

A STRATEGIC MAPPING APPROACH TO REGIONAL SCENARIO PLANNING

OFFSHORE RENEWABLE ENERGY IN THE CHANNEL

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The Channel MOR Project



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Challenges

- Key Challenges
 - Separation between project planner (bidding stage) and doers
 - Generic strategic analysis and scenario approaches
- Others
 - Size of team (Channel-MOR and beyond)
 - Team composition – not all experts
 - Short timescale
 - Two languages/culture
- Emerging questions
 - Achieve coherence and rigour (Godet, 2000)
 - Deep uncertainty (French, 2005)
 - Which template for scenario analysis? (Postma and Liebl, 2005)



Method

The Plan

- Strategic analysis
 - Weights = Survey (AHP)
 - Ratings = regional focus groups
- Strategic mapping
- Regional scenario analysis
 - Template?

Execution

- Strategic analysis
 - Weights = Survey (AHP)
 - Filtering of answers
 - Ratings = regional focus groups
 - Moderation of ratings
- Strategic mapping
- Regional scenario analysis
 - Free forms scenarios

The Retrofit

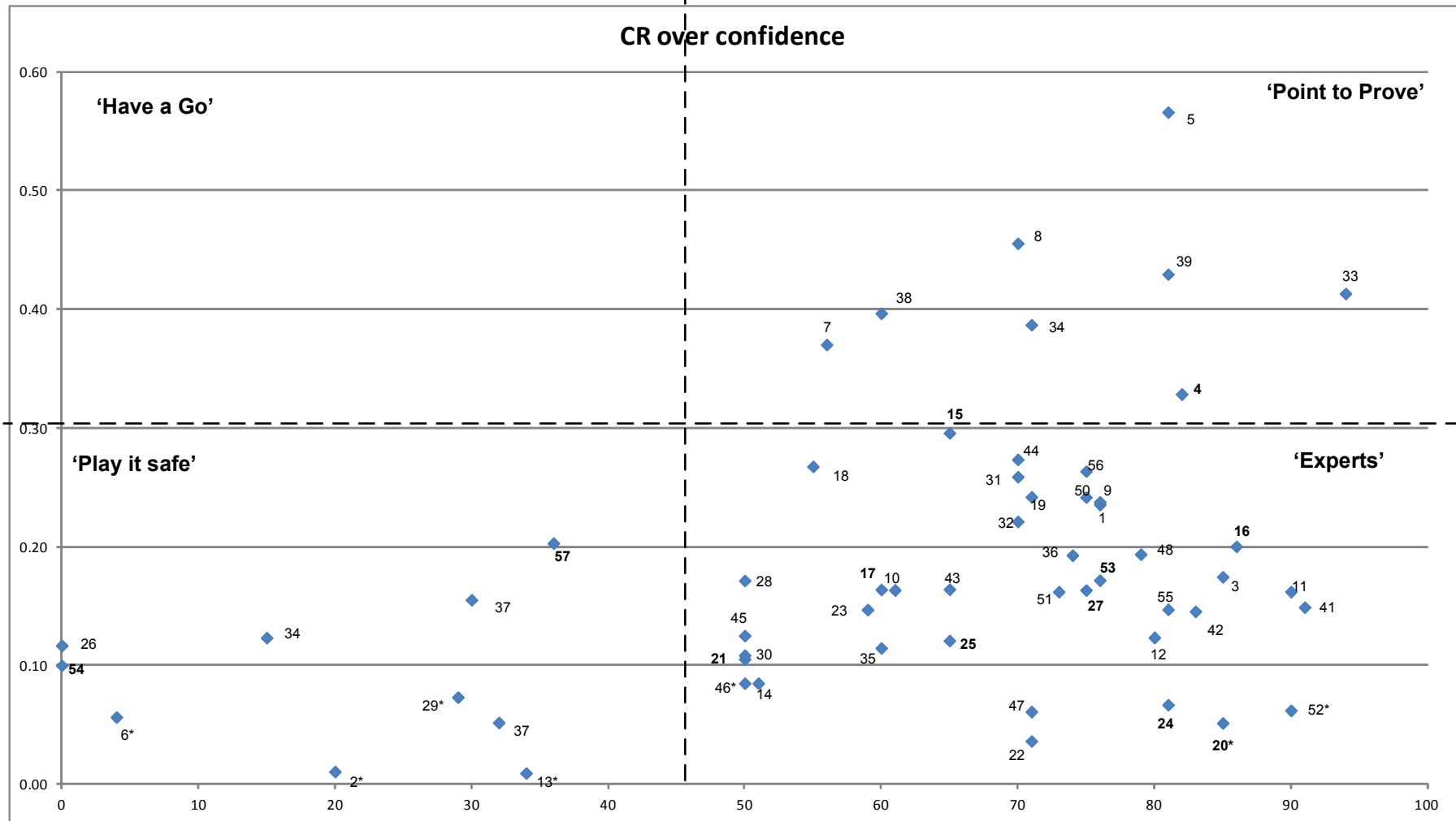
- Strategic analysis
 - Weights = Survey (AHP)
 - Filtering of answers
 - Ratings = regional focus groups
 - Moderation of ratings
- Strategic mapping
- Regional scenario analysis
 - TIS dynamics
 - Robustness analysis

