



2024 BC Blue Economy Landscape

Ecosystem Survey Results

November 15, 2024

Pacific Canada's hub for the sustainable blue economy

 A South Island Prosperity Partnership Initiative



COAST

Introduction and Acknowledgements

From January-June 2024, COAST and the University of Victoria's Impact Investing Hub developed and launched a 2024 BC Blue Economy Ecosystem Survey. The survey objective was to serve as the basis for a landscape assessment of British Columbia's blue economy. COAST will activate these results through tailored offerings to support companies in overcoming key barriers to success, and through focused efforts to position BC as a blue economy hub.

63 respondents provided information, which represents an estimated 7.5% of the BC ecosystem (based on estimates of the total number of entities involved in the blue economy in BC). COAST wishes to thank all the survey participants for responding to the call and helping to establish these important results.

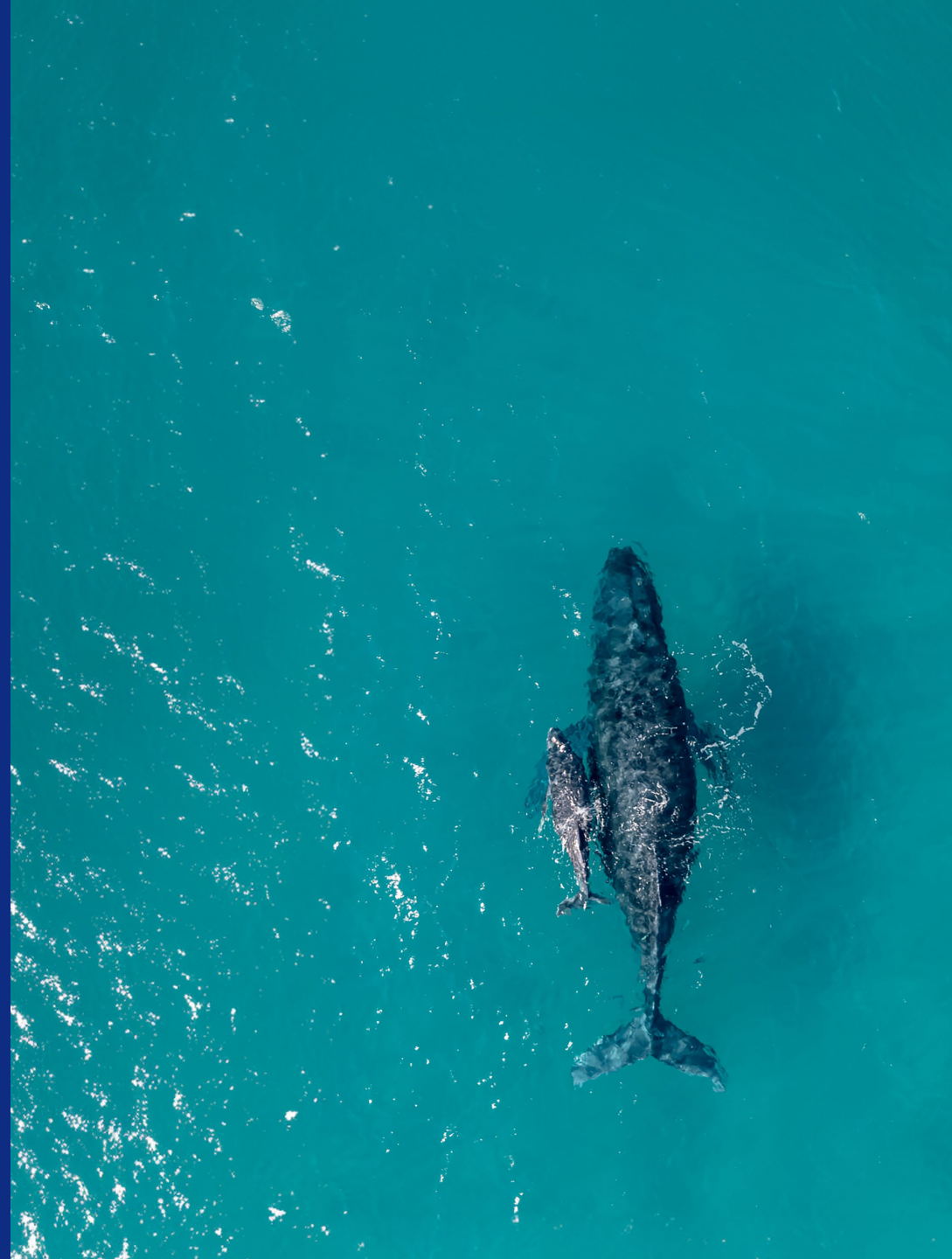


**University
of Victoria**

| Impact Investing Hub

Blue Economy Landscape and ESG Understanding

The 2024 Blue Economy Ecosystem Survey included a section on Environmental, Social Governance (ESG) understanding to assess the respondents' sophistication and implementation of ESG principles in their strategy and operations. This information has been compiled by University of Victoria's Impact Investing Hub and results specific to the ESG understanding of the blue economy ecosystem are found [here at this link](#).





