

The Opportunity for the UK

Seaweed Aquaculture



Global perspective on the opportunity

Seaweed aquaculture in 3 numbers

**Current seaweed
aquaculture value:
\$13.3 bn**

The global seaweed market tripled between 2000-2018 to \$13.3 billion. 99% in Asia



Food and Agriculture
Organization of the
United Nations

**New seaweed
applications value:
\$11.8 bn**

10 new seaweed applications with the potential to grow by an additional \$11.8 billion by 2030



**European 2030
seaweed market:
€3bn- €9.3bn**

European seaweed market to grow up to €9.3bn by 2030

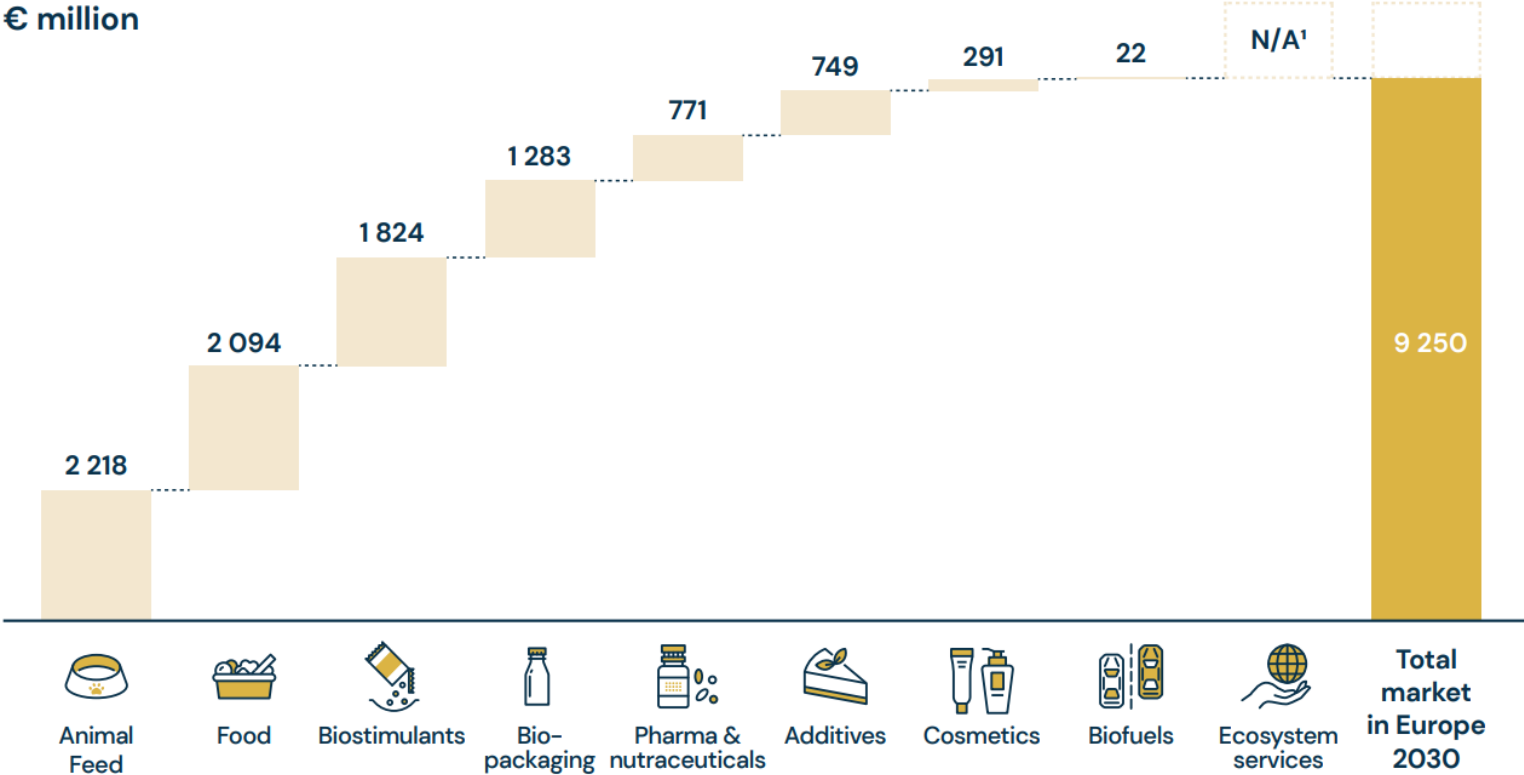


S Y S T E M I Q

High ambition case scenario (Source: Seaweed for Europe: Investor Memo, 2021)

European seaweed products demand

€ million



1. As of today, not yet quantified, but important focus for future research.
 Note: Values are for high ambition level - see Appendix for low and moderate ambition level outcomes. Total may differ due to rounding.