Survey Results

1751 e-mails sent
91 started
57 usable

	UoC Clustering										
	Pilot			Full Survey							
	GM-All	GM-1	GM-2	GM-All	GM-1	GM-2	Cha.MOR	UK	France	R. Europe	R. World
<i>Technology</i>											
Preference Wind	0.42	0.5	0.36	0.49	0.47	0.43	0.53	0.45	0.52	0.66	0.49
Preference Wave	0.31	0.2	0.4	0.16	0.15	0.18	0.22	0.19	0.12	0.13	0.17
Preference Tidal	0.27	0.3	0.24	0.35	0.38	0.38	0.25	0.36	0.35	0.21	0.34
<i>Opportunities</i>											
Preference Construction	0.12	0.14	0.1	0.24	0.23	0.25	0.17	0.26	0.19	0.19	0.21
Preference R&D	0.28	0.31	0.25	0.18	0.17	0.20	0.23	0.19	0.17	0.08	0.13
Preference OM	0.23	0.27	0.2	0.23	0.24	0.21	0.18	0.22	0.24	0.38	0.23
Preference Downstream supply chain	0.16	0.13	0.18	0.18	0.17	0.20	0.24	0.17	0.18	0.24	0.25
Preference Internationalisation	0.21	0.16	0.26	0.17	0.19	0.14	0.17	0.16	0.20	0.11	0.18
<i>Threats</i>											
Preference Competition	0.19	0.23	0.17	0.15	0.14	0.16	0.13	0.18	0.17	0.18	0.18
Preference Cost	0.19	0.21	0.17	0.29	0.30	0.26	0.32	0.23	0.23	0.24	0.24
Preference Public	0.1	0.11	0.09	0.13	0.14	0.12	0.12	0.16	0.18	0.17	0.19
Preference Market Power	0.22	0.23	0.21	0.14	0.13	0.16	0.11	0.17	0.18	0.18	0.19
Preference Uncertainty	0.3	0.23	0.35	0.30	0.29	0.30	0.32	0.26	0.23	0.24	0.19
<i>Weaknesses</i>											
Preference forward	0.21	0.2	0.22	0.26	0.24	0.29	0.32	0.26	0.25	0.24	0.25
Preference LOR	0.41	0.39	0.42	0.32	0.34	0.27	0.26	0.28	0.27	0.29	0.24
Preference NFMA	0.12	0.17	0.1	0.18	0.17	0.23	0.21	0.22	0.22	0.23	0.24
Preference capability	0.26	0.25	0.27	0.24	0.24	0.21	0.21	0.25	0.25	0.24	0.27
<i>Strengths</i>											
Preference weather	0.27	0.35	0.22	0.26	0.27	0.22	0.25	0.25	0.27	0.23	0.26
Preference export	0.27	0.18	0.34	0.17	0.17	0.15	0.16	0.20	0.22	0.25	0.24
Preference expertise	0.29	0.31	0.28	0.31	0.29	0.36	0.36	0.29	0.27	0.27	0.24
Preference policy	0.17	0.16	0.17	0.27	0.27	0.27	0.23	0.27	0.24	0.25	0.27

Survey



Scatter diagram of average consistency ratio (y) against confidence (x)

