

Scenarios for Scotland's Blue Economy

Summary Final Report

February 2025

Important Information

This report does not constitute Scottish Government policy or policy direction. It does not represent the view of Scottish Government Ministers. This report presents a number of scenarios constructed by a wide range of stakeholders using tools in the UK Government's Futures Toolkit.

The scenarios set out in this report are narrative or stories, not quantitative models or an assessment of current Scottish Government policy. They do not reflect Scottish Government policy or forecasts. They are narratives or stories that have been developed by stakeholders to help them explore alternative ways the world might develop and what those developments might mean for the challenges and choices that governments, businesses and citizens might face in the future. By routinely considering how the future may unfold, and proactively and systematically incorporating our findings in our strategies and decisions, Government's policies will be more resilient and deliver long-term benefits more effectively.

Future scenario processes help us identify: What is happening now? identifying trends, uncertainties and possibilities; What does this mean for our futures? Exploring different potential futures and their implications and; What can we do? Deciding how to act within the current policy environment in order to be resilient to a range of possible futures.

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1. Introduction

Scottish Government commissioned Waverley in December 2023 to design, develop and deliver a set of workshops to create different scenarios for use of marine space in Scotland.

49 participants, representing 30 organisations in the marine sector, took part in 4 workshops to develop the scenarios; to use them to explore how the different outcomes might affect Scotland's strategic priorities and high level objectives in the marine space; and to rehearse the steps Scotland would need to take to deliver its preferred

The full list of participants is set out in the Annex.

2. About scenarios

The scenarios set out in this report are narrative scenarios, not quantitative models or an assessment of current Scottish Government policy.

Narrative scenarios are stories that help stakeholders explore alternative ways the world might develop and what those developments might mean for the challenges and choices that governments, businesses and citizens might face in the future. They provide an opportunity for stakeholders to develop a shared understanding of the opportunities and challenges that Scotland might face in the future and to rehearse the strategic choices and decisions they may have to make – individually or collectively – to achieve success

The Process in Detail

Step 1: Identify Uncertainties



Identify the main uncertainties surrounding Scotland's capacity to achieve shared stewardship of its marine environment in 2045.

Step 2: Identify Critical Uncertainties



Identify strategic themes



Determine critical uncertainties



Define strategic areas of uncertainty.

