissions	 Carbon Offtake Offset purchase for carbon sequestration




Media Coverage



CCS opportunities

(Carbon Capture Storage)



-  Existing sites
-  CO2 Terminal
-  In construction

Carbonfix
Target expansion in 2026/28
Iceland. Test operation now

Northern Lights
Open by 2024
Baked by Norwegian Government and owned by Equinor, Shell and TotalEnergies

Acorn
Open by 2030+
Phase 2 UK facility storing CO₂ from Grangemouth and Peterhead

Greensand
Target 2026/28 for full operations
Trial quantities just requested as EOR Ineos and DEA Wintershall

Endurance
Open by 2028-30
Phase 1 UK facility storing CO₂ from the Humber and Teeside

Viking
Target 2026/28
Using Theddlethorpe offshore gas terminal and empty gas fields

Hynet
Open by 2027-28
Phase 1 UK facility storing CO₂ from Merseyside

Pathos
Target 2026/28
Port of Rotterdam and Gasunie project to use empty gas field

The Farming Challenge



Price Volatility



Crop supply on long-term, transparent, structured agreements



Soil Health & Sustainability

Soil is a carbon sink



Post Subsidy Farming

"Public money for public goods"



Feedstock contracts

Project Carbon Harvest will support farmers in the transition to more regenerative land practices, aligning with agri-environmental policies and encouraging custodianship of UK soils.

Our farmers will be paid a premium to grow bioenergy feedstock using Sustainable Farming Practices.



Under sowing maize with grass during early growth stages, resulting in established grass cover at harvest.



Reducing diesel use



Protecting soils from erosion



Minimising soil disturbances



Building natural resilience through more diverse crop rotations



Substitution of artificial fertilisers and reducing chemical inputs

A key element of our feedstock supply contracts is the adoption of sustainable farming practices by our suppliers.

Future Biogas have compiled this document to summarise the key outcomes, aims and methods that our growers should consider employing within their rotation in order to receive the sustainable farming premium they are eligible to receive as part of their feedstock supply contract.

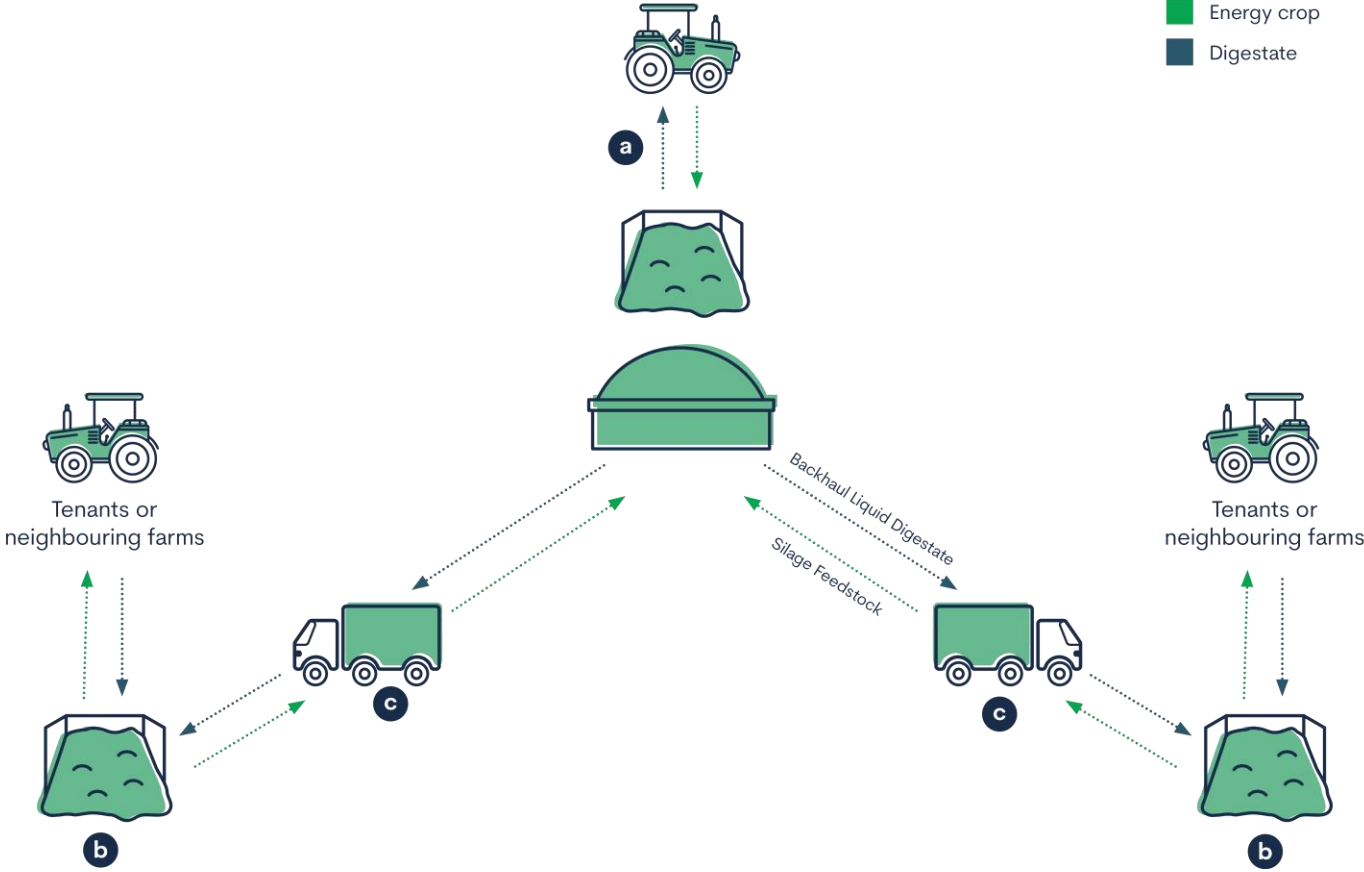
This document is intended to support strategic decision making on farm regarding the improvement of sustainability of arable/energy cropping but is not an exhaustive list. We also understand that for practical or agronomic reasons growers may be unable to adopt some of the methods contained within.