SCENARIO WORKSHOP

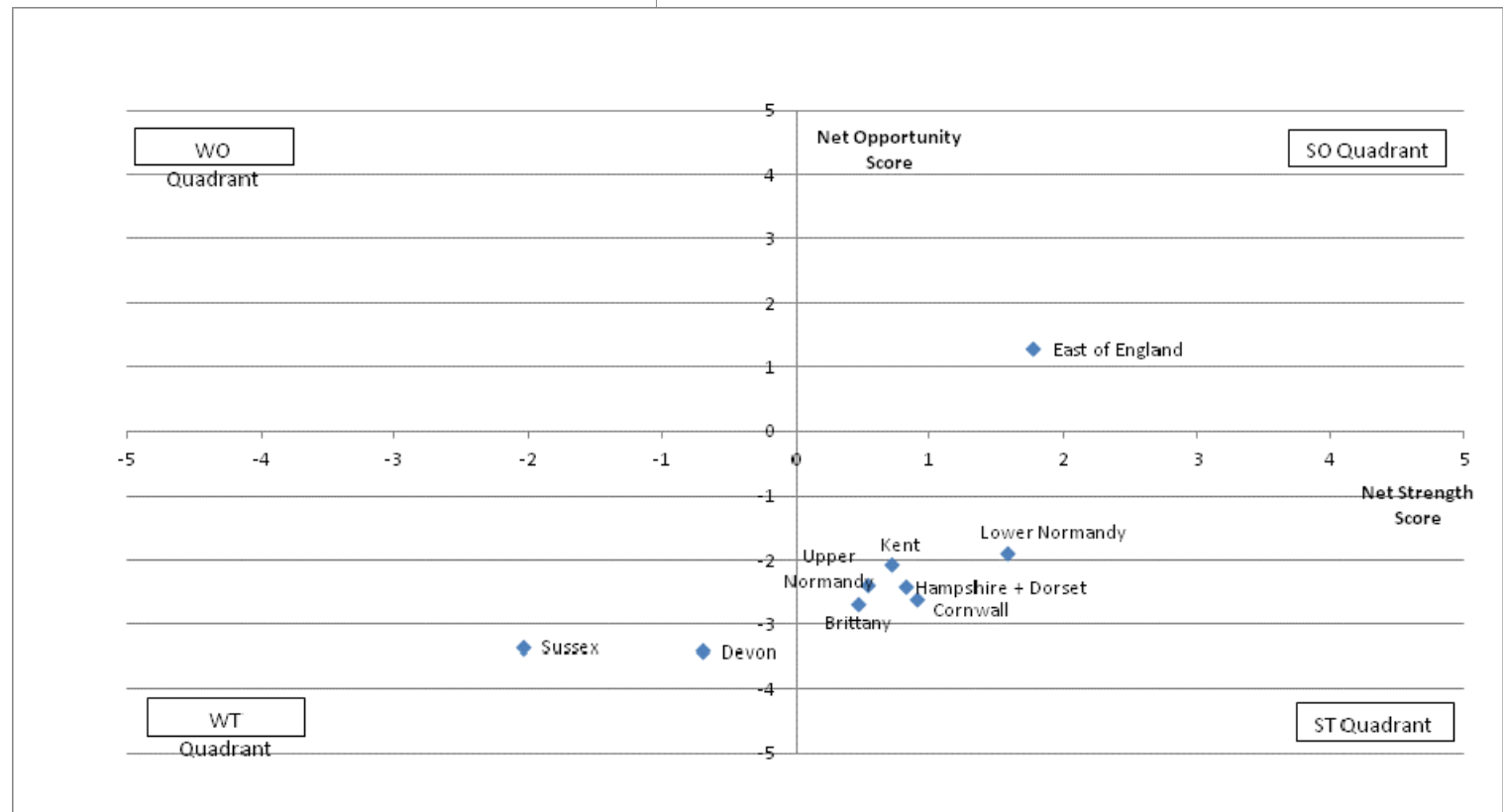
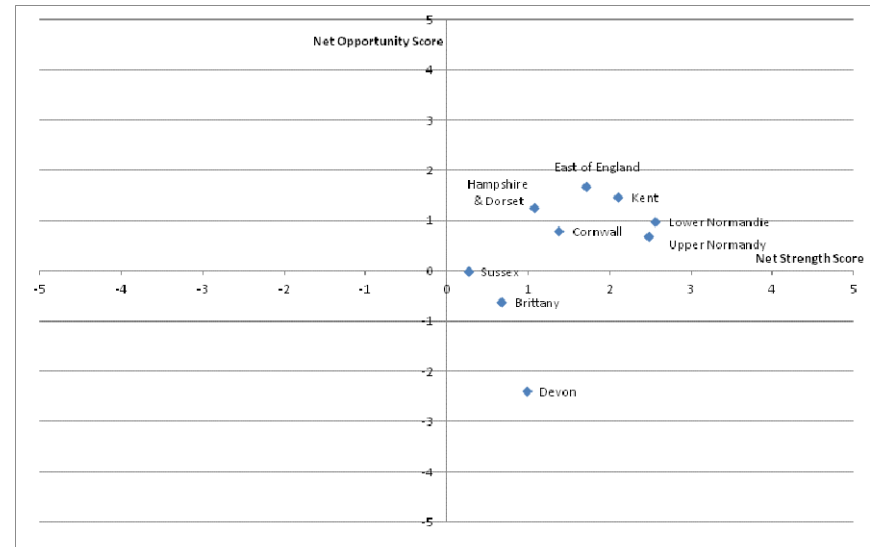


