

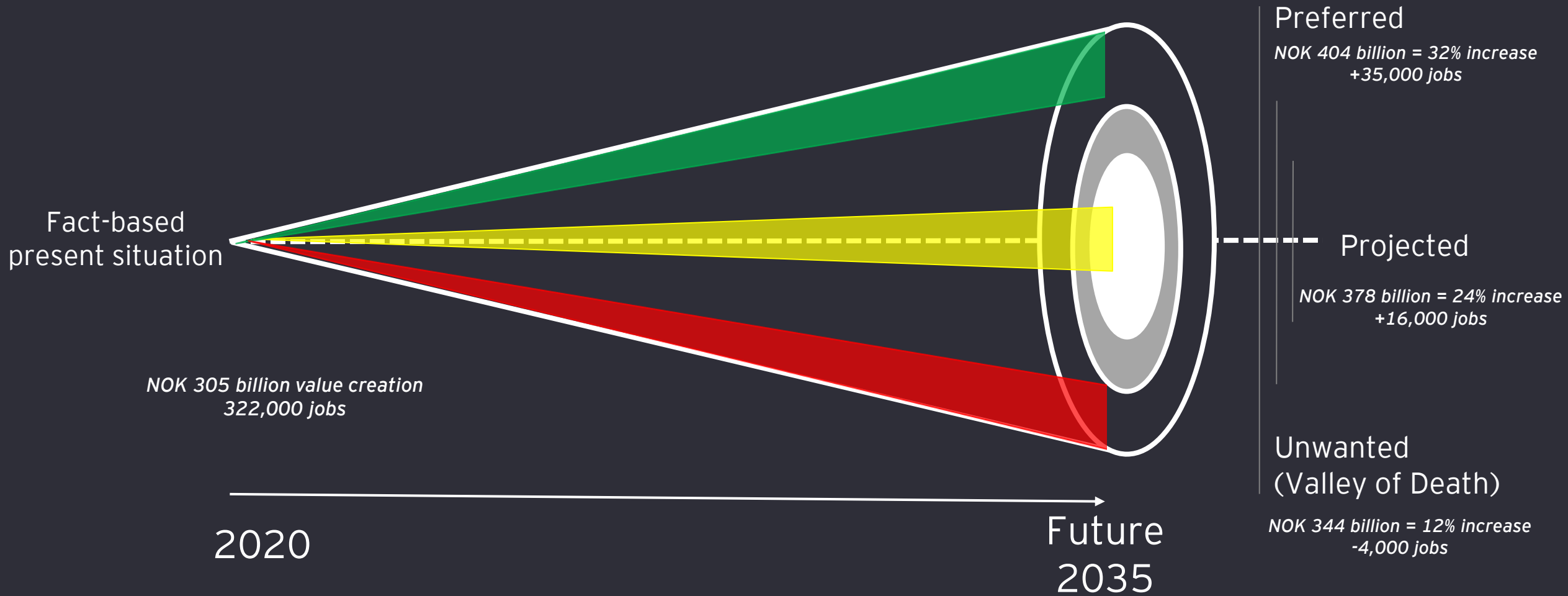
Grøn region

'Vestlandsporteføljen 2021'

Disclaimer

- This report includes selected parts of the EY report Grøn region 'Vestlandsporteføljen 2021'.
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- [Click here](#) to read the Norwegian report.

The 2020 Vestland scenarios set the direction for "Vestland Inc"

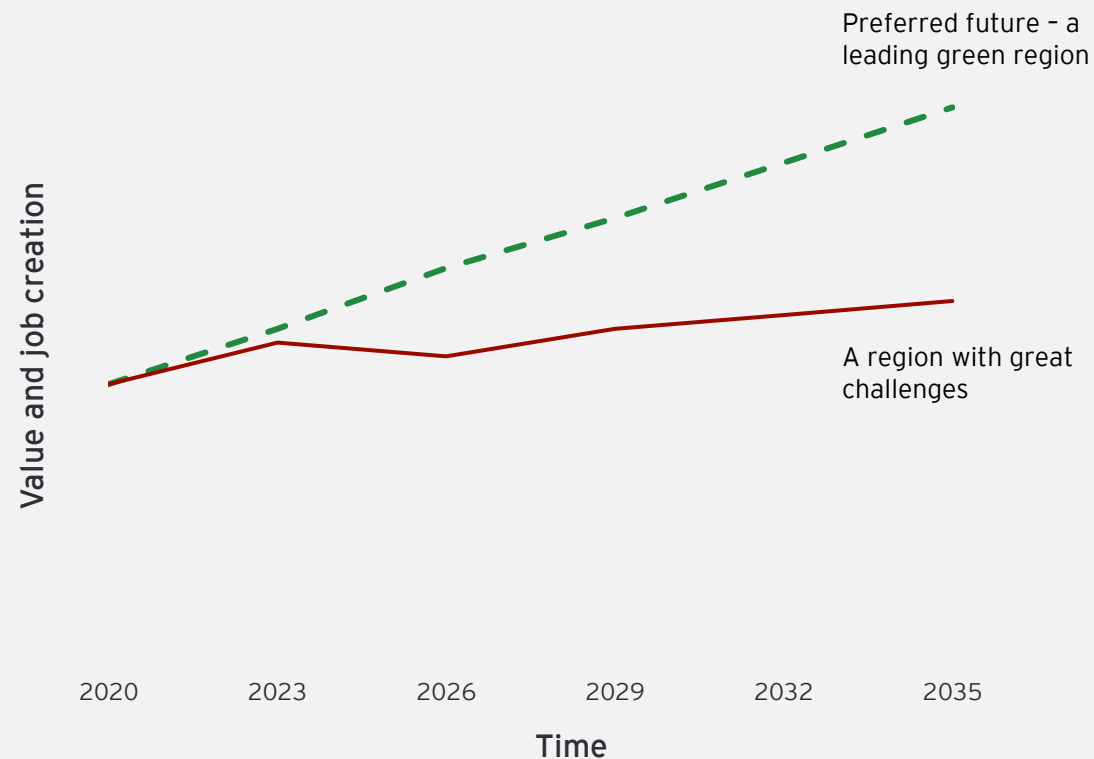


The Green Region shows that we need to pick up speed

Main findings

1. We are currently an oil-driven region that is to be transformed into a green powerhouse. In a few years, we must deliver strong growth in new export sectors.
2. EU, our main market, demands solutions that Vestland is positioned to develop.
3. Vestland now has a roadmap with the key projects to succeed.
4. We have eight years to complete the projects that will ensure value and job creation and reduce our emissions by 55% - we must focus our efforts wherever they produce the largest effect.
5. The analysis indicates that building "green hubs" and industrial symbiosis will create and scale up the new green value chains. This gives us significant regional and national knock-on effects.
6. We are not equipped to realize the identified opportunities in The Vestland Portfolio and regional portfolios. We have critical value creation and green jobs on hold. These can quickly disappear out of Norway and Vestland if we fail to pick up the pace.
7. We must build green infrastructure to succeed. We need to establish a joint effort to accelerate, implement priorities and realize The Vestland Portfolio- we need to build Vestland together.
8. We must think big - we need to scale up the major opportunities across the county and Europe - we need to put together a comprehensive puzzle to succeed by 2030.

2023 will be the tipping point - can we scale up in time?





~ 400
actors involved

~ 200
participants in workshops
and stakeholder meetings

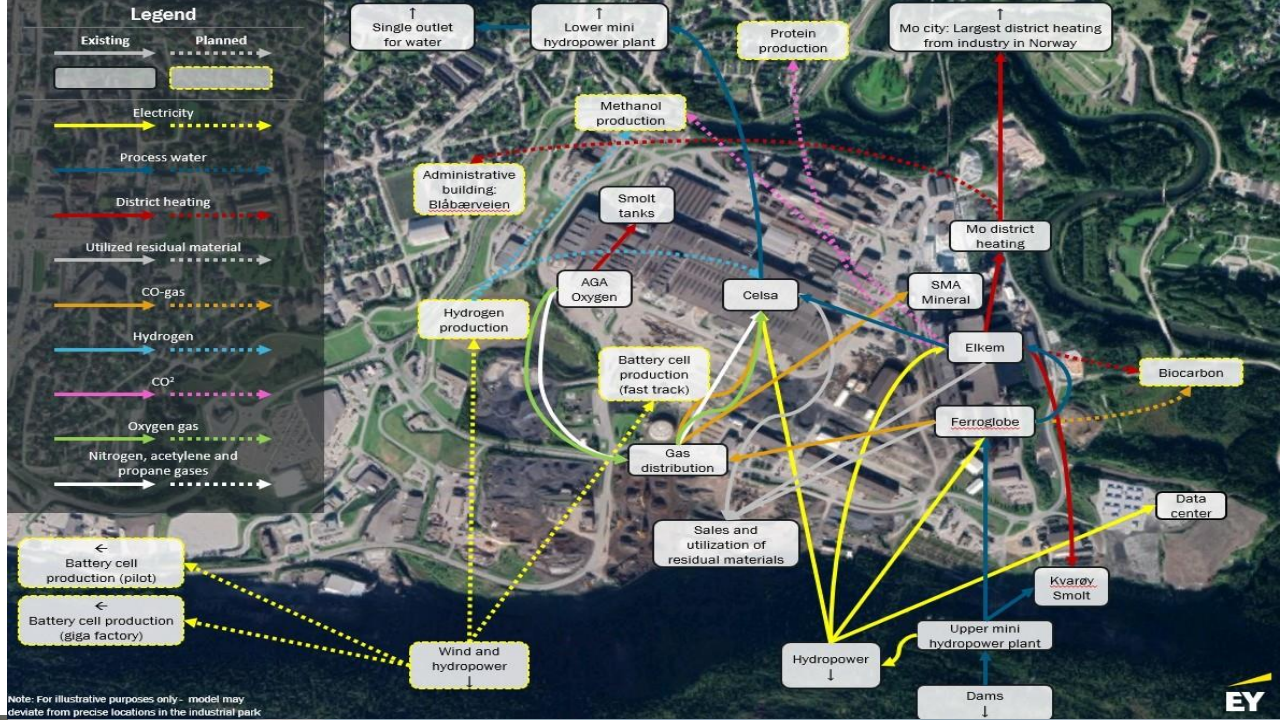
~ 250+
identified projects

Thank you to all the business and the partnership involved in this collaborative project.

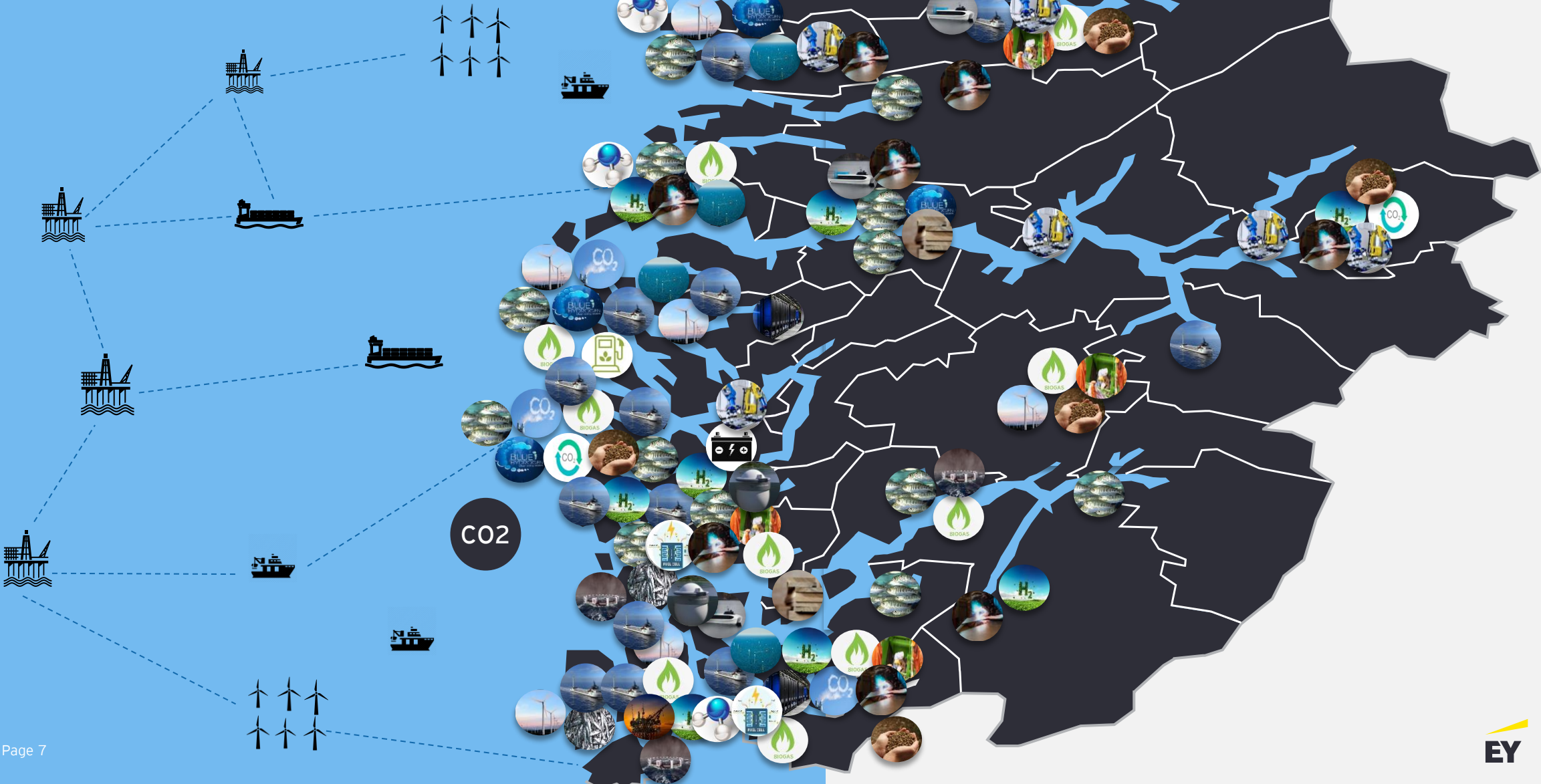


The analysis indicates that the future junction of the major transformation will be concentrated in today's industrial parks and harbors along the coast.