Step 3: Create the Scenario framework



Prioritise strategic axes of uncertainty



Agree which axes to use to create the scenario matrix

Step 4: Develop Initial Scenarios



Develop initial scenarios in workshop discussion

Step 5: Refine the Scenarios logic



Wider stakeholder consultation



Examine the forces pushing Scotland towards one scenario or another



Write up and refine scenarios post step 4 and 5

Step 6: Validate the Scenarios



Review the draft final scenarios for gaps and inconsistencies



Amend final scenario narratives

Step 7: Test Scotland's Performance



Identify implications for sector performance



Review high level objectives against the scenarios

Step 8: Backcast the Preferred Future



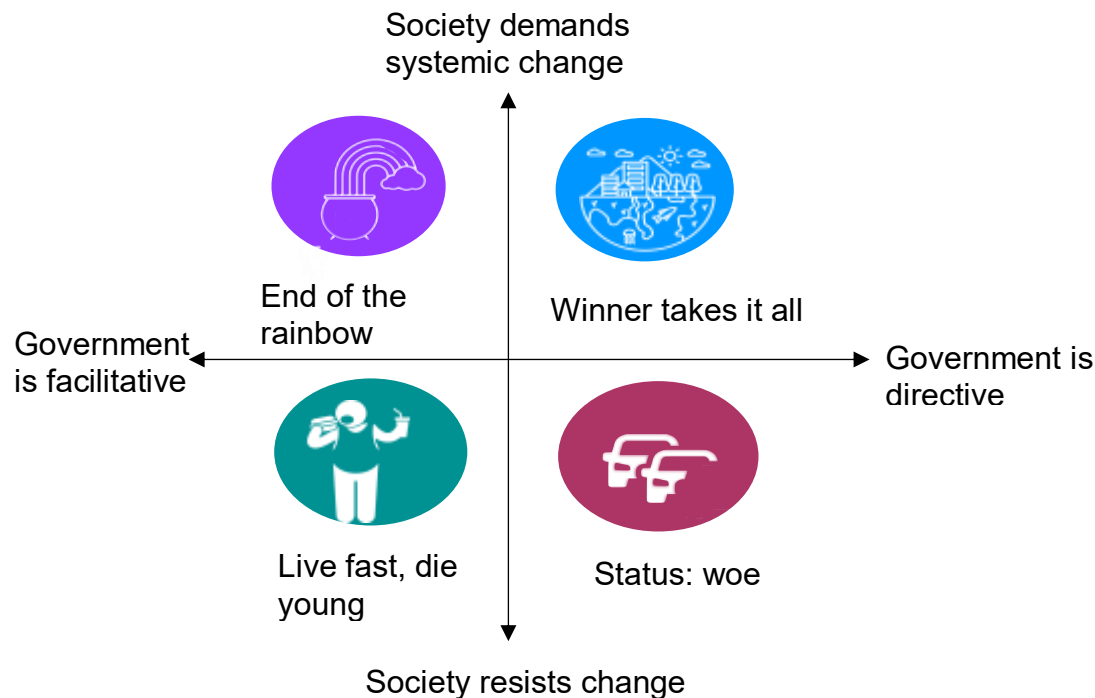
Identify the preferred future



Build the timeline of events leading to the preferred future

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The scenarios in summary



End of the rainbow describes a future where Scottish Government is facilitative, and society demands long term systemic change. Business, government and society are pursuing net zero. Business has adopted the natural capital model, driven in part by global supply chains and by social values. Government enables and supports change. Rural and coastal communities are thriving as new job opportunities support growth.

Winner takes it all describes a future where society demands systemic change, and Scottish government takes a directive approach to delivering long-term sustainability in the blue economy. Strict environmental regulations are enforced, pushing businesses to innovate and adopt sustainable practices. The focus on sustainability attracts investment in green technologies and sustainable fisheries. Society benefits from cleaner environments, sustainable job creation, and a robust economy that doesn't compromise the health of marine ecosystems.

Status woe describes a future where Scottish Government adopts a directive stance to deal with declining growth, limited productivity and low levels of investment in skills and technology. Short-term gains overshadow long-term sustainability. Society as a whole doesn't understand or care about net zero and policies are ineffective. There is no shared strategy for Scotland's marine environment, which means it is exploited rather than protected for the future.

Live fast, die young describes a future where Scottish Government aims to be more collaborative and facilitative, but inconsistent policy making and economic opportunism

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prevents Scotland from progressing. Economic benefit is prioritised over sustainability and the lack of a coherent long-term strategy to manage Scotland’s blue economy leads to fragmented effort and limited progress. Scotland’s marine environment suffers; what limited effort there is to manage the marine space relates to productive industry rather than environmental stewardship

Table 1. Comparative analysis of performance in key sectors across the scenarios

Future Scenarios	 End of the rainbow		 Winner takes it all		 Status: woe		 Live fast, die young	
	2035	2045	2035	2045	2035	2045	2035	2045
Energy	↑	↑	-	-	↗	↑	-	-
Energy: Renewables	↑	↑	↗	↑	📄	-	↗	↗
Energy: Oil and gas	↓	↓	↘	↘	-	-	↗	↗
Fisheries	↑	↑	-	-	↘	↓	↘	↓
Fisheries: Large mobile	↑	↑	↘	↓	-	-	-	-
Fisheries: Small static	↑	↑	↘	↘	-	-	-	-
Aquaculture	↑	↑	↗	↑	→	→	↗	↘
Tourism	↗	↗	→	→	→	→	↘	↘
Transport, ports and harbours	↗	↗	↗	↑	↑	↑	↗	↗
Coastal and islands communities	↑	↑	↘	↘	↘	↘	→	↓
Marine nature	↗	↑	→	↗	↓	↓	↘	↓

- ↑ = significantly stronger than in 2024
- ↗ = slightly stronger than in 2024
- = about the same as in 2024
- ↘ = slightly weaker than in 2024
- ↓ = significantly weaker than in 2024

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Commentary on the comparative analysis

The analysis highlights the comparative strength of End of the rainbow against the other three scenarios. All sectors perform well, apart from oil and gas – indicating that the transition to renewables is completed on target. Tourism and Transport, ports and harbours are slightly stronger, reflecting a repurposing of activity in the latter sector rather than an expansion of it; and a more cautious approach to travel and to protecting the natural environment globally.