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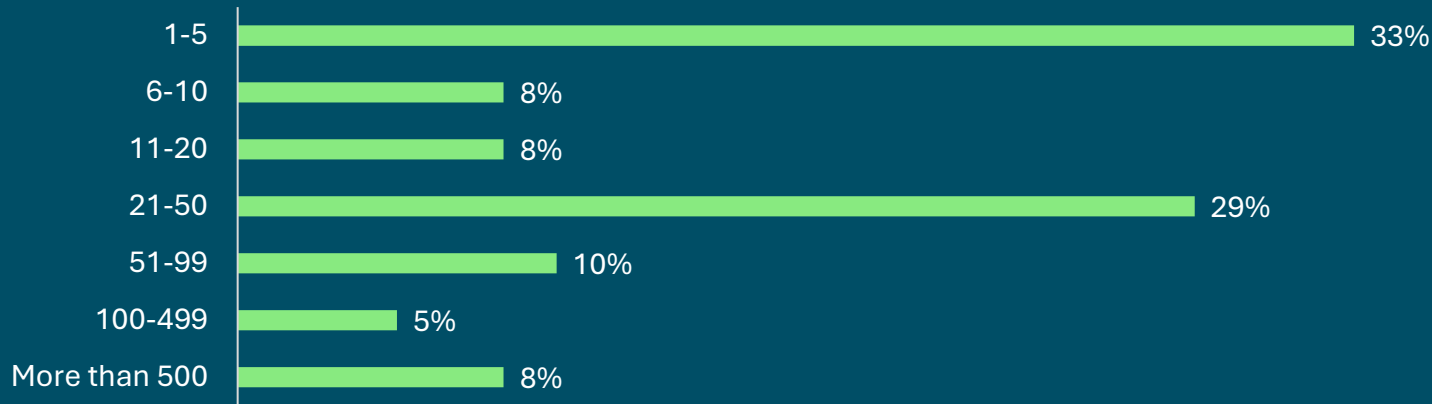


Organizational Profiles

2024 BC Blue Economy Landscape

Team Size

Team Size

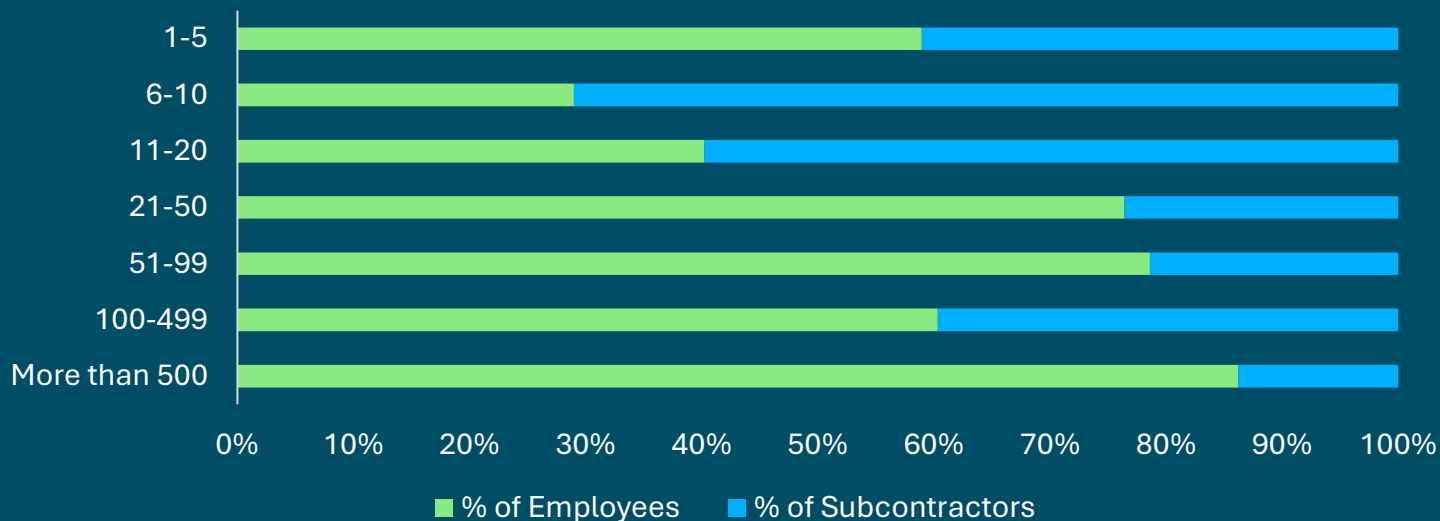


The vast majority (78%) of respondents had teams with **1-50** people. Within this group, the largest segment of respondents was among teams of **1-5** people (33%), followed by teams of **21-50** (29%).