“Hub Clamp” Model

Key:

- Energy crop
- Digestate



1

Bioenergy crops grown

Crops such as maize or rye are grown as break crops as part of sustainable food rotations.

2

Harvesting

Crops are harvested and taken to local biogas plants. Farming partners typically grow within just a few miles of our plants.

3

Anaerobic digestion

Bacteria breaks down the crops in the absence of oxygen, creating methane and CO₂.

4

Biomethane produced

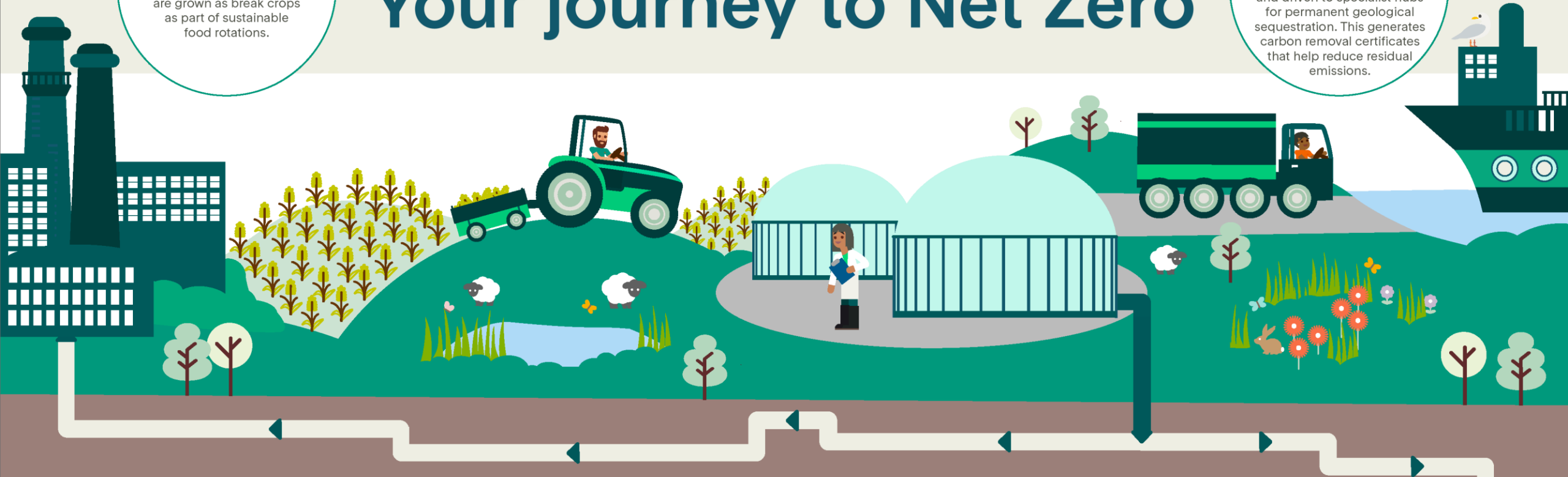
Methane is upgraded into biomethane and injected into the national grid. This gas is claimed by our corporate partners to help tackle scope 1 emissions.