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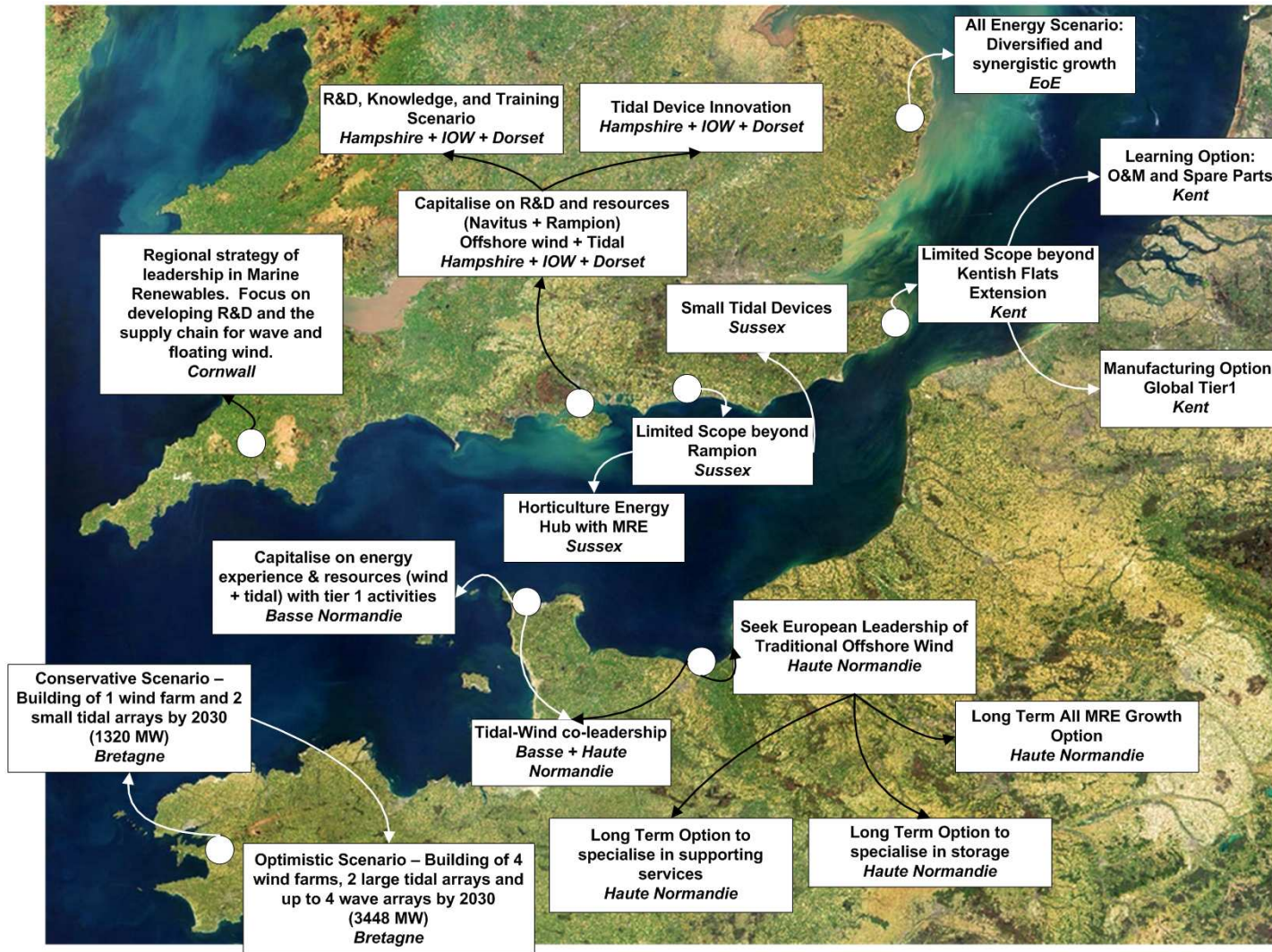
External Factors	Rating	Wind	Tidal	Wave	Comments
Construction	5	33	33	33	<p><u>Eolien posé</u>: Opportunités avec l'attribution des 2 parcs du Tréport et de Fécamp (5 usines en construction pour la fabrication d'éoliennes, destinées à Areva et à ses sous-traitants, 1 usine de fabrication de fondations gravitaires, 1 usine de construction de mâts). Nombreuses entreprises dans le secteur de la fabrication de matériaux et composants et installation/raccordement électrique.</p> <p><u>Eolien flottant/hydrolien/houlomoteur</u>: Peu d'acteurs clairement positionnés mais ceux qui s'impliquent dans l'éolien posé pourraient à terme diversifier leurs activités sur ces marchés.</p>
R&D	3	90	5	5	<p><u>Eolien posé</u>: Réseau de recherche organisé (CEVEO) et pluridisciplinaire. Opportunités futures avec le projet WIN et l'implantation du centre d'innovation d'Areva au Madrillet en 2015. Mais encore peu de visibilité en France et concurrence avec d'autres territoires.</p> <p><u>Hydrolien/houlomoteur</u>: Capacités de R&D très peu développées (pas de gros développeurs de technologies en région, en dépit de quelques initiatives).</p>