Other key findings:

- The average ratio of employees to contractors across all company size segments was 64% employees.
- Smaller companies (team sizes ranging from approximately **1-20**) tend to have a higher portion of contractors

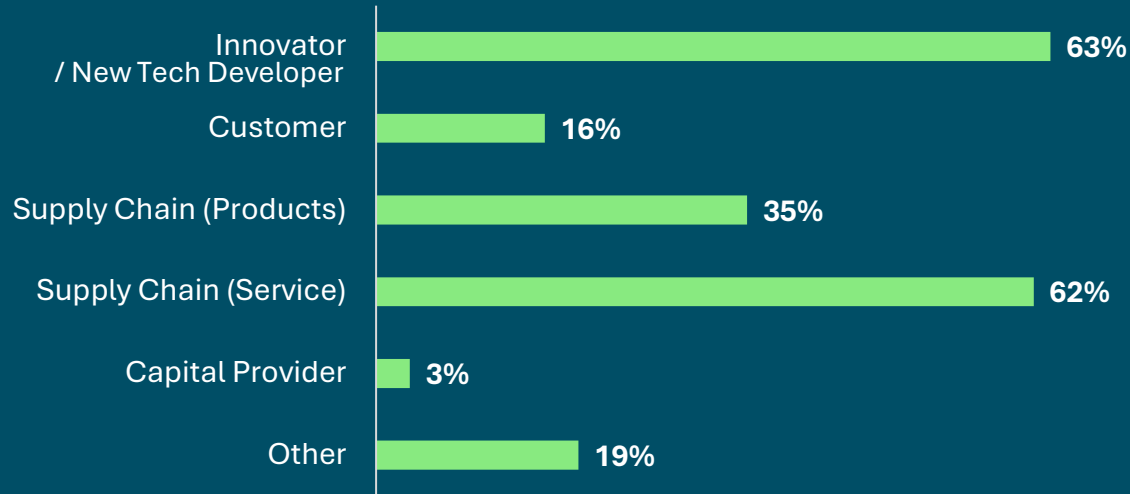
Employee vs. Subcontractor Breakdown



Note: Responses regarding organizational size were restricted to categories, so precise average team size is not available.

Ecosystem Roles & Contributions

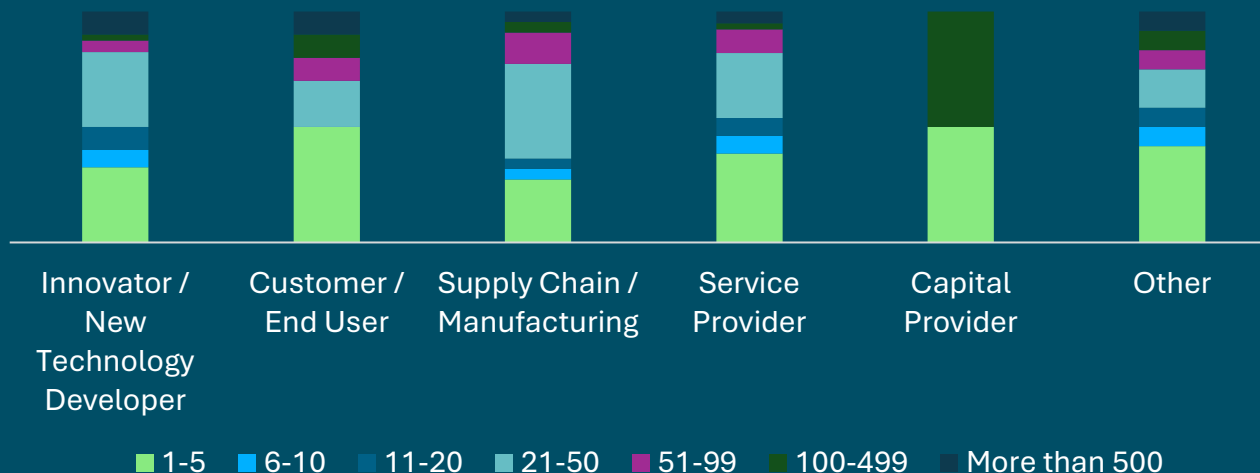
Company Role in Ecosystem



Respondents categorized themselves as **Innovators / New Tech Developer** and **Supply Chain (Service)** providers more than any other role. This indicates the presence of many respondents that provide dual services (i.e. a service company which also develops new technologies).

A notable proportion of respondents identify as manufacturers (**Supply Chain – Products**); fewer as **Customers** and **Capital Providers**.