Green Region has prioritized holistic projects that can build infrastructure and realize business opportunities through symbioses between actors in the development of new value chains.



To reach targets and realize new value chains, Vestland must build a new energy system and green infrastructure that connects sea and land

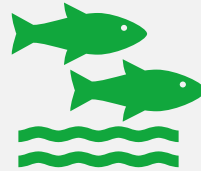


In 2021, Team Green Region has therefore prioritized four battles that must be won now

Build world-leading green hubs through industrial symbiosis



Position itself as a leading marine region worldwide



Build innovative green infrastructure



Increase pace through prioritization and the best cooperation infrastructure



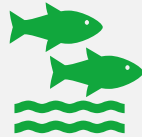
Critical success factors to win the four battles

Build world-leading green hubs through industrial symbiosis



- Realize the value-added potential of strategic green hubs
- Industrialize the hydrogen economy in and between the hubs
- Enable the decarbonization of the processing industry and maritime transport
- Facilitate marine growth and scale up CCU and bio-economy across the county
- Build infrastructure for offshore wind
- Connect the knowledge sector and R&D environments to the green hubs

Take the position as the globally leading ocean region



- We have the competitive advantages and the portfolio for the entire Vestland. The basis must be used to scale up "Invest in Vestland"
- Build regional master plans collaboratively for increased attractiveness
- Increase the number of national and international establishments and share of head offices
- Develop, attract and retain the expertise we need to develop Vestland
- Bergen must be internationally recognized as the sea capital

Build innovative green infrastructure



- In collaboration with key authorities, ensure a step-by-step commitment plan for getting The Vestland Portfolio the necessary grid capacity
- Build an energy system between sea and land which enables us to become leaders in industrial densification and symbiosis
- Prioritize infrastructure innovation where the risk of lost competitiveness is greatest
- Bring out the potential for energy and material recovery in the green hubs

Increase pace through prioritization and collaboration



- Adopt a common voice and activation of all regional actors in Vestland
- Establish an organizational structure and portfolio management for The Vestland Portfolio and regional portfolios through partnerships
- Define a clear plan, priorities, and targets and ensure target follow-up
- Develop and strengthen partnerships and projects in The Vestland Portfolio to win the battle for Norwegian and European innovation financing
- Action platform - Define a common plan to connect actors and close skills gaps

The magic formula for success is sustainability goal number 17 - collaboration to achieve the targets

The barriers from The Vestland Scenarios are still highly applicable - now the entire county must mobilize



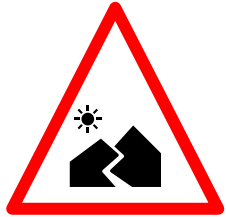
Lack of power grid capacity hinders new establishments and growth



Lack of collaboration across value chains and geography



Excessive gap between research, education and business



Loss of expertise and infrastructure from oil and gas



National policy instruments, public funding agencies and support structures, not adapted to the EU



Lack of experience from pilots, scaling, commercialization



Missing sense of urgency - we are late!



Domestic market and regulations



Lack of access to skills and expertise, i.e., "brain drain"

Brief information about the assignment and the report

Areas of focus

Green business development

This knowledge base has been commissioned by the Vestland County Council and Innovation Norway to expand on the Vestland Scenarios with specific projects and initiatives that must be realized to succeed with green business development. The project gives the status for Vestland's green transition.

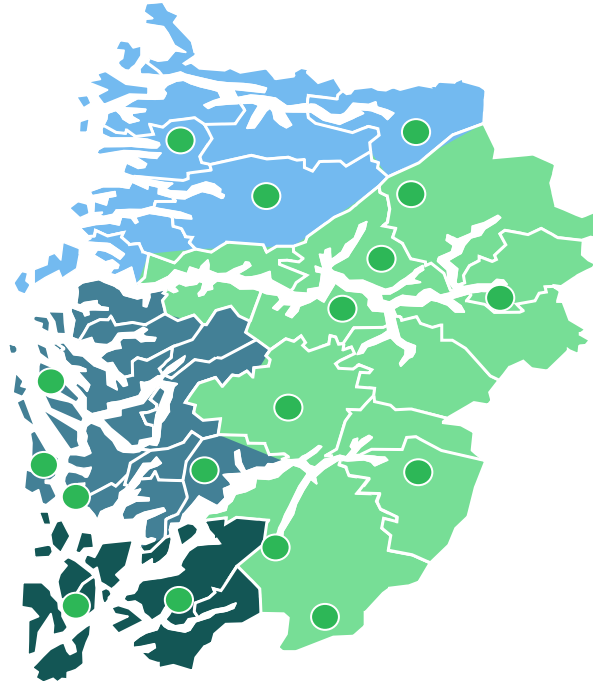
This work includes, among other things, an analysis of which new value chains, business opportunities and concepts must be developed to realize attractive, green regions. It also covers cooperation opportunities that should be used to share and benefit from a common innovation structure. This has been done with broad involvement of businesses, business incubators, and other community actors in the regions.

Competitive advantages and barriers

The project reveals how regional innovation and development can be realized on the basis of unique competitive advantages, as well as the barriers that must be knocked down.

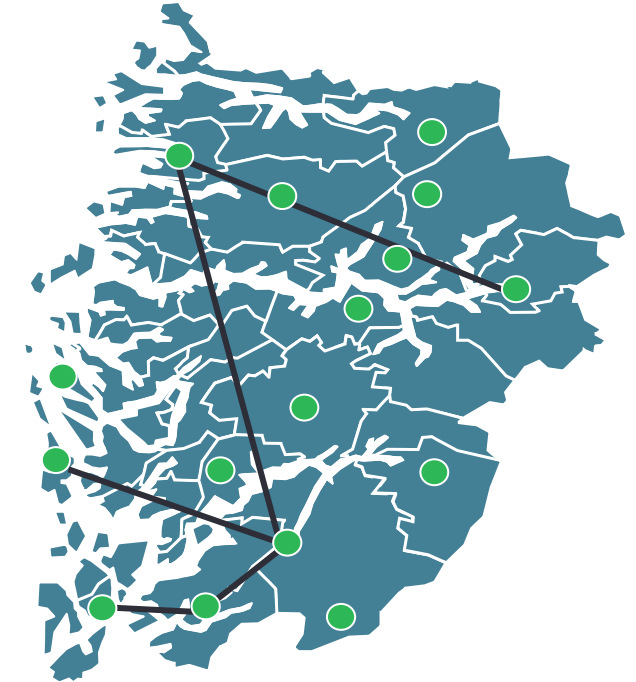
Sustainable value creation is realized through close cooperation between business, R&D and the policy instruments, public funding agencies and support structures, with common roadmaps and action plans.

Business opportunities and concepts



Areas of focus, concepts and business opportunities critical to green business development have been identified and prioritized through close cooperation with the region.

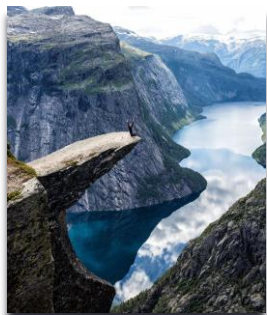
Value chains



Priority business opportunities and innovation projects with potential for scalability are linked in value chains across the county.

Vestland green region

Four regional reports



Indre Vestland



Fjordane



Bergensregionen



Sunnhordland

Main report The Vestland Portfolio



The project has six main objectives:



Vestland's map for green business development



Uncover opportunities and barriers to green development in each region



Uncover collaboration opportunities, concepts and value chains across regions



Identify scalable innovation projects



Clear recommendations on how policy instruments, public funding agencies and support structures should be equipped to best support value chains and innovation projects being identified



Clear and distinct recommendations for the county's Action Program for 2022-2025 on Sustainable Value Creation

While Vestland is experiencing an almost all-time high on the price development of key export industries in 2021, the underlying need to take common action appears urgent. We need to build new export areas

When The Vestland Scenarios were prepared in Q3 2020, prices for key export industries had fallen dramatically since Q2 2020. Since its publication, the start of a green shift in Europe has intensified the battle for energy, and both demand and prices have risen markedly for key export industries such as oil, gas, seafood and aluminum. Renewable energy and CO2 quotas are also increasing.

1



Oil exports have experienced a marked growth since September 2020 due to strong oil price rises. The volume of oil exported in August was the highest since October 2008.

2



Gas exports reached record levels in September this year, with a near seven-fold increase in value from the same time last year. This is due to a surge in European gas prices.

3



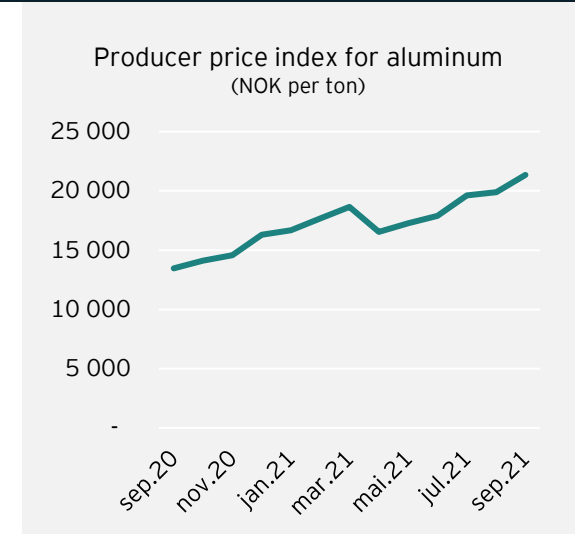
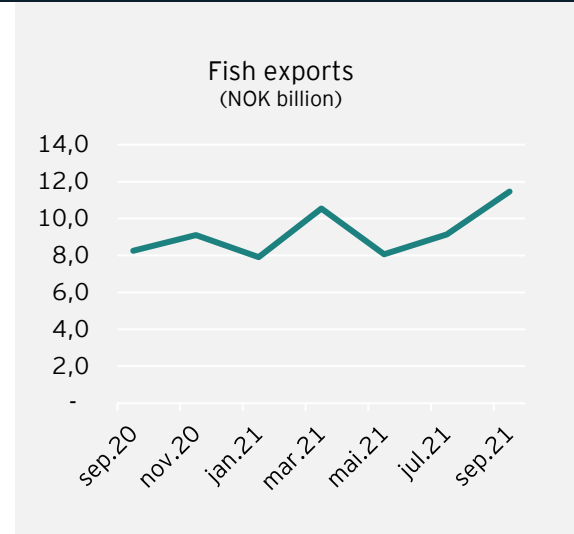
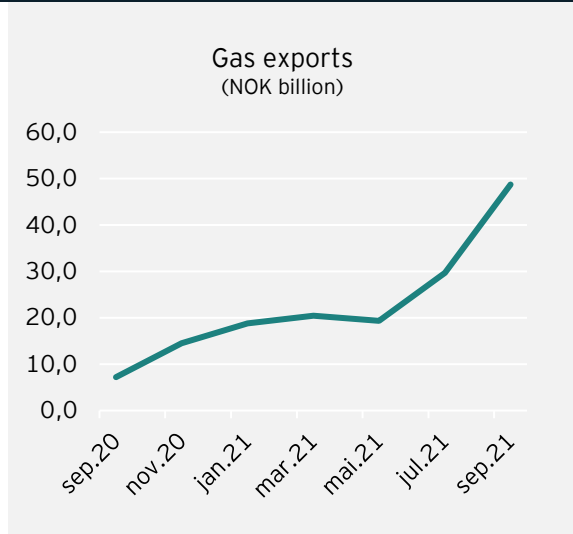
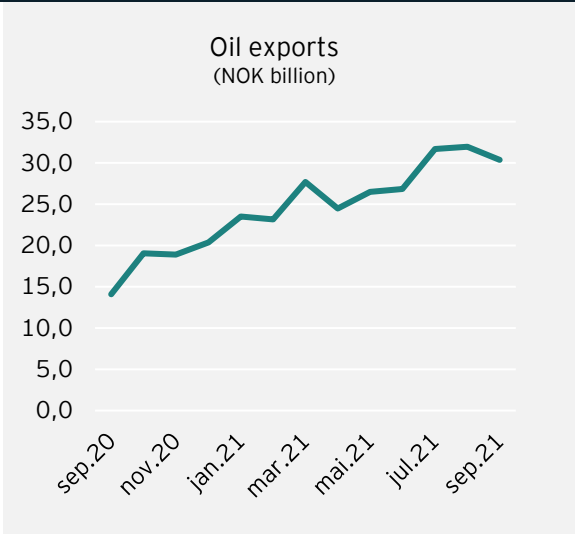
Seafood exports reached record levels in September, with NOK 11.5 billion in September 2021. This is primarily driven by a surge in volume growth.