5

Carbon sequestration

CO₂ is captured, liquefied and driven to specialist hubs for permanent geological sequestration. This generates carbon removal certificates that help reduce residual emissions.

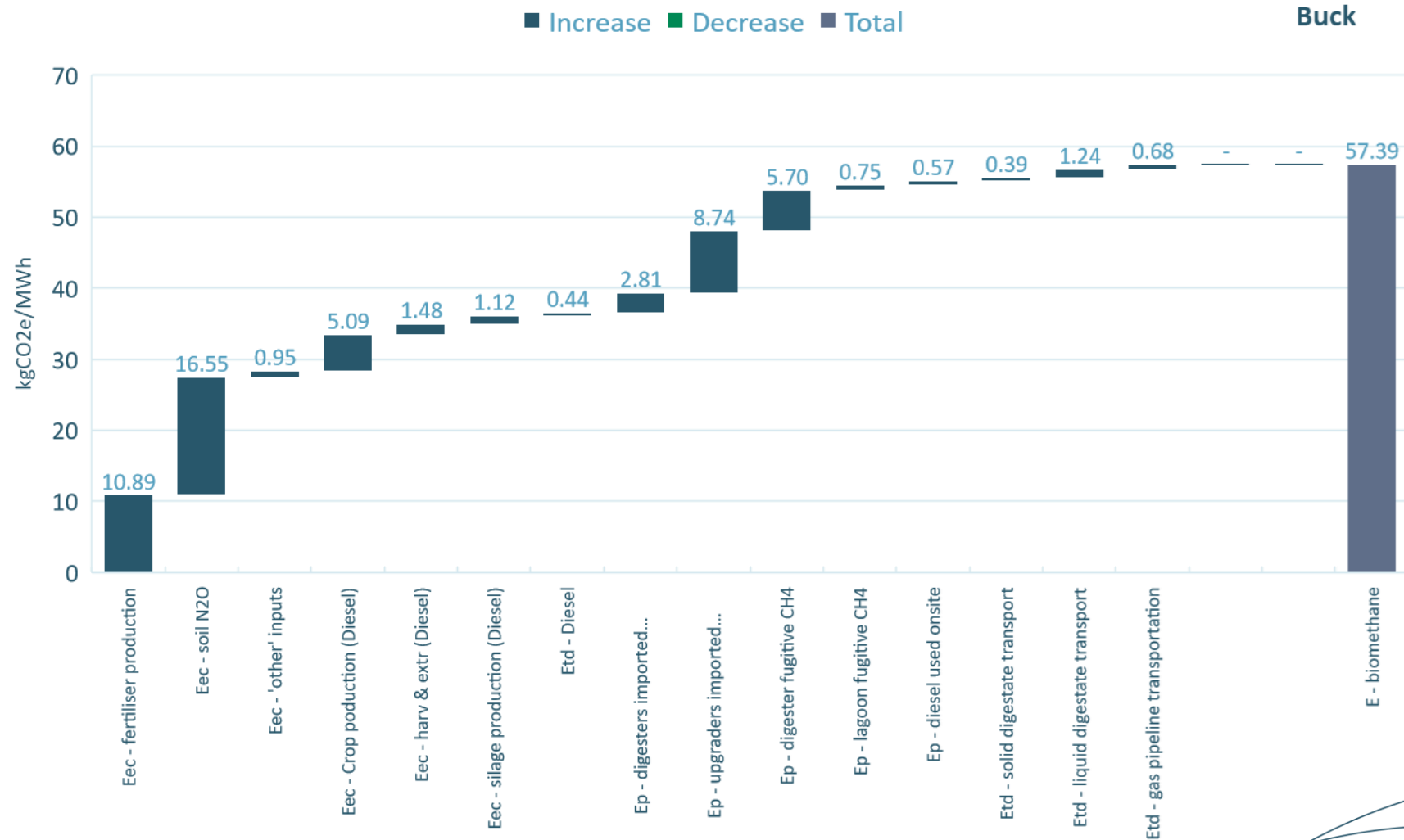
Your journey to Net Zero



Base-Case



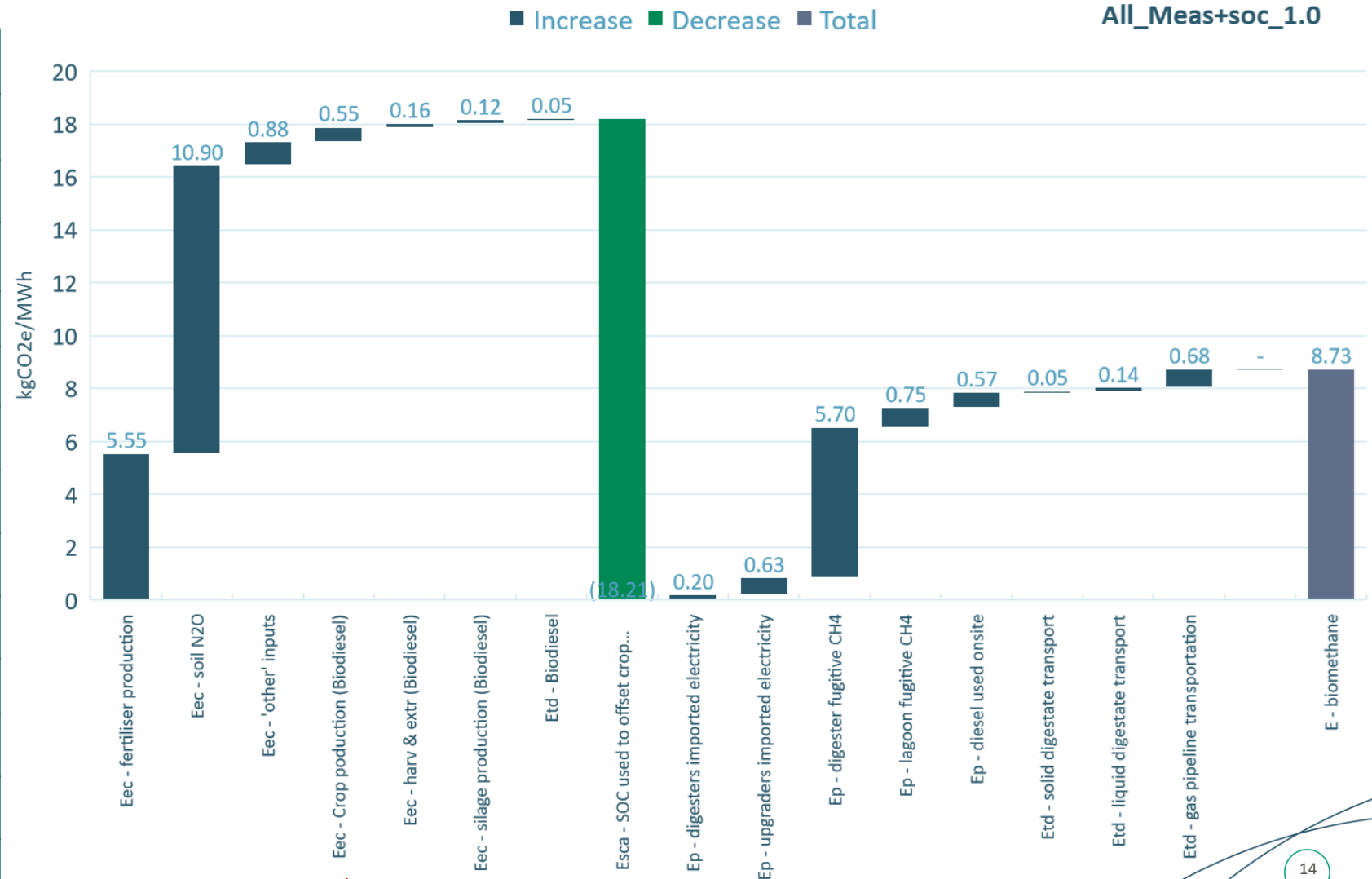
Source	Factor
Allocation Profile	Economic
N2O Calculation Method	E4Tech (RHI)
\bar{x}_w Crop Yield	34.55 (tFM/ha)
Silage Loss	-10%
N fertiliser application reduction	-0%
Soil N2O	-0%
Fertiliser Production Emissions	-0%
Fuel for vehicles and machinery	Diesel
SOC accumulation	0 tC/ha
SOC claimed	NA
Ep – Imported Electricity	Electricity grid
Fugitive emissions from digesters	0.3%
Fugitive emissions from digestate lagoon	2% biogas potential 2% slip
Biochar dosage Biochar required – crop neutrality Biochar cost vs. SFI	NA