“Seaweed is a high-potential renewable material that can help produce more sustainable and better performing chemicals and packaging at the scale needed”

Peter ter Kulve
 President
 Unilever Home Care



Significant positive impacts for Europe by 2030

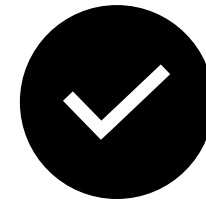
What does this mean for Europe?



ECONOMY
€9.3bn



JOB
85,000 new FTE jobs



NET ZERO
5.4m tCO₂e net



BIOMASS
8.3m tonnes



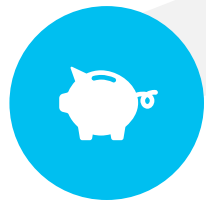
NUTRIENT CAPTURE
20,000t N & 2,000t P



PRODUCTION AREA
27,300 Ha

c14% of European coastline & fisheries tonnage

What could this mean for the UK?



ECONOMY
€1.3bn



JOB
11,900 new FTE jobs



NET ZERO
756,000 tCO₂e net



BIOMASS
1.18m tonnes



NUTRIENT CAPTURE
2,800t N & 280t P

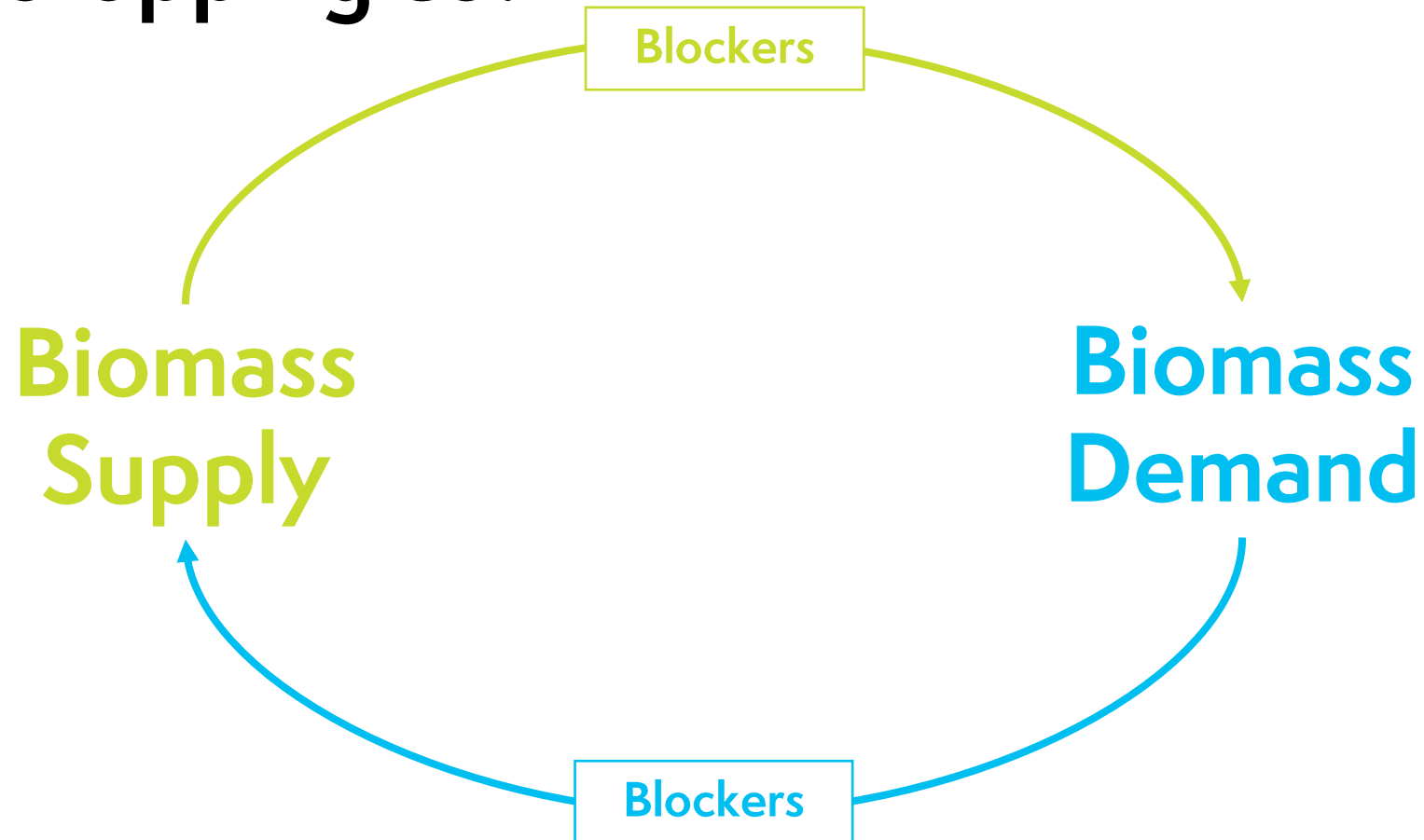


PRODUCTION AREA
3,822 Ha

Levelling Up Agenda ✓ | Environment Act 2021 ✓ | 25 YEP ✓ | Net Zero ✓ | Green Industrial Revolution ✓

Two interlocking challenges need to be concurrently addressed to reach 14% market share

What's stopping us?



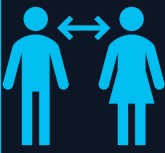
Supply target: 1.18m tonnes by 2030

Biomass supply blockers



Regulatory complexity

Lack of
offtake agreements



Complex social
license

Limited local supply
chain



Environmental
concerns

Skills Deficit



Supply target: 1.18m tonnes by 2030



Unlocking supply – a viable option

Aquaculture Enterprise Zones

Explore the viability of a repeatable, place-based Aquaculture Enterprise Zone model around England and Wales's coastlines to promote sustainable aquaculture development.

Aquaculture Enterprise Zones (AEZ) seek to create a supportive and inclusive environment for aquaculture, navigating the barriers to entry and harnessing the underlying market drivers to create long-term prosperity for our coastal communities.