4



Historically high prices for aluminum relative to August 2020. Export value increased from NOK 3.3 billion in September 2020 to 4.2 billion in September 2021.

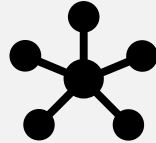
High activity level in the supply sector of our main export industries



We agree that we have unique competitive advantages



Coastline and ports - strategically positioned for all industries where "sea meets land"



World-leading clusters



Highly skilled workforce, educational institutions, vocational schools and research institutes



Epicentre of electrification



Leading exporters in a variety of industries
NOK 90 billion = 19%



Available area to create new industries



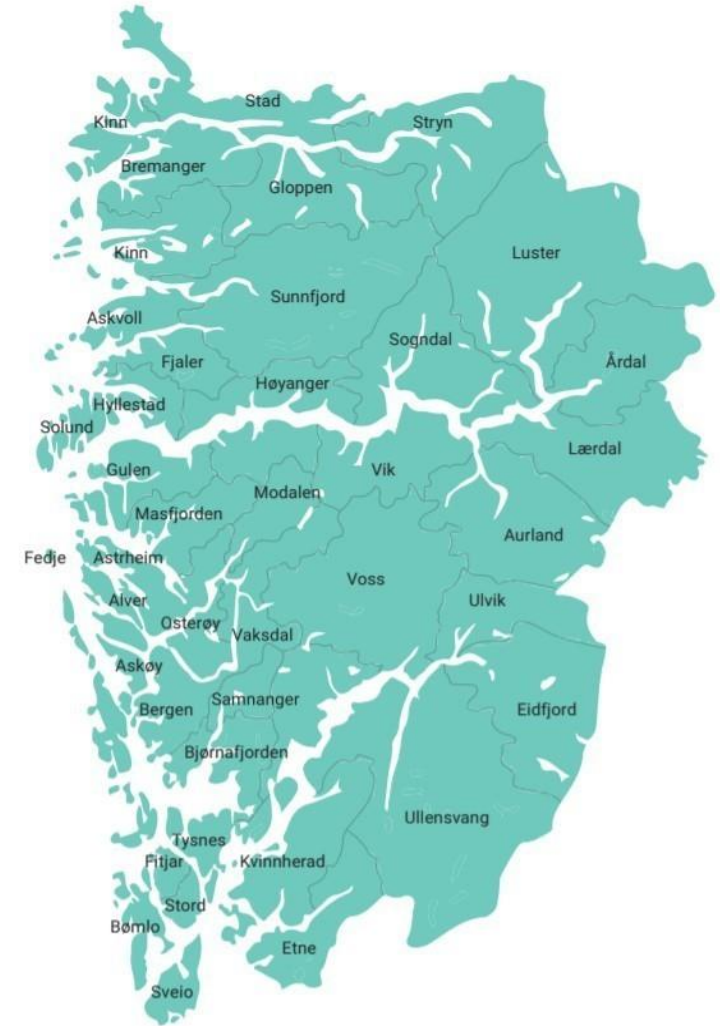
Well-developed infrastructure and potential for realizing circular business models



The world's most beautiful fjords and natural conditions like no other



"Power county"
(produces 25% of the power)



The Vestland Scenarios identified seven global megatrends that will affect Vestland. Through the Green Region, we see a connection between megatrends and the innovation projects underway

Exponential climate change and pressure on land



Overconsumption of natural resources and need for circular models



Demographic changes



Decarbonization



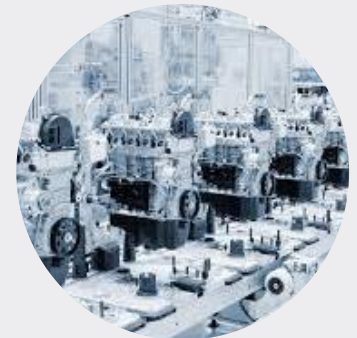
Globalization and techno-economic race



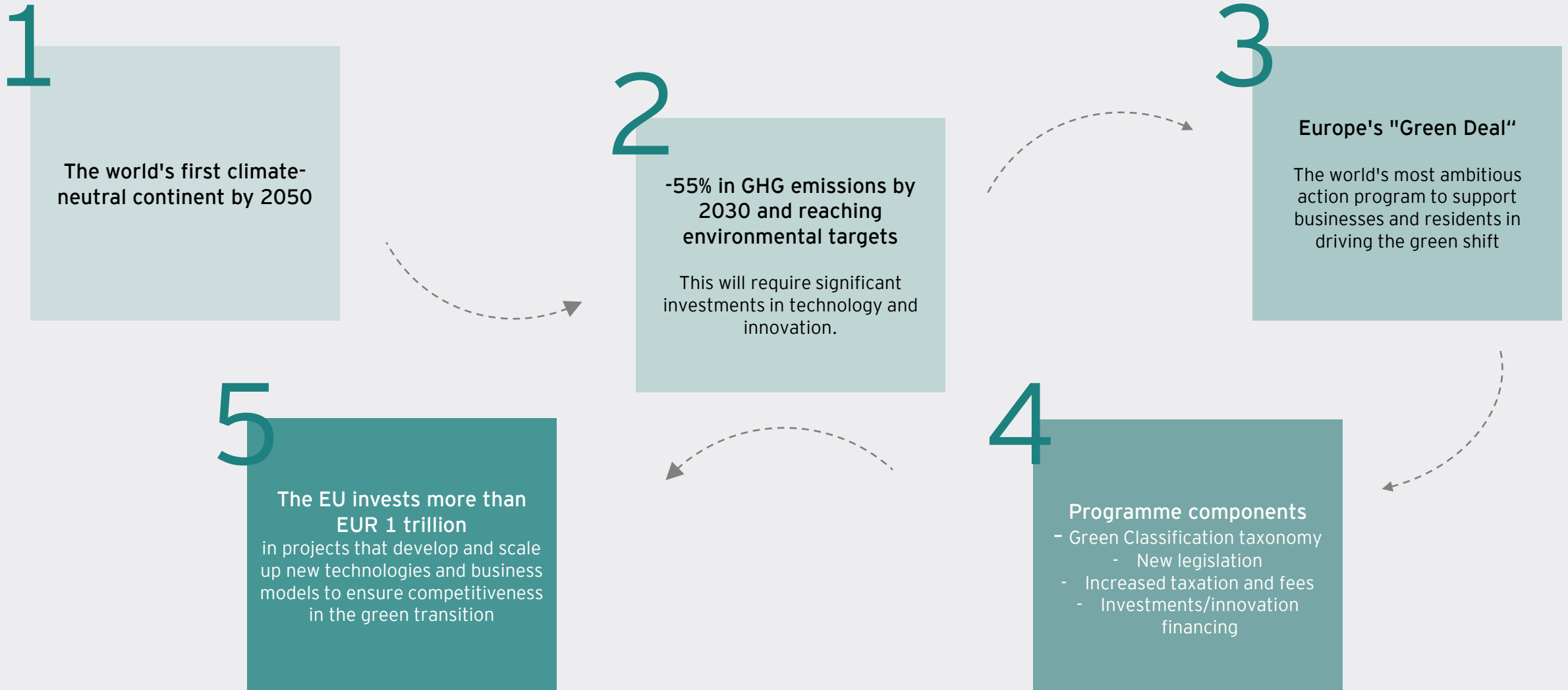
Industrial biotechnology, genetic modification and microorganisms



Technology and automation



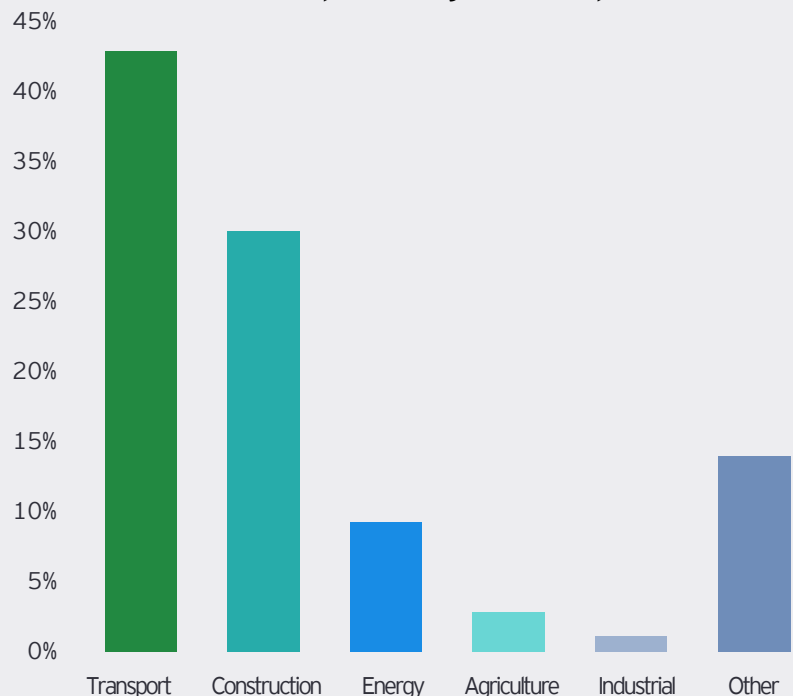
EU's Green Deal - Europe's growth plan to solve the EU's critical mission related to decarbonization will transform the demands of our core market



Europe's decarbonization will require major investment in all sectors, and the key projects in Vestland must acquire a share from the EU funding schemes to be competitive

The OECD estimates a global investment need of EUR 6.35 trillion annually to meet the targets of the Paris Agreement by 2030. The EU intends to invest as much as EUR 300 billion annually to fund this transition.