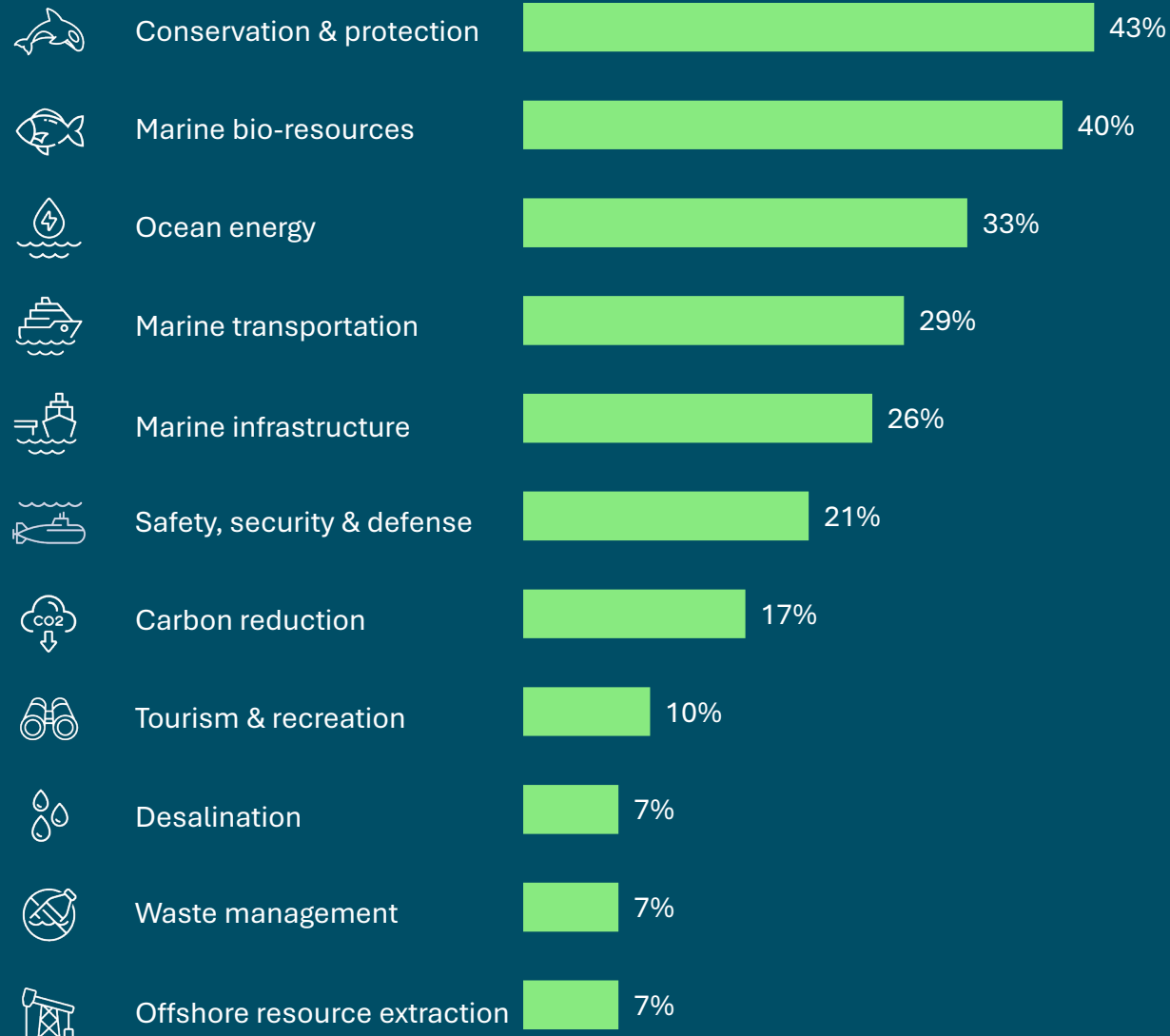
Role by company size



There was a diverse distribution of company size in the **Innovator / New Technology Developer** role, whereas **Customer / End User** organizations had a higher percentage of smaller companies (i.e. **1-5**) than other roles.

Note: This could be more associated with the lower response rate for **Customer / End Users** than an actual ecosystem trend.

BC Blue Economy Sector Profile



Companies were asked to identify their primary sector focus areas. The most notable trend among respondents is their focus on climate and conservation-related sectors, such as:

- **Conservation & protection** (43%)
- **Marine bio-resources** (40%)
- **Ocean energy** (33%)

In other parts of Canada and globally, the sector breakdown of the blue economy would look quite different. Factors such as BC's natural resource availability, abundant marine biodiversity, and growing clean technology industries may contribute to this unique blue economy sector breakdown in BC.