Fisheries declines in all three other scenarios, either as a policy choice (Winner takes it all) or because lack of environmental protection degrades fish stocks and habitats.

Aquaculture is stronger in Winner takes it all due to investment and innovation in the sector and the desire to ensure the industry is sustained for the long term. Its future is determined by the market in Status: woe and in Live fast, die young. In the latter, the sector does well at first but then loses market share because of poor strategic choices in the sector.

Coastal and island communities decline in all three of the other scenarios. In Winner takes it all, this is due primarily to the investment in technology, to efficiency gains in production and remote working and to the expansion of onshore energy production. There is also a natural decline due to the ageing demographic and the downturn in global consequently, for reducing travel.

Energy production in Status: woe and in Live fast, die young keeps oil and gas in the mix. The key issue in these scenarios is that Scotland struggles to afford the cost of transition and to switch to renewables at scale and at pace.

Overall, participants' analysis indicates why End of the rainbow is their (unanimously) preferred future. Achieving success in this scenario logic will require a significant focus on bringing business and society on side with the difficult decisions that need to be made.

Delivery of the marine sector HLOs in each scenario

We asked participants to rank NMP2's high level objectives against each scenario. They did this by assigning each objective a score between 1 (most important in the scenario logic) to 11 (least important in the scenario logic).

The results and the key messages for End of the rainbow are set out on the following pages.

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Table 2. Comparative rankings for *End of the rainbow*

	1= most important 11= least important [Any gaps reflect the responses]			
Climate mitigation and adaptation				
1.1 Respond to the global climate emergency, achieving net zero by 2045 and realising adaptation opportunities	3=	-	1=	2
Ecosystem health, protection and restoration				
2.1 Respond to the Global Biodiversity Crisis, protecting Scotland’s marine and coastal biodiversity	3=	6	1=	4
2.2 Restore + enhance Scotland’s marine and coastal ecosystem services in line with Scotland’s biodiversity strategy	3=	4	1=	3
Sustainable marine economy				
3.1 Enable multi-use of Scotland’s seas to reduce conflict for marine space	1	1	-	8
3.2 Safeguard opportunities for marine economic sectors to operate, based on available evidence and in line with Scotland’s ambitions	7=	3	-	9
3.3 Enable use of Scotland’s seas to support the development of Net Zero sectors in line with Scotland’s ambitions	11	-	-	5
Island and coastal community development				
4.1 Enhance and safeguard opportunities for sustainable, resilient and diverse marine economies within Scotland’s Island and coastal communities	2	5	-	7
Cultural heritage				
5.1 Protect, and where appropriate, enhance access to and appreciation of Scotland’s marine and coastal cultural heritage	7=	-	-	11
Social and cultural well-being				
6.1 Facilitate equitable access to Scotland’s seas and shared stewardship to benefit well-being and to support thriving communities	7=	-	-	6
Implementation				

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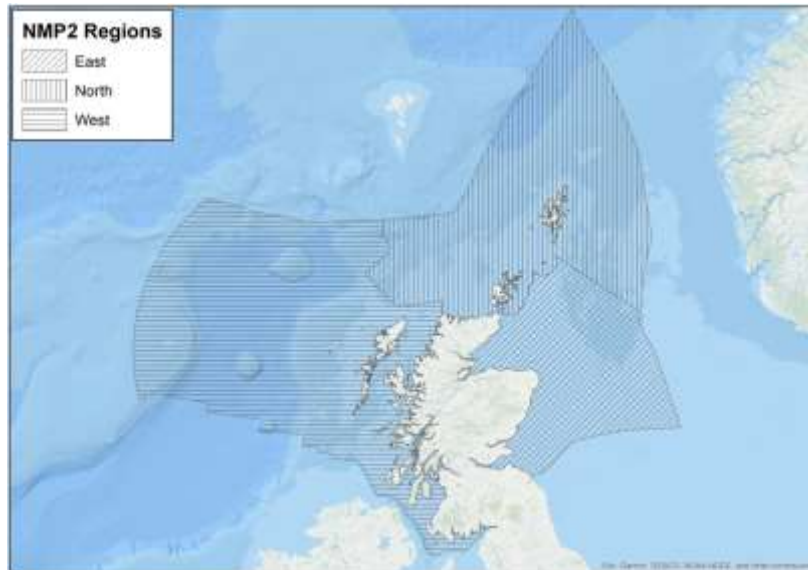
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7.1 Use evidence-based decision-making to manage marine space in line with Scotland's wider ambitions	6	2	2	1
7.2 Contribute to monitoring and evaluation of NMP2 implementation	10	-	7	10