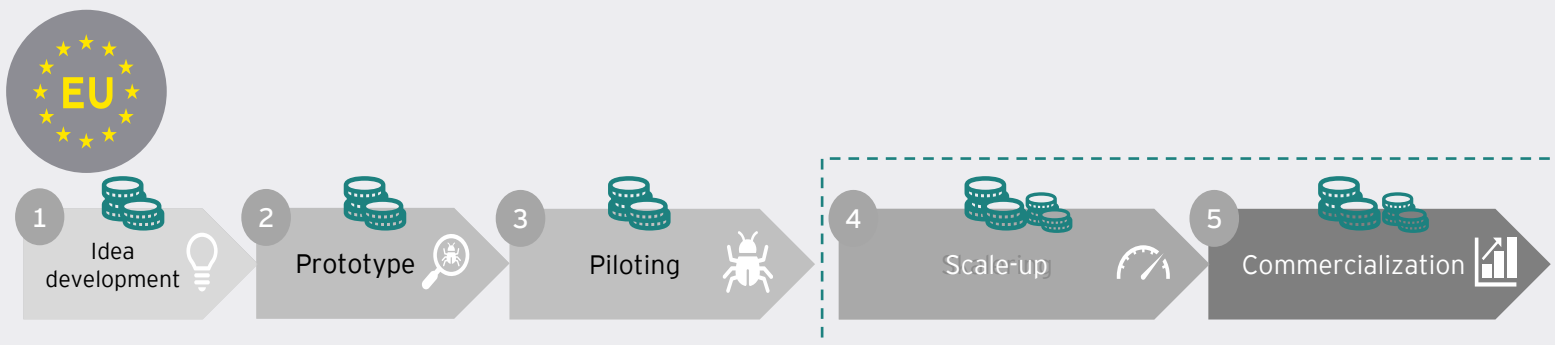
Estimated investments per segment for 2021-2050 measured as a percentage for Europe



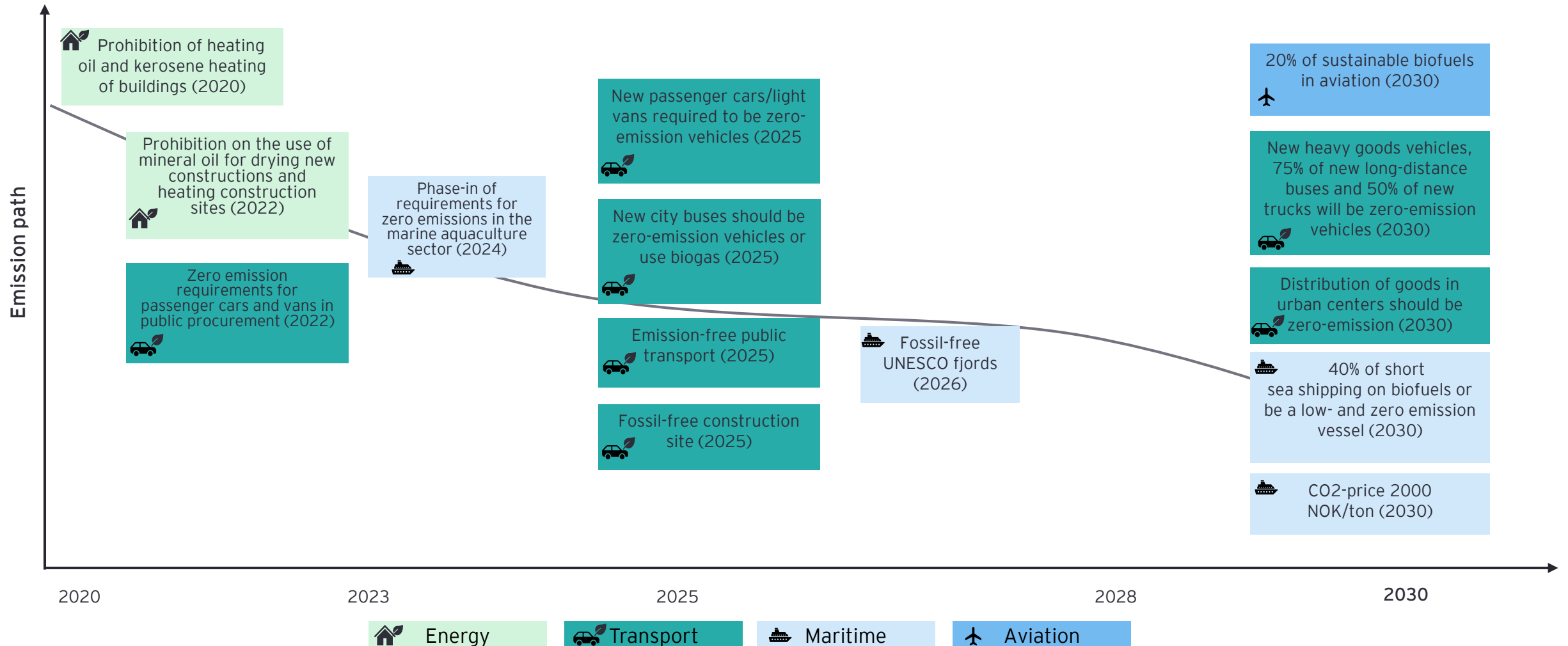
To accelerate the pace of the green shift, the EU is shifting a larger share of funds from basic research to scaling and commercialization. This means that businesses and regions must be more closely involved in research projects.

Increased funds available for scaling and commercialization create great opportunities for Vestland's businesses, and especially for those who think collaboratively. Cross-regional and cross-border cooperation projects in the EU will be key to major funding opportunities with a range of other benefits such as network access, market access, access to talents and international reputation.

These are critical factors in securing and scaling up new business opportunities in Vestland.

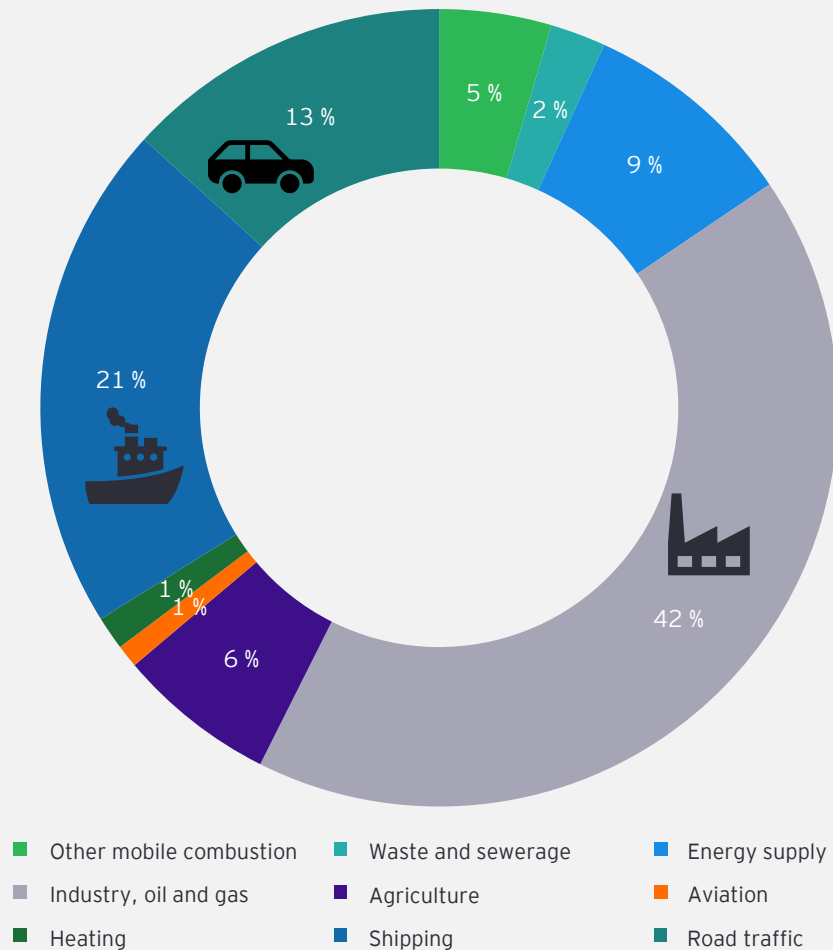


The business sector must undergo radical changes if Norway is to reach its climate goal of a 55% emission reduction by 2030



Decarbonization efforts must be aimed at measures that creates the greatest effect. We must focus on industry, oil and gas, shipping and road traffic

Emission broken down by sector 2019



Major point emissions in the county in 2019



Equinor Mongstad refinery
1,750,000 tons of CO2 equivalent



Hydro aluminium Årdal
374,300 tons CO2-equivalent



Hydro Husnes
306,120 tons of CO2 equivalent*



Tizir Titanium & Iron AS
257,600 tons CO2-equivalent




















































BIR Avfallsenergi
229,000 tons of CO2**



Elkem Bremanger
197,700 tons of CO2 equivalent

Status of new green value chains and business opportunities across the regions of the county

Value chain	Situation in Vestland	Examples of companies	Central locations	Momentum	Status
 Seafood/Aquaculture	Strong position in fisheries and aquaculture, with increasing emphasis on sustainability through new production methods (e.g., land-based) and the production of new species (e.g., mussels and tare).	   	Competence clusters in Bergen. Multiple locations in Fjordane and Sunnhordland (e.g., Bremnes, Bømlo, Austevoll, Bulandet, Lutelandet, Svelgen).		Strong position with internationally leading technologies and world-leading expertise throughout the value chain. Competitive advantages are also associated with the exploitation of new species.
 Green shipping	High expertise and leading position in the electrification of vessels. Several ongoing projects to take the step forward with both hydrogen and ammonia as new fuel sources.	   	Electrification through Corvus in Bergen, ship design along the entire coast, technology hub in Stord/Rubbestadneset, Topeka project at Mongstad, etc.		World leader in electrification and the development of carbon-free propulsion systems. Especially competitive in the development of complex propulsion systems and fuel production.
 Green metallurgy	High expertise, good access to renewable power, and access to raw materials such as silicon, zinc, and aluminum provide Vestland with good conditions for success. Increasing focus on circular cycles/reuse of metals.	    	Especially large investment areas in Bremanger (silicon), Høyanger, Husnes and Årdal (aluminum)		Vestland has a strong position in the production of some metals, mainly silicon, zinc and aluminum, due to low energy consumption and CO2 emissions.
 Hydrogen	High competences from the oil and gas industry and the availability of large amounts of power lay the foundation for Vestland's ability to take a leading role as a producer of both blue and green hydrogen.	    	Large area of investment in maritime clusters (e.g., Mongstad and Energiparken, Fjordbase) and the industrial hubs (Tyssedal, etc.)		Ideal starting point for hydrogen exports with access to relevant expertise, renewable power, and need for decarbonization. We must act now so as not to lose momentum towards Europe.
 Offshore wind farms	High competence level and technological solutions from the oil and gas industry provide Vestland with good conditions for success in offshore wind, both floating and with seabed foundation. Very good natural conditions for floating offshore winds.	    	Very significant, new export venture. Possible to capture large parts of the value chain in floating wind. Bergen, Stord and Sløvåg are central locations now. Other locations are also positioning themselves.		Very good starting point with long-standing experience from similar industries (oil and gas and maritime). Well positioned in the field of floating offshore wind, but slightly behind European competitors in regard to offshore wind with seabed foundation.
 Batteries	Access to large marine areas and high expertise in marine minerals. Moreover, we have companies with ambitious plans for battery production and others with clear electrification plans.	  	The battery venture is mainly driven by Corvus in Bergen. Ability to establish a comprehensive value chain for minerals and batteries in Vestland		Vestland is well placed to succeed with seabed mineral extraction and battery production but is dependent on regulatory framework conditions for mineral extraction.
 CCU and CCS	High competence level from oil and gas industry, leading environments at the technology center at Mongstad, and major ongoing projects. Critical success factor for all high point emission sites in Vestland.	   	Central action areas in the industrial areas of Fensfjorden and Hjeltefjord basin (e.g., Mongstad and Energiparken), as well as on the major emission points in the process industry.		Strong position in the European market, especially through the "Langskip" (longship) project and the investment in blue hydrogen. The UK is the biggest European challenger in the field of carbon capture.
 Bioeconomy	Increasing interest from both key research environments and the business sector, preferably in conjunction with circular business models. Good resource access from both agriculture, marine agriculture and food waste.	  	Identified biogas plans in Gloppen, Bergen, Etne, Stord, and Voss. Furthermore, several initiatives are being developed around land-based breeding locations and maritime hubs.		Good access to bio-resources and renewable energy but depends on competence networks, stronger policy efforts, and framework conditions to keep up with European competitors.