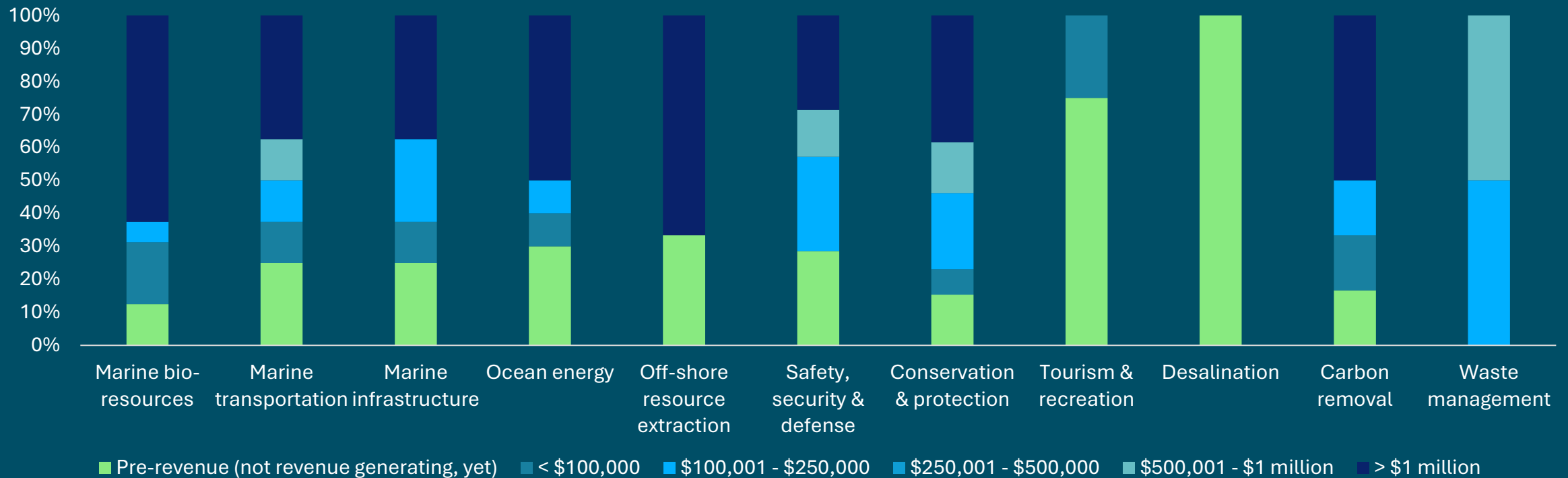
Broadly, 60% of respondents indicated they are multi-sectorial within the blue economy with the most common multi-sectors being:

- **Conservation & protection** (56%)
- **Ocean energy** (52%)
- **Marine infrastructure** (44%)