The key message emerging from the comparative rankings for End of the rainbow is that there are striking and important differences of opinion about what is important in the scenario. Only one of the 11 objectives - 1.1 Respond to the global climate emergency, achieving net zero by 2045 and realising adaptation opportunities – receives a similar importance ranking from all groups.

This suggests that the current definition of the high-level objectives is open to interpretation and that HLOs should be reviewed. Each objective should include both qualitative and quantitative targets for the next five years and should ideally be set against 20-year targets.

3. Backcasting the future



Backcasting is a technique for determining the steps that need to be taken to deliver a preferred future and setting out the key changes required to deliver it and using the conversation to identify what is wholly in governments' control and what is not.

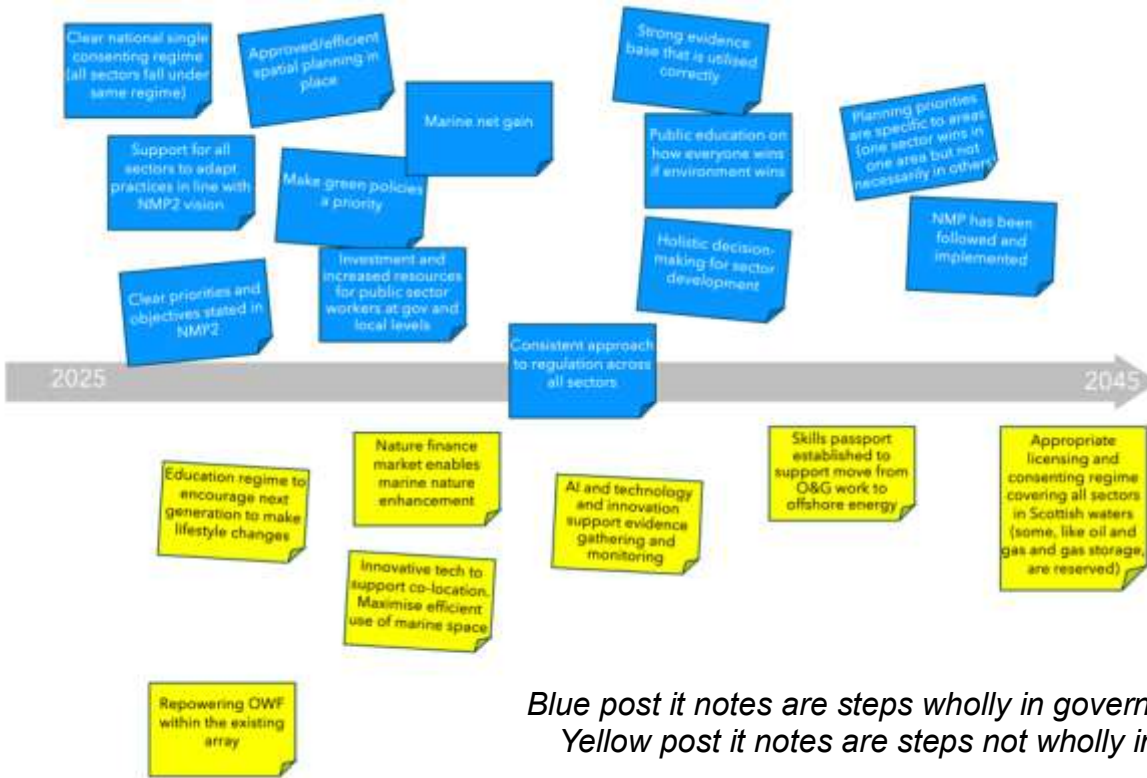
Stakeholders were unanimous that End of the rainbow is the scenario that most closely represents the future they aspire to. We therefore asked them to conduct a backcasting exercise to determine the steps required to deliver this future. Stakeholders worked in three groups, each focussing on one of the NMP2 Regions – North, East or West (see schematic on the right) – and backcasting the steps required to deliver End of the rainbow.