Momentum



Most new green value chains face the following common challenges



Cost

Costs in new value chains must be reduced to an acceptable level



Volume

More initiatives need upscaling to become competitive



Infrastructure

Green infrastructure must be developed to support new value chains



Master plan

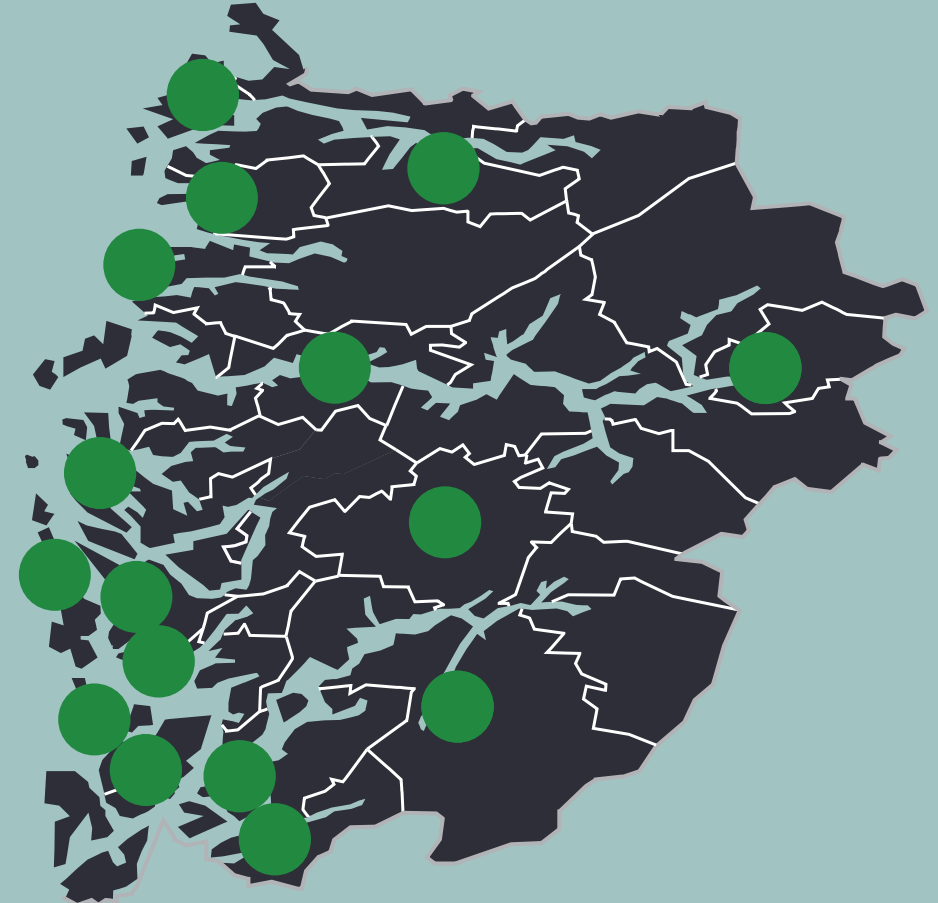
Initiatives must be part of a holistic approach to succeed. Success requires collaboration across industries and territories

Investments in the new green value chains in the county are fragmented

Throughout Vestland, there are many local ventures in new business opportunities and value chains, and several companies in different sectors. Despite the efforts, there is no overall plan for how Vestland's actors can develop projects and value chains.

There is a need for a common master plan to ensure that the best ideas are promoted and developed fast enough to put Vestland in the driver's seat internationally through the sharing of expertise, testing and infrastructure. For Vestland to succeed with further investments in green value chains, it is paramount to establish a common coordination that ensures that projects being worked on throughout the county are implemented.

Vestland has an attractive geographical location with proximity to natural resources and holds key investment areas for the Norwegian export industry. In addition to its strategic location, Vestland also enjoys a leading position in the development of new technologies and the exploitation of synergies between incubators and the business sector.



The pace of green transition in Fjordane

The Green Region project has identified

42 projects

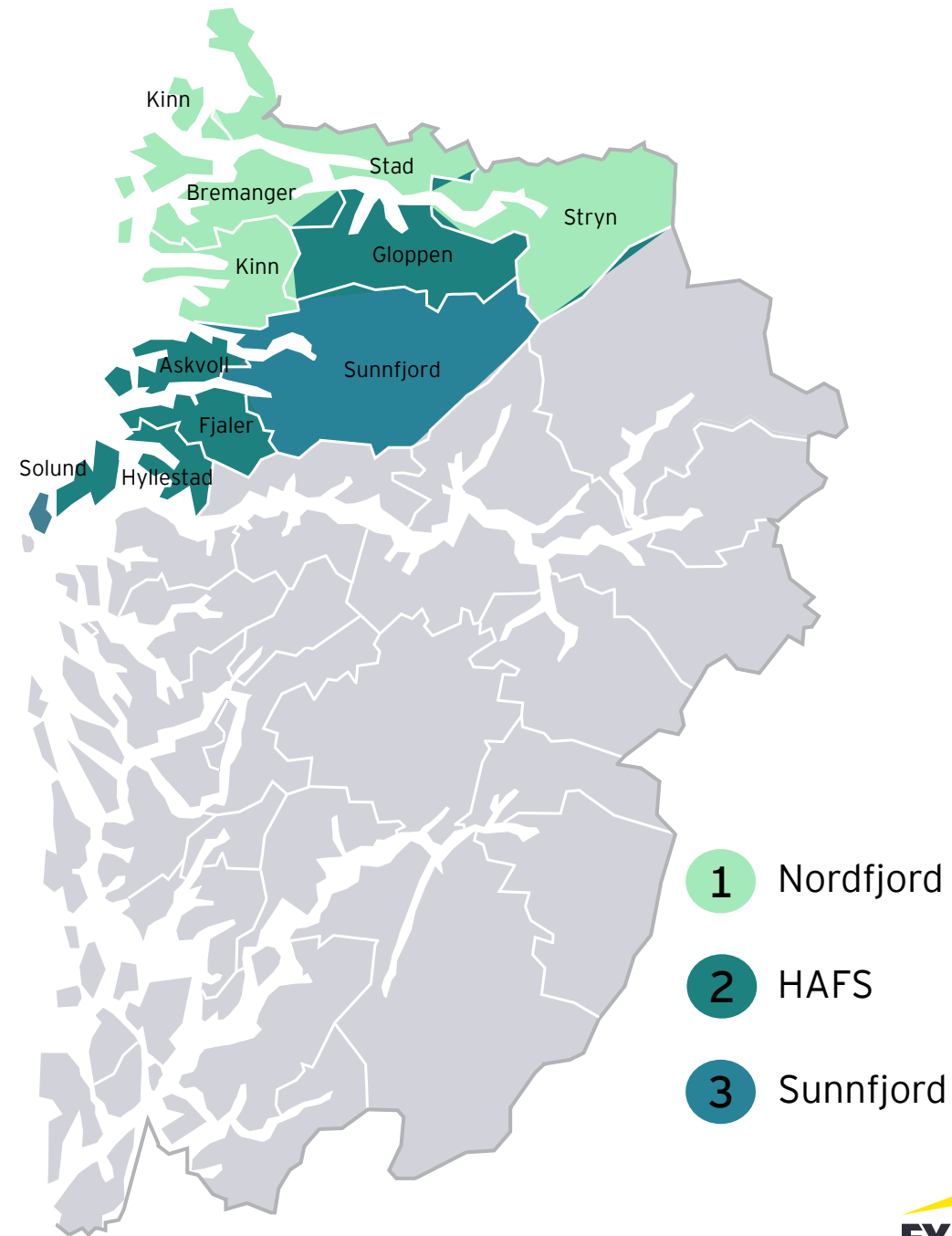
that could contribute to increased employment and green transition in Fjordane

8 regional concepts with high potential for synergies

that contribute to the achievement of the climate goals and increase value creation by engaging in each other's value chains

~ NOK 28 billion in total investments

~ 1,250 workplaces



The pace of green transition in the Inner Vestland

The Green Region project has identified

35 projects

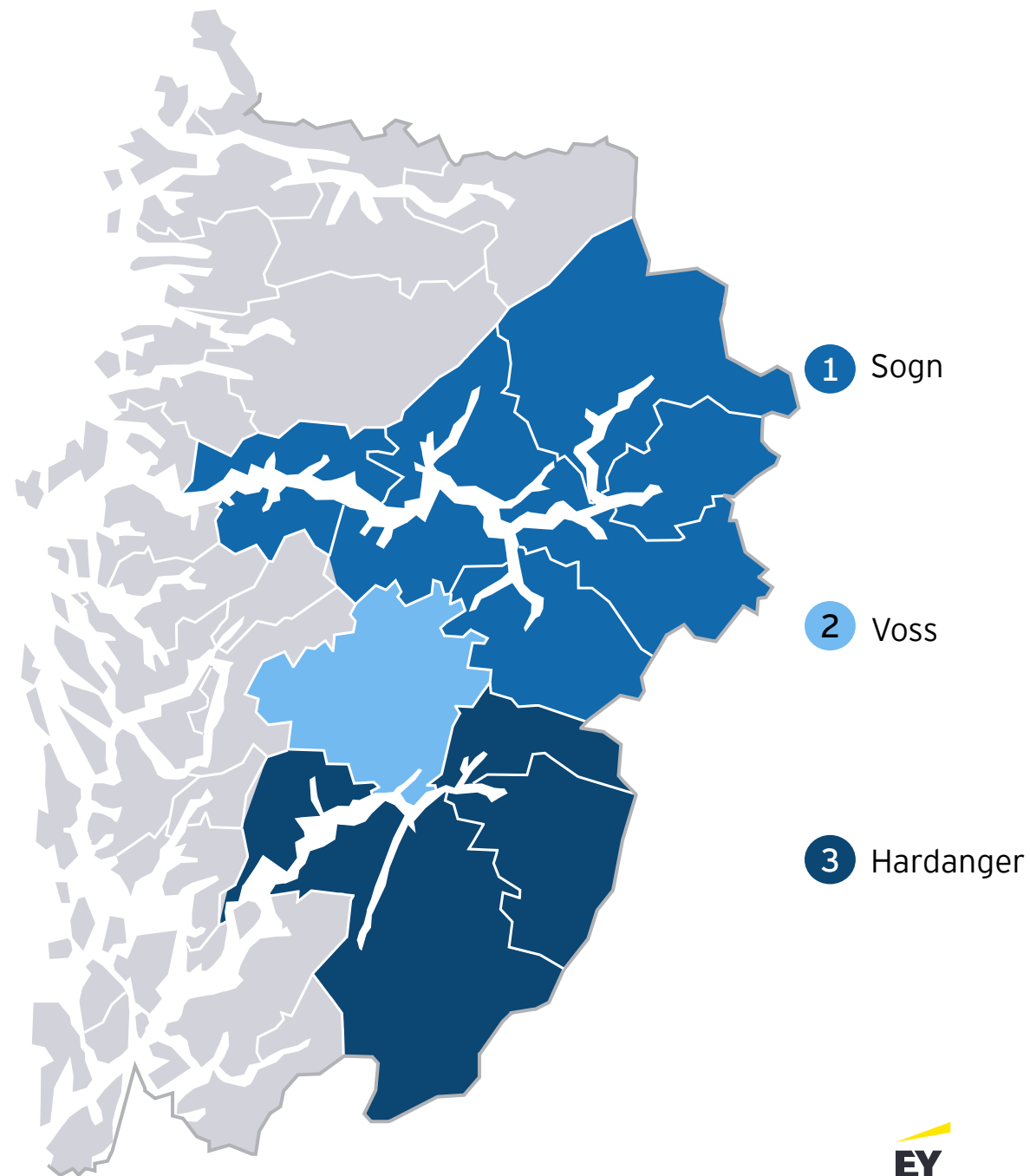
that could contribute to increased employment and green transition in the Inner Vestland

7 regional concepts

that contribute to the achievement of the climate goals and increase value creation by sharing each other's value chains

~ 28 NOK 28 billion in total investments

~ 1,400 new jobs



The pace of green transition in the Bergen region

The Green Region project has identified

72 projects

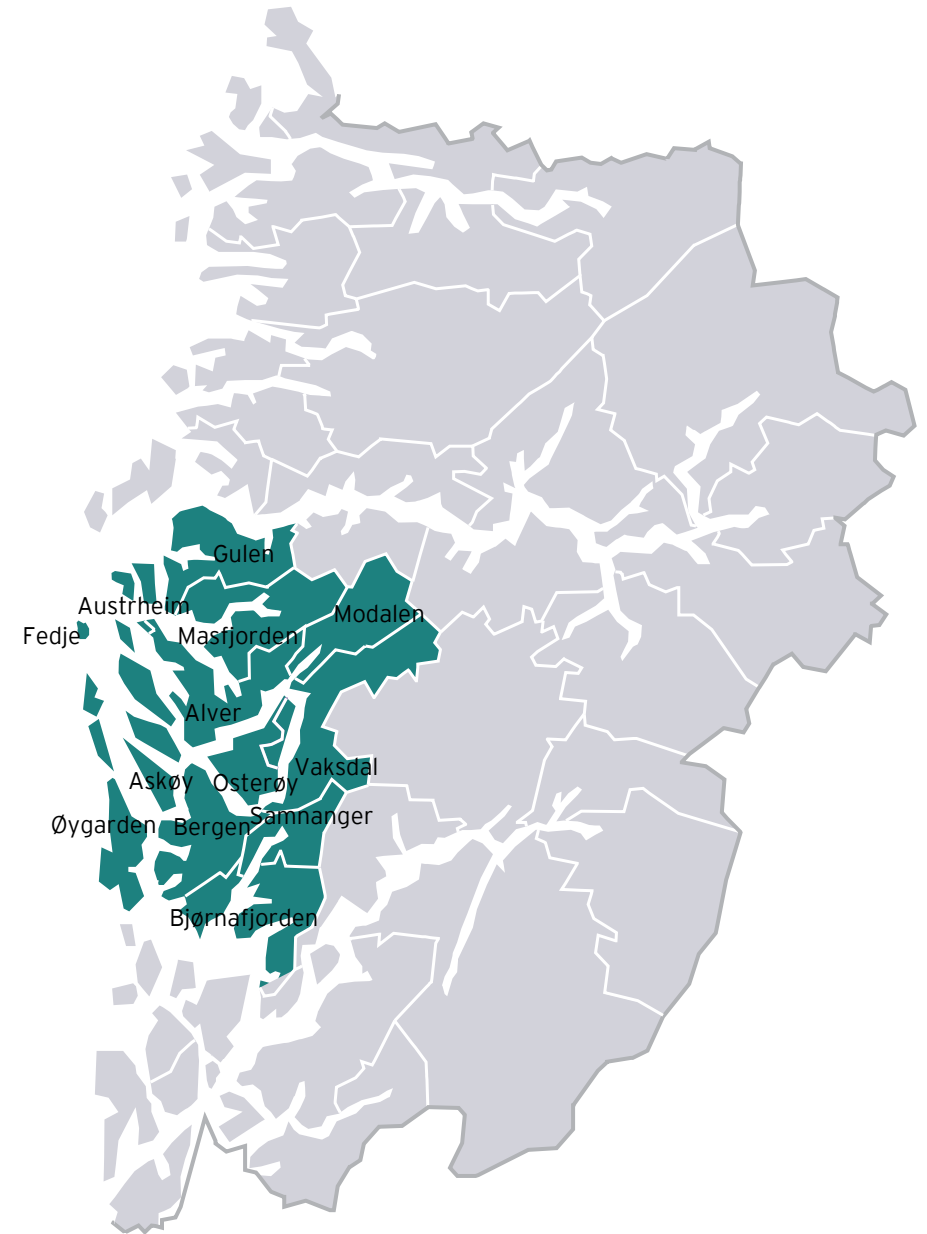
contributing to increased employment and green transformation in the Bergen region