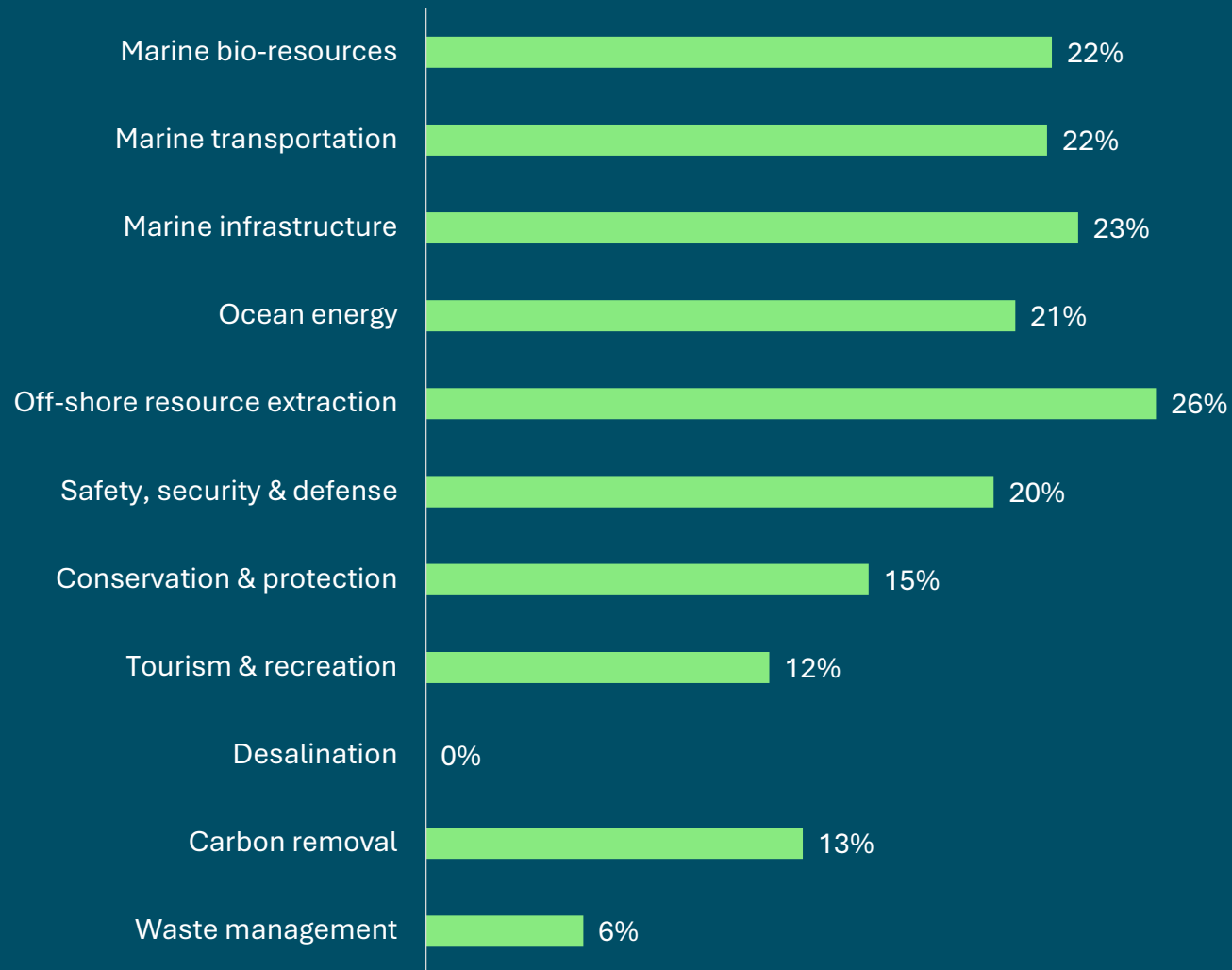
Current Revenue

Overall, 25% of respondents are **pre-revenue**, and 48% of respondents have an annual revenue of **less than \$250,000**. Pre-revenue companies were present in almost every category, indicating the ongoing need for innovation support in all sectors.

The sector distribution shows higher revenues in the marine bioresources and off-shore resource extraction sectors, whereas the lower revenues are in marine transportation; safety, security and defense; and conservation and protection. Revenue responses were categorized by range, so precise average revenue numbers are not possible.



Market Penetration

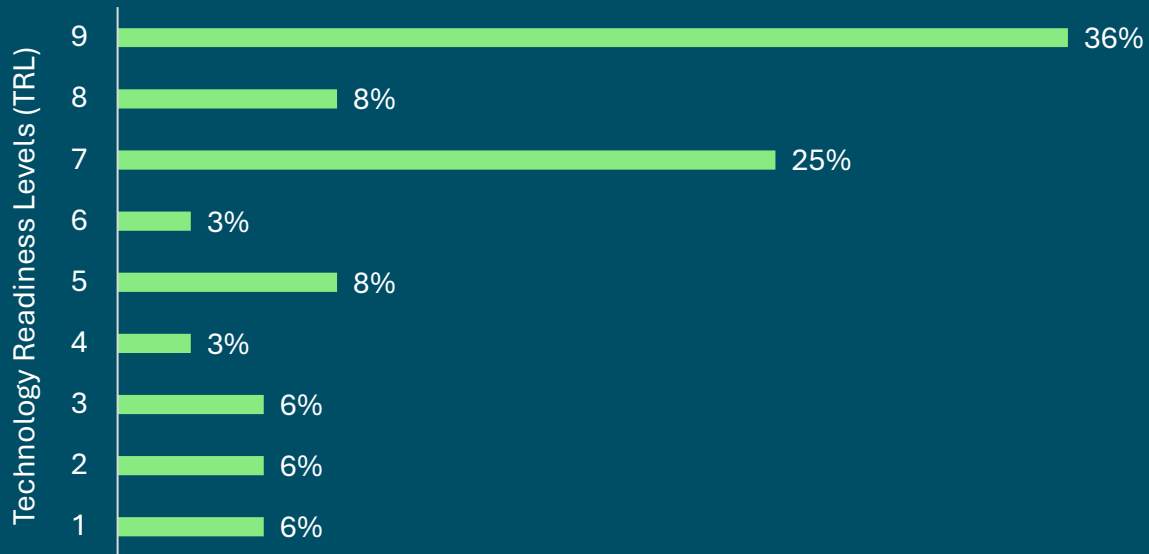


The highest level of market penetration (as a percentage of the total addressable market) was identified for **Off-shore resource extraction** (26%). However, there were fewer respondents in the sector, which indicates this may be a niche market for the region.

The other sectors had similar estimated market penetration of around 20%, except for **Desalination** (0%), **Waste management** (6%), **Tourism & recreation** (12%), and **Carbon removal** (13%). This is primarily due to a larger portion of companies in those sectors being pre-revenue (**Desalination, Tourism & recreation**) or the sheer possible size of the markets (**Waste management** and **Carbon removal**).

The results here demonstrate significant scope across all sectors for growth in existing markets.