Strategy proposed 10 AEZs around England and Wales by 2030, and 20 by 2050

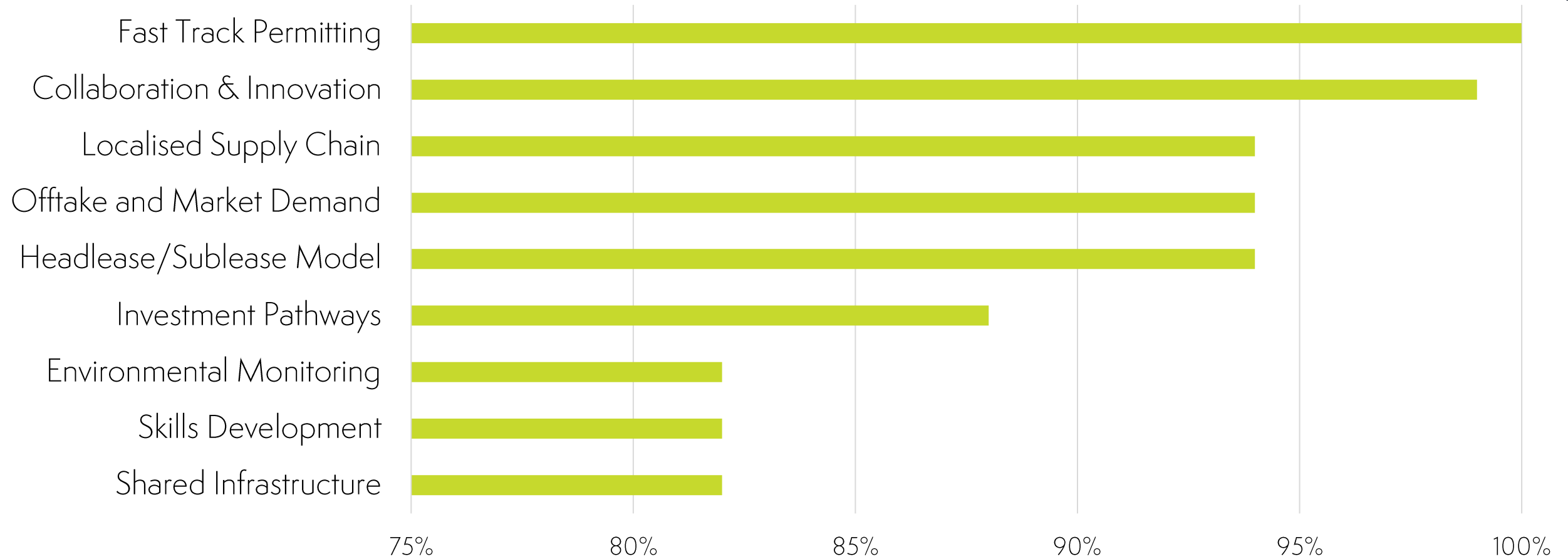


Supply target: 1.18m tonnes by 2030



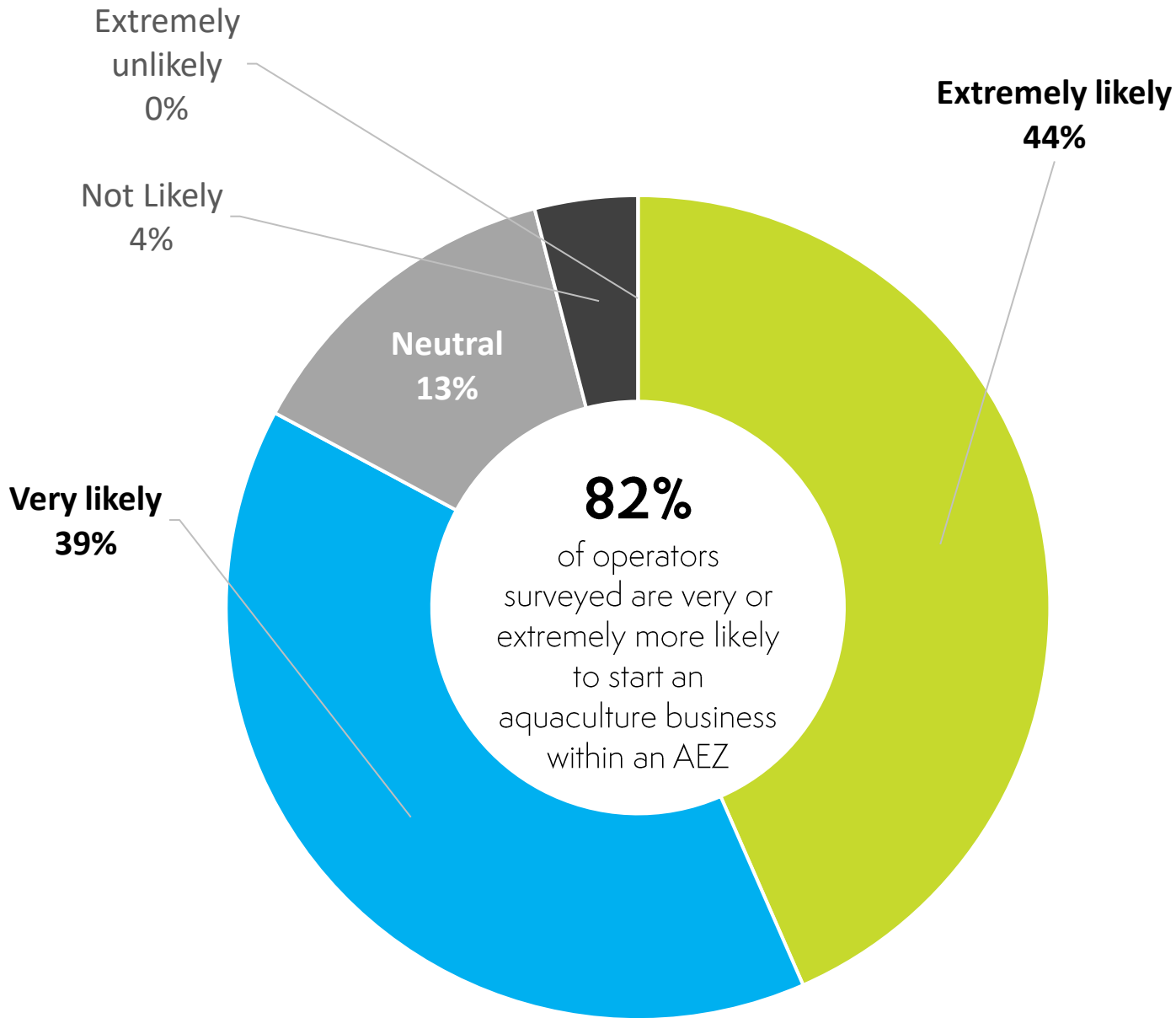
Survey Question: "How valuable do you believe each component of the AEZ model is to your business?"

■ Very or extremely useful



Source: AEZ Strategic Pathway Report – Survey based on 30 respondents to AEZ research survey

Supply target: 1.18m tonnes by 2030



Survey Question:
"How much more likely would you be to start an aquaculture business within an AEZ compared to a location outside an AEZ?"