9 regional concepts

that contribute to the achievement of the climate goals and increase value creation by sharing each other's value chains

~ NOK 64 billion in total investments

~ 15,500 total jobs



The pace of green transition in Sunnhordland

The Green Region project has identified

50 projects

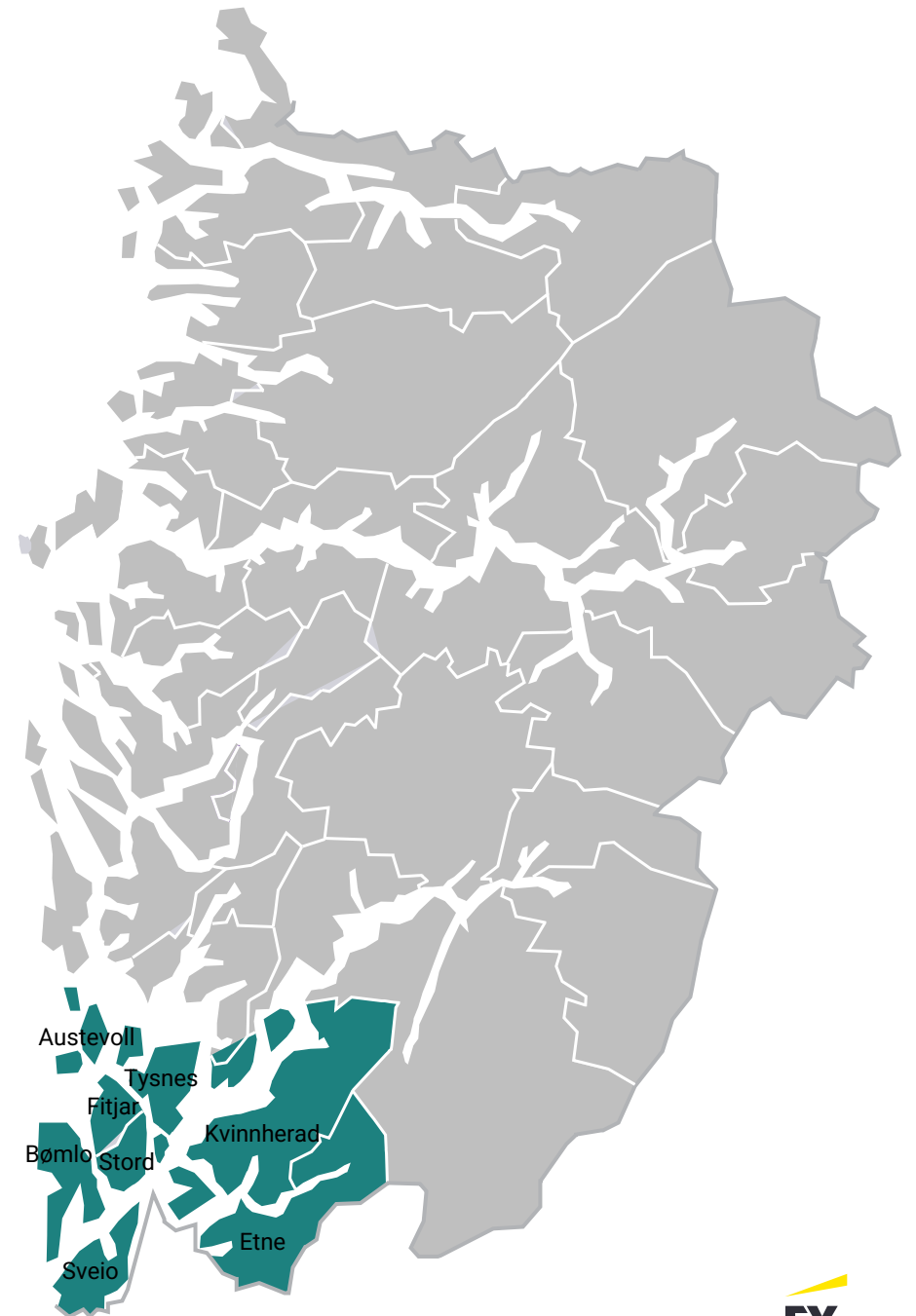
contributing to increased employment and green transition in Sunnhordland

8 regional concepts

that contribute to the achievement of climate goals and increase value creation by sharing each other's value chains







~ NOK 14.3 billion in total investments

~ 3,600 jobs








Regional analyses indicates that strong competence environments acts as starting points for new green business development and smart specialization







Bergensregionen

-  Oil and Gas
-  Industry, including process and textile industries
-  Marine industry
-  Construction and real estate
-  Marine technology
-  Banking and Finance






Sunnhordland

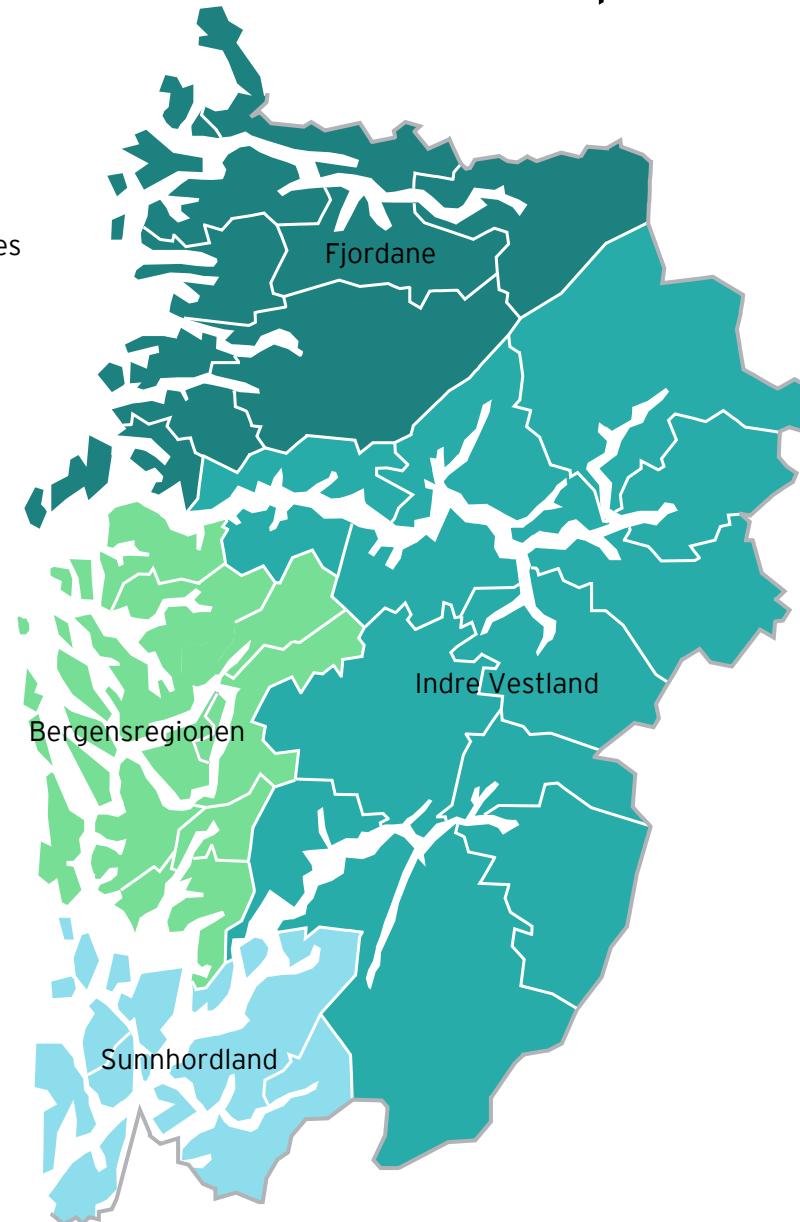
-  Marine industry, including aquaculture, fisheries and processing
-  Oil and Gas (supplier industry)
-  Maritime industry
-  Industrial processes
-  Provision of services

Fjordane

-  Seafood industry, including aquaculture, fishing and catching
-  Maritime industry
-  Food industry
-  Construction and real estate
-  Banking and Finance
-  Provision of services

Indre Vestland

-  Industry, including processing and food
-  Renewable energy
-  Agriculture
-  Construction and real estate
-  Provision of services



To realize Vestland's potential, we must therefore succeed in implementing projects for all four innovation types identified in the Green Region project. Accordingly, significant requirements arise regarding skills, cooperation and the number of parties involved

Product and service innovation

Innovation to reduce the impact of a product or service - for example, by shifting from coal/oil/gas as an input to renewable power.



Complexity related to:

- New market
- New technology
- New processes

Building new, green value chains

Innovation through actors creating new value chains, e.g., for hydrogen driven by new market needs, decarbonization requirements and technology development.

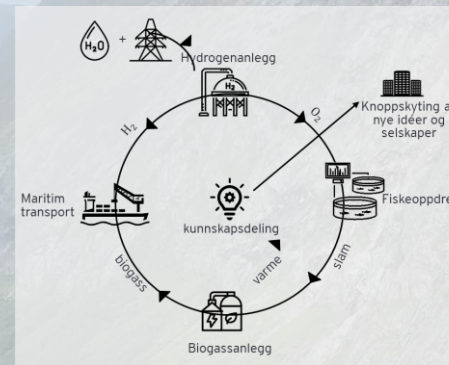


Complexity related to:

- Requirements for collaboration across the value chain
- New commercial models
- Unknown markets

Industrial symbiosis - ecosystem Innovation

Industrial symbiosis can be created by actors working together and exchanging energy and material flows to increase financial gain and reduce their environmental footprint.