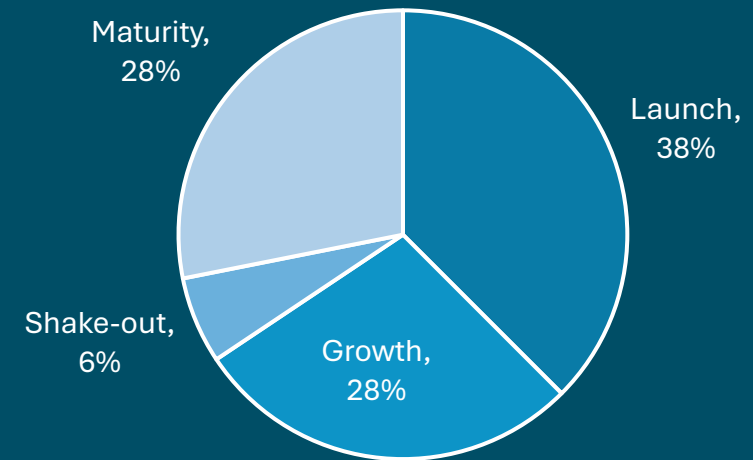
Technology Levels and Company Stage



A majority (61%) of respondents classified their technology as TRL level 7 or 9, while the other levels saw an even distribution.

Overall, the TRL measure does not seem to correlate seamlessly with the reported stage or revenue status of respondents (i.e. companies should start to see revenue at **TRL 7-9**, and earlier assessments indicated more pre-revenue companies). This could be the result of inflated self-reporting of TRL numbers.

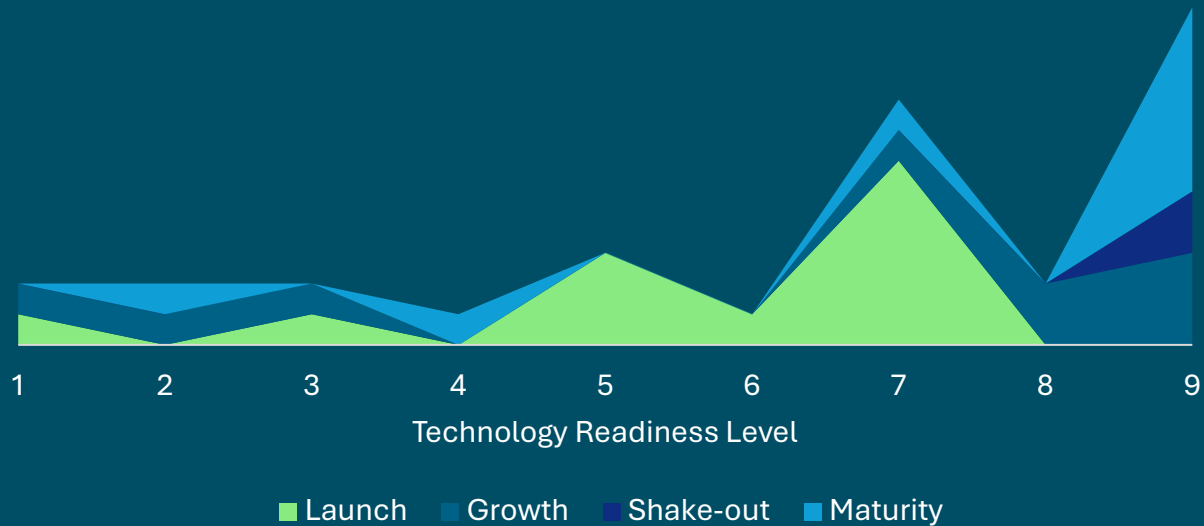
Company Lifecycle Stage



Instead, company stage might prove a more accurate metric for evaluating sector trends. The stage with highest proportion of responses (38%) was **Launch**, with two-thirds of respondents (66%) in either the **Launch** or **Growth** phase.

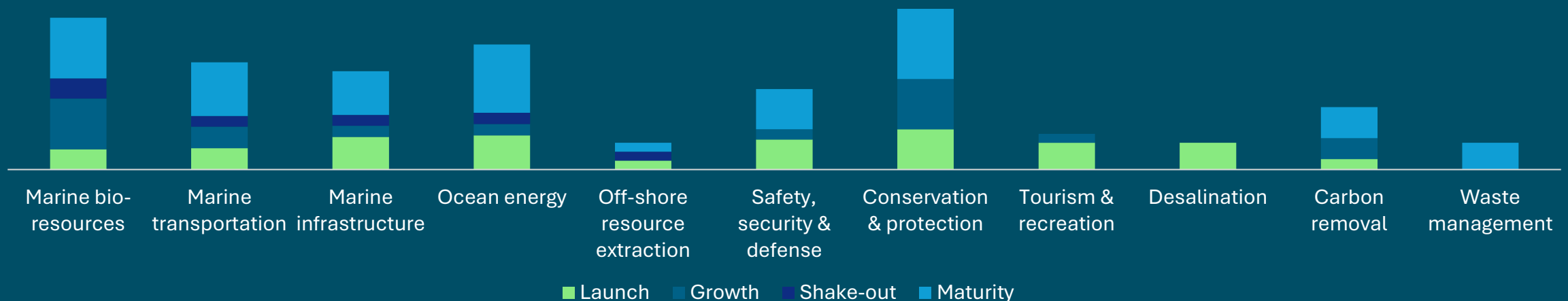
This indicates the presence of a strong pipeline of emerging blue economy companies in BC.