Demand target: 1.18m tonnes by 2030

Demand blocker analogy

Demand target: 1.18m tonnes by 2030

Demand blocker analogy

Creating the missing link in the UK seaweed value chain

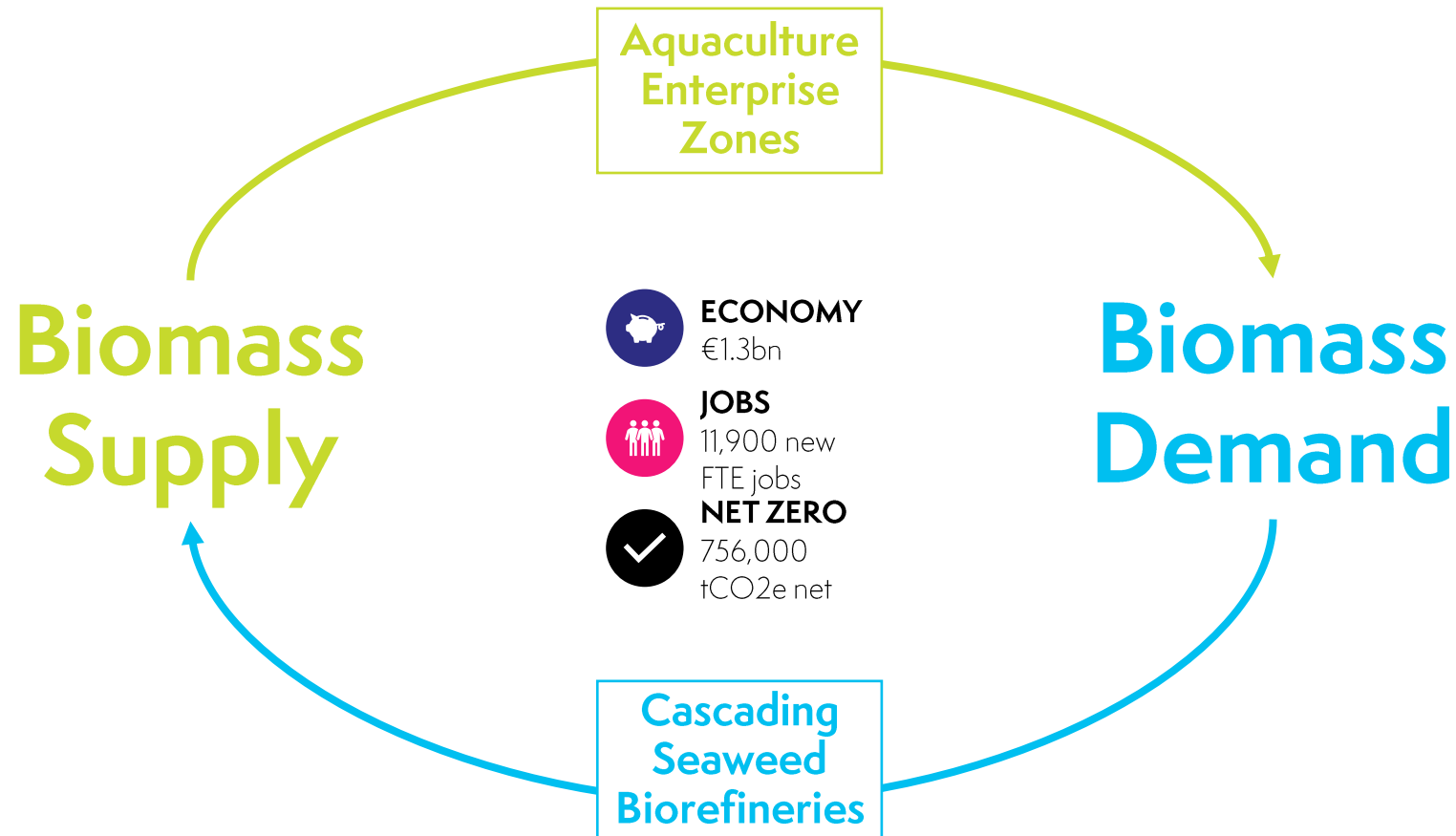
Cascading Seaweed Biorefinery

- ▶ Full utilisation of seaweed biomass
- ▶ Valorisation of seaweed biomass
- ▶ 5-10 year forward contracts for seaweed biomass production
- ▶ Playing catch-up with Europe



The time to act is now to seize this opportunity for the UK

What's stopping us?



What the sector need from Government to deliver these benefits:

- 1. Confirm commitment.** Confirm seaweed aquaculture as a priority sector in the UK's green economy
- 2. Set targets.** Set seaweed market share & cultivation targets for 2030
- 3. Support.** The development of a UK Seaweed Industry Association to work with government to deliver

Aquaculture Enterprise Zone

Thank you

Rob Passmore
CEO & Co-founder