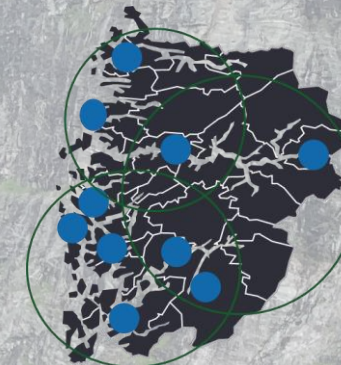


Complexity related to:

- Innovation and collaboration across value chains in green hubs
- Win-win models
- Multi-disciplinary skills

Infrastructure innovation

Building infrastructure between sea and land - New energy system and technologies in and around green hubs



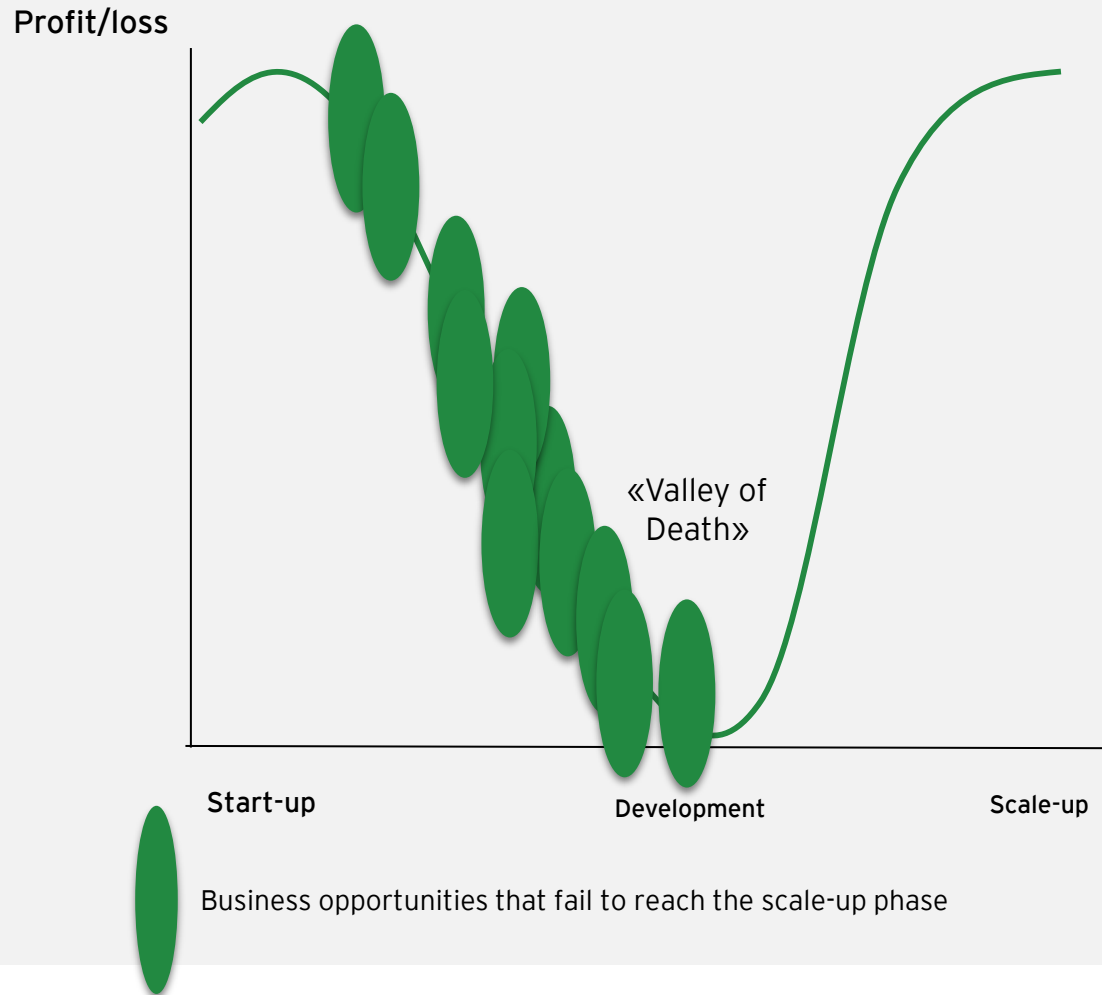
Complexity related to:

- National and regional policy decisions
- Large-scale financing
- Holistic mindset and plans

Low complexity, fewer parties

High complexity and many parties

Most of the mapped projects are in either the idea or pilot phase. Without the right strategy, few projects will be able to scale



Most of the new green business opportunities and value chains are in the R&D and piloting phase, and do not reach the scale-up phase due to lack of capital/resources. This prevents them from getting past the so-called Valley of Death.

The following criteria were established to assess key innovation projects in the four Vestland regions



Highest value-added potential and international competitiveness



Highest multiplier effect through-industrial symbiosis or infrastructure



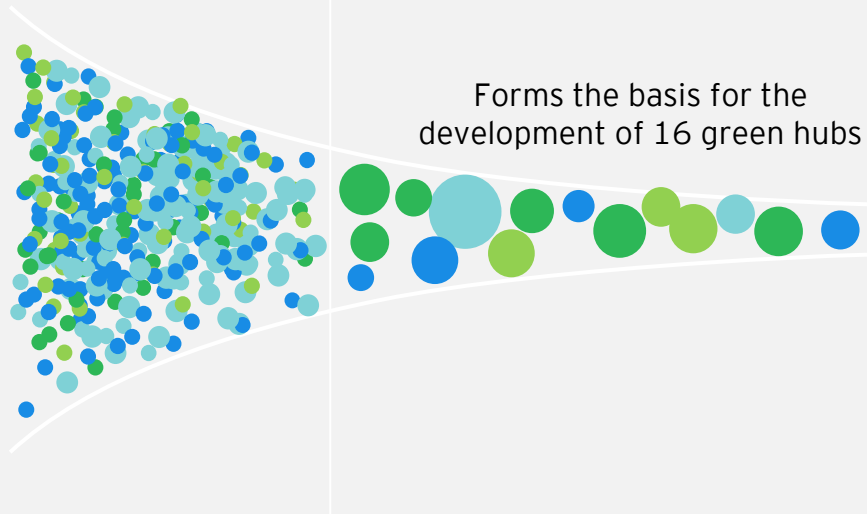
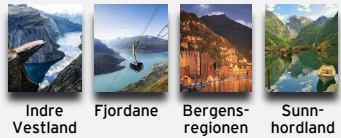
Helps to realize new, green value chains



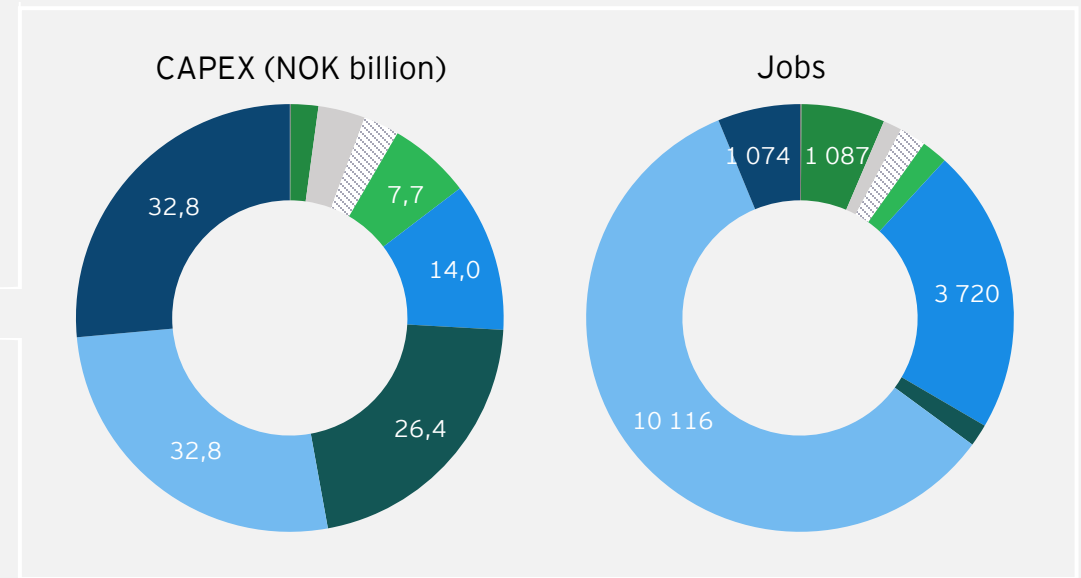
Engages the entire county

250+ individual green innovation projects have been identified, qualified and prioritized into 16 green hubs with great potential. These constitute The Vestland Portfolio

> 250 individual innovation projects



Investment requirements and potential jobs in the 16 green hubs



~ NOK 124.2 billion

~ 17 200

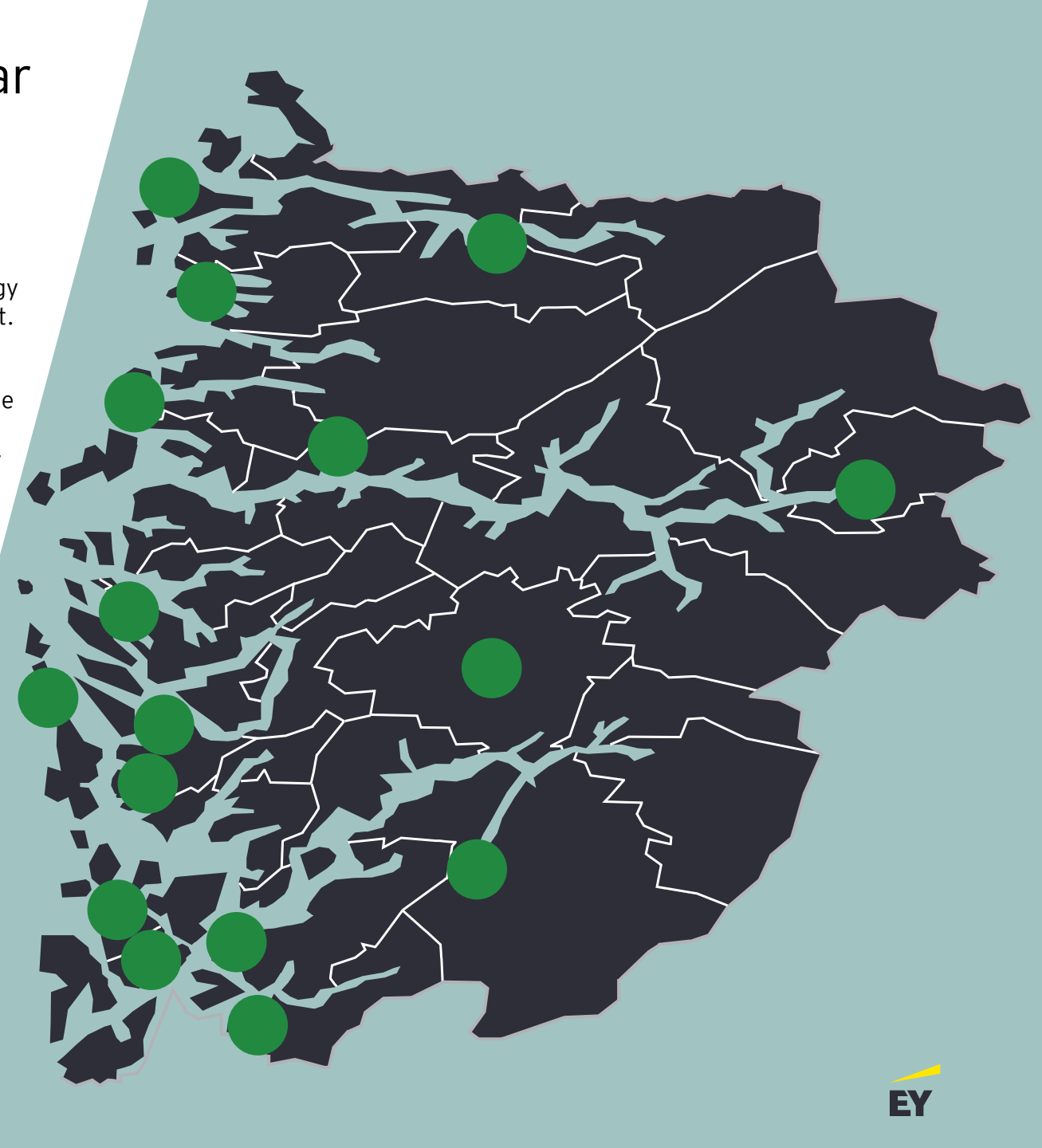
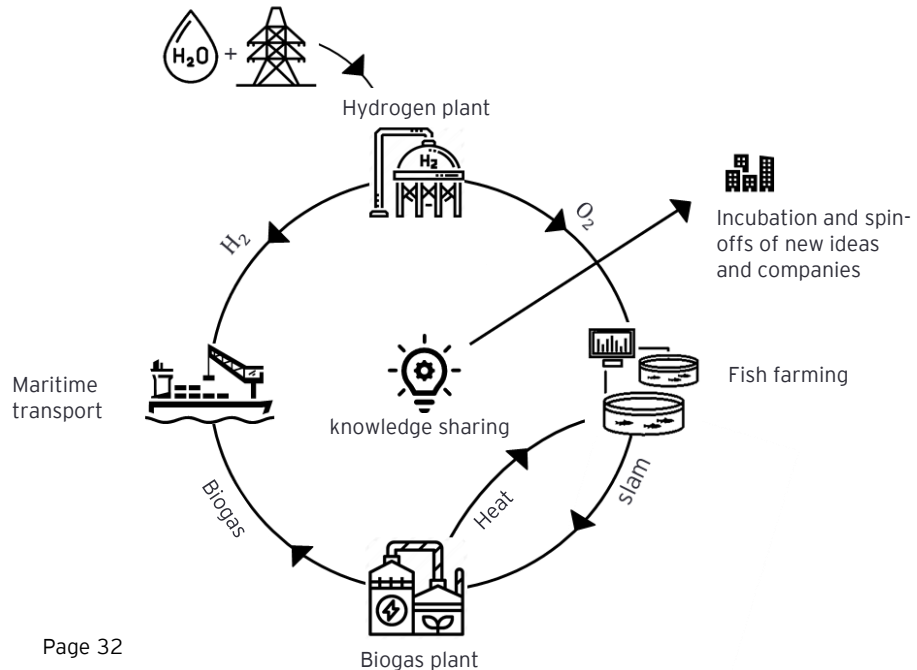
- Batteries
- Bioeconomy
- Offshore wind farms
- Other
- Green metallurgy
- Green shipping
- CCU and CCS
- Seafood/Aquaculture
- Hydrogen