<2026 (-70%): 86.4 kgCO₂e/MWh
>2026 (-80%): 57.6 kgCO₂e/MWh

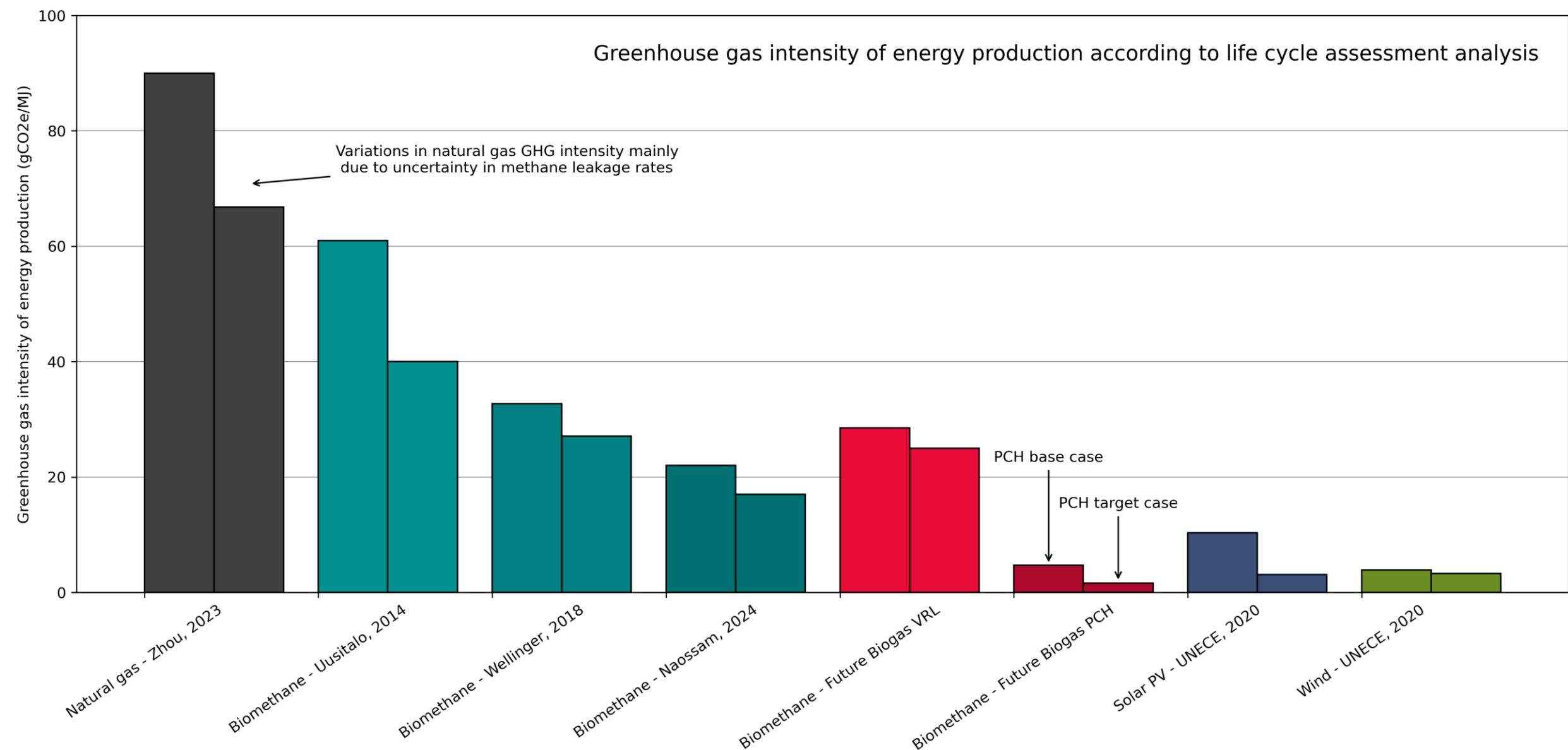
Target-Case + SOC

Source	Factor
Allocation Profile	Economic
N2O Calculation Method	E4Tech (RHI)
\bar{x}_w Crop Yield	34.55 +10% (tFM/ha)
Silage Loss	-4%
N fertiliser application reduction	-15%
Soil N2O	-30/40%
Fertiliser Production Emissions	-50%
Fuel for vehicles and machinery	Biodiesel (HVO)
SOC accumulation	1 tC/ha
SOC claimed	70%
Ep – Imported Electricity	Green PPA
Fugitive emissions from digesters	0.3%
Fugitive emissions from digestate lagoon	2% biogas potential 2% slip
Biochar dosage Biochar required – crop neutrality Biochar cost vs. SFI	NA



<2026 (-70%): 86.4 kgCO2e/MWh
 >2026 (-80%): 57.6 kgCO2e/MWh

Greenhouse gas intensity of energy production according to life cycle assessment analysis



References:

1. Yuanrong Zhou, Chelsea Baldino. Recommendations for a stringent ISO standard on the GHG emissions from blue hydrogen production. 2023. The International Council on Clean Transport.
2. V. Uusitalo, J. Havukainen, V. Kapustina, R. Soukka, and M. Horttanainen. Greenhouse Gas Emissions of Biomethane for Transport: Uncertainties and Allocation Methods. Energy & Fuels 2014 28 (3)
3. Arthur Wellinger, Lorella Rossi, Stefano Bozzetto and Piero Gattoni, CIB, Italy. Biogas Done Right in transport. The sustainable way to produce food, feed and biomethane.
4. Michel Noussan, Viviana Negro, Matteo Prussi, David Chiaramonti, The potential role of biomethane for the decarbonization of transport: An analysis of 2030 scenarios in Italy, Applied Energy, Volume 355, 2024
- 5-6. FB Ica_beccs model v2.20
- 7-8. UNECE, 2020. Carbon Neutrality in the UNECE Region: Integrated Life-cycle Assessment of Electricity Sources

Summary of benefits

TO FARMERS



- Long-term offtake
 - Transparent, stable pricing
 - Lower income volatility
 - Farm diversification
 - Healthy soils for future farming
 - Rewarded under the SFI
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TO FUTURE BIOGAS



- Feedstock security
 - Predictable pricing
 - High biogas yields
 - Low-carbon biomass
 - Optimise delivery of Project Carbon Harvest
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TO THE ENVIRONMENT



- Restore soil health
 - Enhance biodiversity
 - Improve water retention in soils
 - Reduce artificial inputs
 - Reduce GHG emissions
-

TO THE UK



- Deliver Net Zero by 2050
 - Enhance food security
 - Enhance energy security
 - Create jobs in rural economies
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Thank you

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