We asked groups to identify the steps that are required to deliver the future and to distinguish between

- Steps that are wholly in government's control
- Steps that are not wholly in government's control

The backcasts are set out on page 8.

East



Blue post it notes are steps wholly in government's control.
 Yellow post it notes are steps not wholly in government's control

West



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Recommendations on next steps

What needs to be included in NMP2

We have clustered suggestions together by theme. There are seven:

- Clarity
- Transparency
- Better use of data
- Prioritisation
- Nature based solutions
- Instruments
- Ownership

Clarity

- NMP2 must give clarity over marine spatial planning and facilitation of multi-use of marine space
- Clear setting out of resources for delivery and indication of responsibilities
- Clear implementation for every objective within NMP
- Clear monitoring strategies (spatial and sectoral)
- Transparency around decision-making and evidence-based decision-making

Better use of data

- Monitoring of MPA Network and making better use of data (encourage developer data sharing)
- Foster/encourage innovation to gather/collect/ review more joined-up evidence gathering/use
- Central/single marine data repository that is public domain/open to all

Prioritisation

- Spatial planning is a must. Prioritisation criteria are needed
- Investment/prioritisation of nature protection – both through MPA designation and monitoring and through active restoration of habitats e.g. seagrass

Nature based solutions

- Nature (space)-based solutions for adaptation e.g. blue carbon habitats
- Space for nature recovery and enhancement

Instruments

- Revision of marine consenting such that ALL regimes/sectors fall under a single national regime
- Develop green finance

Ownership

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- Focus on bringing people along – social license areas
- Increased/clear community involvement in marine decision.
- Building ocean library and source to sea literacy

Triggers that will indicate government needs to be directive in driving NMP2 forwards

Participants identified 5 triggers

- When outcome intervention becomes clear (accelerate/decelerate as system requires)
- Ecosystem collapse despite action taken
- Unforeseen events (pandemics, war, etc)
- Conflict resolution to make national interest decisions
- Final say on national priorities (energy v food v health)

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Annex 1: Participating stakeholders

Aegir Consultancy - Jennifer Mouat
Aquaculture Fisheries - Simon McDonald
Coastal Communities Network - Alan Munro
Crown Estate Scotland - Annie Breaden
East Grampian Coastal Partnership - Ian Hay
European Subsea Cables Association - John Wrottesley
Flora and Fauna - Rebecca Plant
Highlands and Islands Enterprise - Gordon MacDonald & Katrina Wiseman
Historic Environment Scotland - Andrew Stevenson
Joint Nature Conservation Committee - Karen Millichip
Maritime and Coastguard Agency - Helen Croxson
Moray Firth Partnership - Vicki Paxton
NatureScot - Chris Cutts & Chris Leakey & Jill Bunyan
North Sea Transition Authority - Stuart Walters
Northwest Coast Regional Inshore Fisheries Group - Alastair Hamilton
Orkney Islands Council - Daniel Morris & James Green
Orkney Regional Inshore Fisheries Group - Philip Bennet
RSPB - Vicki McLachlan
Salmon Scotland - Nigel Welford
Scottish Fishermen's Federation - Mohammed Fahim Hashimi
Scottish Renewables - Mark Richardson
Scottish Whitefish Producers Association - Raymond Hall
Scottish Wildlife Trust - Jessica Jones & Rebecca Crawford
SEPA - Alexander Downie
Shetland Islands Council - Simon Pallant
Shetland Regional Inshore Fisheries Group - Hilary Burgess
Solway Firth Partnership - Clair McFarlan
South West Coast Regional Inshore Fisheries Group - Mark Griffin
University of the Highlands and Islands - Rachel Shucksmith
Scottish Government
Alison Baisden
Ashleigh Meikle
Heather Owen
Janelle Braithewaite
John Mouat
Liam Mason
Louise O'Hara Murray
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The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

ISBN: 978-1-83691-335-1 (web only)

Published by The Scottish Government, February 2025

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA
PPDAS1561534 (02/25)

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