O&M	5	100	0	0	<p><u>Eolien posé</u>: Opportunités avec l'attribution des 2 parcs du Tréport et de Fécamp (centre de maintenance d'AREVA à Dieppe et au Tréport). Nombreuses entreprises du secteur présentes sur le territoire.</p> <p><u>Hydrolien/houlomoteur</u>: Opportunité peu probable dans la mesure où les opérations de maintenance ont lieu à proximité du lieu de production (et pas de projets en Haute-Normandie).</p>
Downstream Supply Chain	5	33	33	33	<p><u>Eolien posé</u>: Le territoire dispose d'acteurs présents sur l'ensemble de la chaîne de valeur. Néanmoins, peu d'entre eux sont des acteurs de rang national ou international</p> <p><u>Eolien flottant/hydrolien/houlomoteur</u>: Peu d'acteurs clairement positionnés mais ceux qui s'impliquent dans l'éolien posé pourraient à terme diversifier leurs activités sur ces marchés.</p>
Internationalisation	3	70	15	15	<p><u>Eolien posé</u>: Potentiel intéressant à l'export pour les entreprises régionales avec la proximité avec le Royaume-Uni.</p> <p><u>Eolien flottant/hydrolien/houlomoteur</u>: Potentiel à l'export pour les composants du fait de la proximité avec le Royaume-Uni et</p>