The green hubs must be realized to gear up new value chains

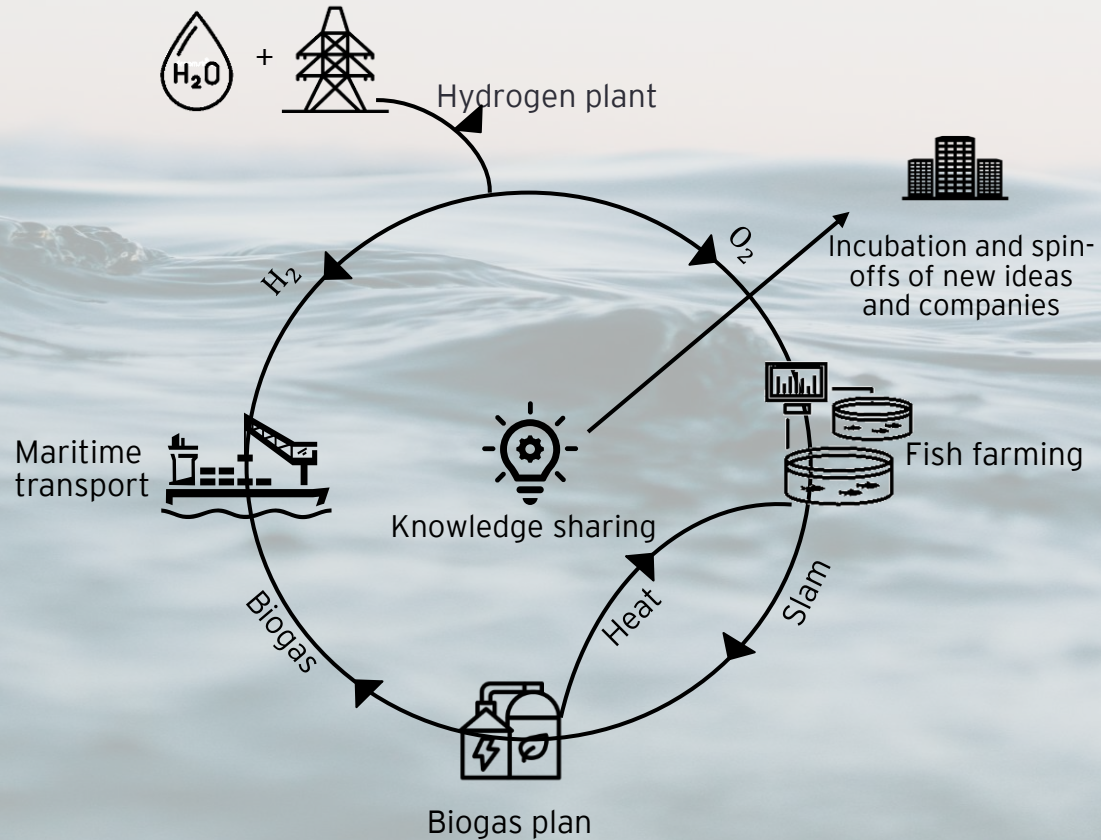
In the strategic green hubs we find the greatest potential for industrial symbiosis across value chains.

Industrial symbiosis can be created by actors working together and exchanging energy and material flows to increase financial gain and reduce their environmental footprint. This also involves industrial densification.

By-products from a value chain are used by several actors and recycled in a new value chain. This contributes to reduced total resource consumption, reduced input factor costs, energy recovery, reduced CO2 emissions (reduced CO2 tax), and recycling by-products to generate value. Industrial symbiosis at a location also provides competitive advantages for actors who establish themselves through reduced transport costs and power losses.



Vestland will ensure the industrialization of new value chains by building world-class green hubs



Building world-leading green hubs through industrial symbiosis




What is it and why is it important?

The green hubs are paramount for the transition from fossil to renewable energy, and they will draw major investments. Ports play a central role in the green shift, both by facilitating new green industries and by ensuring that a larger share of maritime transport helps reduce climate emissions. There will be a transition where supply bases will become diversified industrial parks, and a trend where new industrial developments are budding in connection with the county's process industry. Industrial biotechnology will ensure the upscaling of by-products from industries. Bio-economic projects will provide great opportunities for industrial circular economy and reduced emissions.

The Green Region project has identified the most important hubs for green business development in the county. Realization of their potential is critical to accelerate the new green value chains, ensure regional competitiveness, and contribute significantly to necessary emission reductions. The key success factor is structured work on industrial symbiosis at the commercial, technical and operational levels. If we succeed with industrial symbiosis in the hubs, we will reduce cost barriers in new value chains and reduce emissions while increasing attractiveness and potentially strengthening green exports.

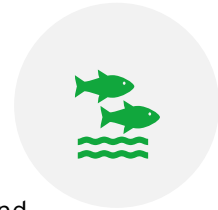
Recommended actions that must be incorporated into a common plan:

- ❑ Prioritize the necessary infrastructure for the selected projects in The Vestland Portfolio
- ❑ Align competence models within vocational schools and trainee schemes towards the hubs' potential
- ❑ Skills boost in industrial symbiosis and industry 4.0 (AI, automation). Both elements are needed to transform harbors and industrial parks
- ❑ Establish action platform/training program related to the green hubs
- ❑ The hubs' management model should be reviewed to ensure optimal anchoring at each level and facilitate good portfolio management across hubs. Public-private cooperation models with common goals must be established
- ❑ Industrial densification to favor material and energy recovery should be included in spatial plans and regional business strategies
- ❑ Align policy instruments, public funding agencies and support structures so that funding is ensured for the business development, piloting and scaling up of priority projects in The Vestland Portfolio
- ❑ Ensuring coordinated policy instruments, public funding agencies and support structures, making Vestland the first county with a "pilot S" scheme, especially for maritime and industrial hubs
- ❑ Develop and leverage at least three major collaborative projects with regional and international actors during the first quarter of 2022 to secure EU innovation financing



Vestland will take a position as the world's leading marine region, and increase its attractiveness to attract partners, capital, talent, researchers, new establishments and headquarters

Take the position as the leading marine region worldwide



What is it and why is it important?

New green value chains are largely sea-based, and Vestland is to become the leading marine region, both nationally and internationally. Marine industries are export-oriented, and we are now an exporting county in transition. Vestland must take a clear position internationally to communicate our competitive advantages and attract drivers, expertise, and capital. To gain visibility within the new green marine industries, we need to build upon existing expertise.

As a globally leading marine region, we must be forward leaning and set clear goals for what we would like to become, and what position we must take. Through our leading business sector on marine industries, we have every opportunity to become the number one marine region. This is a position we must take. This means that we need to develop a complete interconnected ecosystem - ensuring that national initiatives are located in Vestland - and we must build partnerships.

Recommended actions

- ❑ Increase the investment in "Invest in hele Vestland" by ten times
- ❑ Establish and further develop existing national marine and maritime clusters, and build Centers of Excellence in CCUS, hydrogen and seabed minerals
- ❑ Ensure that government initiatives within e.g., hydrogen are established in the county
- ❑ Develop a communication platform to share the results of The Vestland Portfolio, including local competitive advantages, infrastructure, and regional project portfolios
- ❑ Engaging the project partners, develop a regional strategy for talent recruitment and link students to marine industries early on
- ❑ Develop test center for industrial software and technological solutions for the marine industries, affiliated with Ocean Centre.

Vestland must become a world leader in green infrastructure to realize the green value chains

World-leading innovation on green infrastructure

Innovation in the energy system

We must increase the production of renewable energy and strengthen grid capacity to conduct major transformation projects. Accordingly, the pressure on the grid will grow exponentially in the green areas. Over the past two years, the list of projects and value creation on hold in the hubs has dramatically increased. Without binding commitments these undertakings are at risk of disappearing from the county and the country.

The Green Region project has assessed that approx. 70% of the portfolio will gain competitive advantages through industrial symbiosis and densification in the green hubs. This requires good solutions for establishment infrastructure, such as water and land.

Recommended actions*

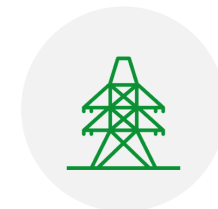
- ❑ Establish a joint agreement with Statnett and grid operators so that we have a binding plan to strengthen grid capacity to the required level for the priority green hubs in The Vestland Portfolio during 2022
- ❑ Define a priority plan for infrastructure based on value creation potential in The Vestland Portfolio to ensure the necessary pace
- ❑ The State takes the initial customer responsibility for infrastructure in critical hubs to ensure rapid value creation
- ❑ Investigate potential for increased energy production as well as energy and material recovery potential in the green hubs
- ❑ Facilitate distributed energy production and smart energy systems in and between the green hubs
- ❑ Prioritize the green marine transport nodes to ensure that no green shipping project loses momentum.

Innovation in large infrastructure projects

Several major infrastructure projects are planned in Vestland including Sotra-sambandet, Stad Skipstunnel, K5, Hordfast, etc. Vestland can use public procurement to ensure innovation and regional delivery models in these projects through a green vendor development program. Vestland has strong clusters and professional communities in all disciplines within building and construction that need large projects over time to implement major green innovations. For example: development of green concrete and green asphalt will equip the industry for the future and increase the likelihood of regional value creation in these projects.

Recommended actions*

- ❑ Establish a green vendor development program with a focus on green innovation in large infrastructure projects
- ❑ Ensure that public procurement develops mandates for infrastructure projects, including green regional business development goals.



* A separate report, commissioned by Vestland County Municipality and Innovation Norway, will discuss challenges, causes and recommended solutions in connection with the power situation in greater depth than in this report. The Power Report is handed over to the contracting authorities at the end of October/November 2021.

Ensure common priorities and rapid implementation through a joint master plan for Western Norway



Increase pace through prioritization and the best cooperation infrastructure



What is it and why is it important?

In the current situation, our competitors are scaling up while we are largely piloting. The Green Region survey indicates that we fail to support regional projects holistically - as much as we should, for example, with an overall hydrogen plan or an overall bio-plan. Over half of the surveyed effects arise through industrial symbiosis and infrastructure innovation, where multiple actors are achieving circular synergies across sectors.

Shifting the focus from piloting to scaling towards 2030 requires prioritizing new infrastructure, concession treatments, regulations, local processes across locations and industries, as well as extensive collaboration and citizen involvement. A holistic approach to projects developed within green value chains must be ensured to match supply and demand and realize value chains. This means, among other things, connecting what happens at a given location regarding transportation to and from other locations. To succeed in initiating and realizing prioritized projects and the infrastructure that binds projects together, the partnership must develop and agree on a common master plan. Likewise, a common implementation organization should be established.

Recommended actions

- ❑ Develop a master plan for the county that considers various hubs, business opportunities and value chains in connection to each other, including the project start and implementation schedule, by the second quarter of 2022
- ❑ Set clear goals and ambitions for the plan
- ❑ Prioritize the holistic innovation projects that must succeed
- ❑ Define a clear ownership for the plan
- ❑ Facilitate clear portfolio management from the partnership
- ❑ Ensure the organizational rig has a well-defined framework and responsibilities
- ❑ Establish a "Horizon Vestland" program that aligns EU's road map with Vestland's potential to:
 - ❑ increase the share of innovation funding granted to regional business in collaborative projects
 - ❑ put our business sector in contact with international partners
 - ❑ ensure closer cooperation between R&D, academia, clusters and the business sector

For any questions about 'Vestlandsporteføljen', please contact



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The report has been constructed based on information current, as of 29th October 2021. Since this date, material events may have occurred since completion which are not reflected in the report. It must also be considered that within the project scope it is not possible to include all relevant measures or details in the study. We have taken reasonable care to verify the information. The report is only for general guidance and information purposes. It should under no circumstances be used for financial and investments decisions. We disclaim all responsibility to any other party for any loss or liability that the other party may suffer or incur arising from or relating to or in any way connected with the contents of our report, the provision of our report to the other party or the reliance upon our report by the other party. This report (or any part of it) may not be copied or otherwise reproduced except with the written consent of EY.