Regional Ratings

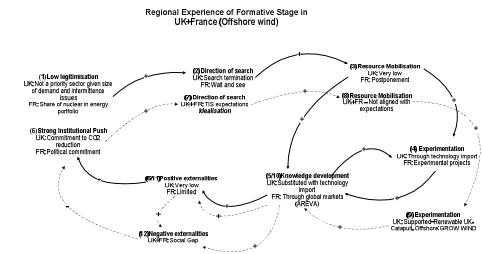
Strategic Maps



Scenarios



Technology Innovation System (TIS) Analysis



- Idealisation of MRE
 - No formative stage
 - Gold rush mentality
- Materialisation & Geography
- Successful case: east of England
 - Oil and gas experience
 - All energy focus
 - Service focus
- Lessons learned
 - Wave and Tidal

Can construction opportunities be captured? Sustainable?

Why not consider CAPEX and OPEX as different opportunities altogether?

What past experiences give a genuine advantage?

Disconnection with electricity industry

Realistic economic impacts?

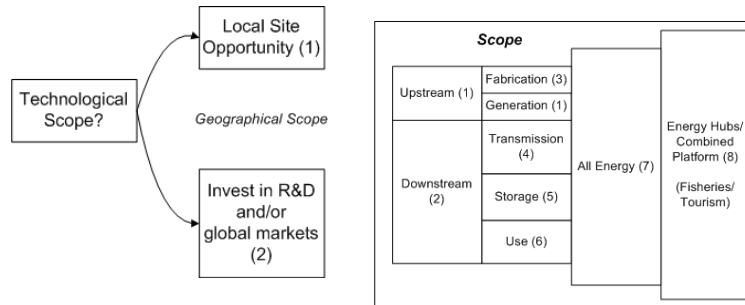


SCENARIO WORKSHOP



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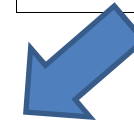
Emerging key strategic decisions



Robustness Analysis of Scenarios

Traditional Scenario Analysis about Industry

Technology	Social Acceptance	Scenario	Impact
Fails	Rejection of MRE	1. Failure scenario	Investments in MRE become sunk costs.
Fails	Status Quo	2. Decline scenario	Investments in MRE become sunk costs.
Fails	Acceptance	3. Disappointing scenario	May survive through subsidies
Mixed results	Rejection of MRE	4. Decline scenario	Mixed results are not enough to offset social rejection
Mixed results	Status Quo	5. Struggling scenario	The sector will survive in its current form
Mixed results	Acceptance	6. Supported scenario	Will survive through minor subsidies
Rapid growth	Rejection of MRE	7. Question mark scenario	Will technology success be enough to silence public opinion?
Rapid growth	Status Quo	8. Technology wins scenario	Sustainable sector
Rapid growth	Acceptance	9. Nigashima shelf scenario	Coastal regions become the new centre of economic activities



Region	Scenario	Decision 1	Decision 2	F1	F2	F3	F4	F5	F6	F7	F8	F9	Average
Sussex	Small Tidal Devices	1	2	25	25	30	40	45	50	70	70	70	47
Kent	O&M Spare parts	1	1	30	40	50	40	45	50	50	55	60	47
Bretagne	Generation	1	1	25	25	25	30	40	50	40	50	60	38
H Normandie	LT options	2	1	25	25	25	40	50	60	50	60	70	45
Hampshire	R&D	3	1+2	25	25	30	50	50	60	50	60	70	47
Cornwall	Wave and Floating R&D	3	1+2	0	0	0	50	60	70	80	90	100	50
Kent	Global Tier 1	3	2	0	0	0	50	50	50	60	70	80	40
EoE	All energy	7	2	60	60	60	70	70	70	75	90	100	73
B Normandie	All energy - tidal	7	2	25	25	25	50	60	70	80	90	100	58
Sussex	Energy hub	8	1	10	10	20	10	30	40	40	70	70	33
H Normandie	Offshore wind generation	1+3	1	25	40	50	25	40	50	40	50	60	42

Confirms patterns of robustness

Tying installations with fabrication creates confusion and false hopes - Gold rush perception that decreases interest in R&D

Higher robustness of all energy and downstream options at regional level

Robustness Analysis





Conclusion

- Context + system analysis → Robust starting point for regional strategy
- Would the regional scenarios have been ‘better’ if a common template/approach was used?
 - It could be argued that more is learned from the post-formulation analysis of ‘free form’ scenarios
 - Take into account:
 - The likely reluctance of a large dispersed team/subteams to adopt a very formal, long formulation process
 - The risk of adopting a template creating boundaries
 - The challenge for non experts involved with the process
 - The limited time for reflection
 - Lack of data, inconsistencies, differences, confusion are data
 - Merits of a staged approach