Sector Profile / TRL by Company Stage

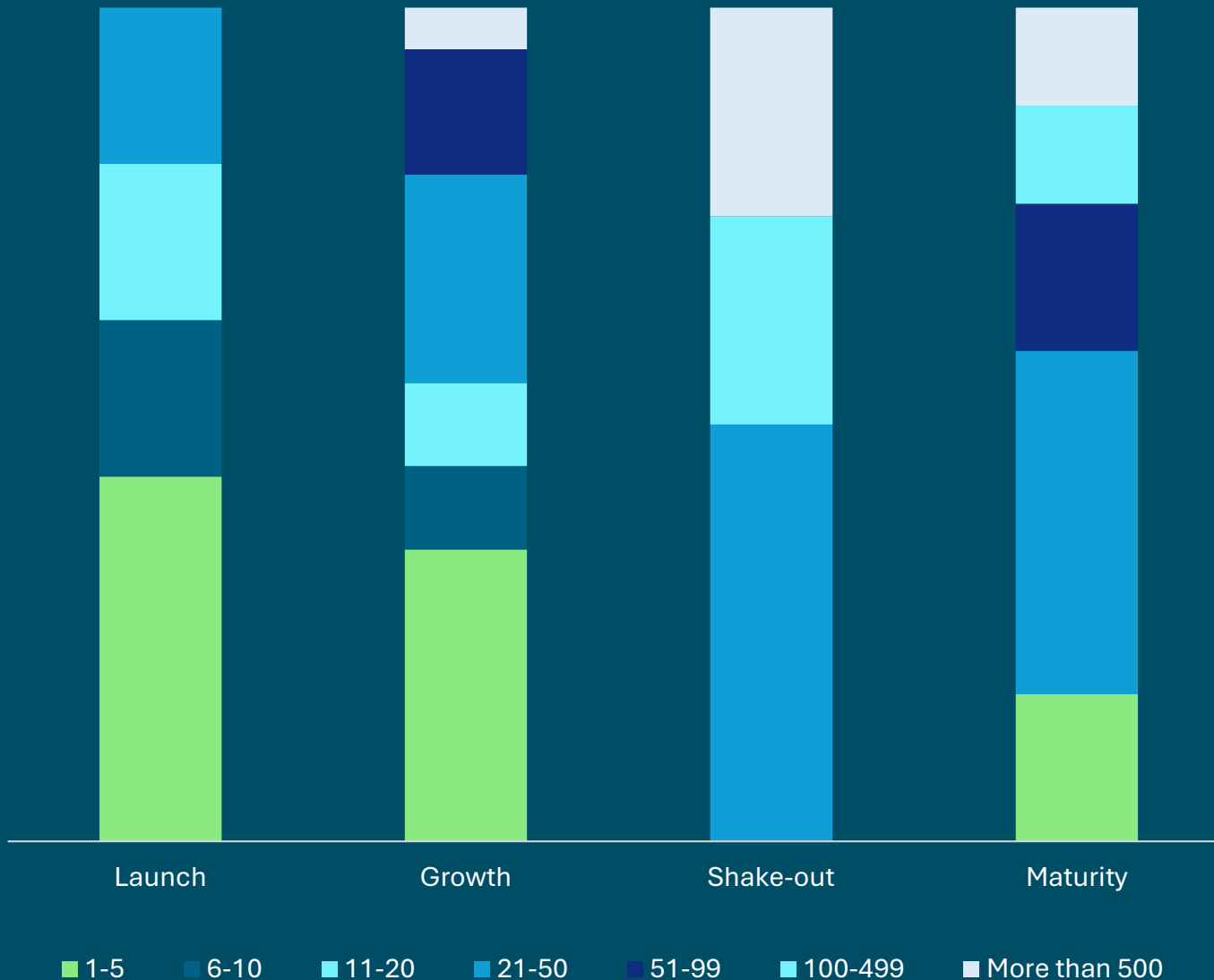


A comparison of the TRL level and company stage indicates that some companies consider themselves at **Maturity** but have a technology at a low TRL.

This is likely due to established companies investing in new technology (and/or perhaps moving into the blue economy market). There also appears to be a large proportion of companies who consider themselves at **Launch**, even though their TRL at 5-7 this indicates market adoption is required.



Company Size (people) by Stage



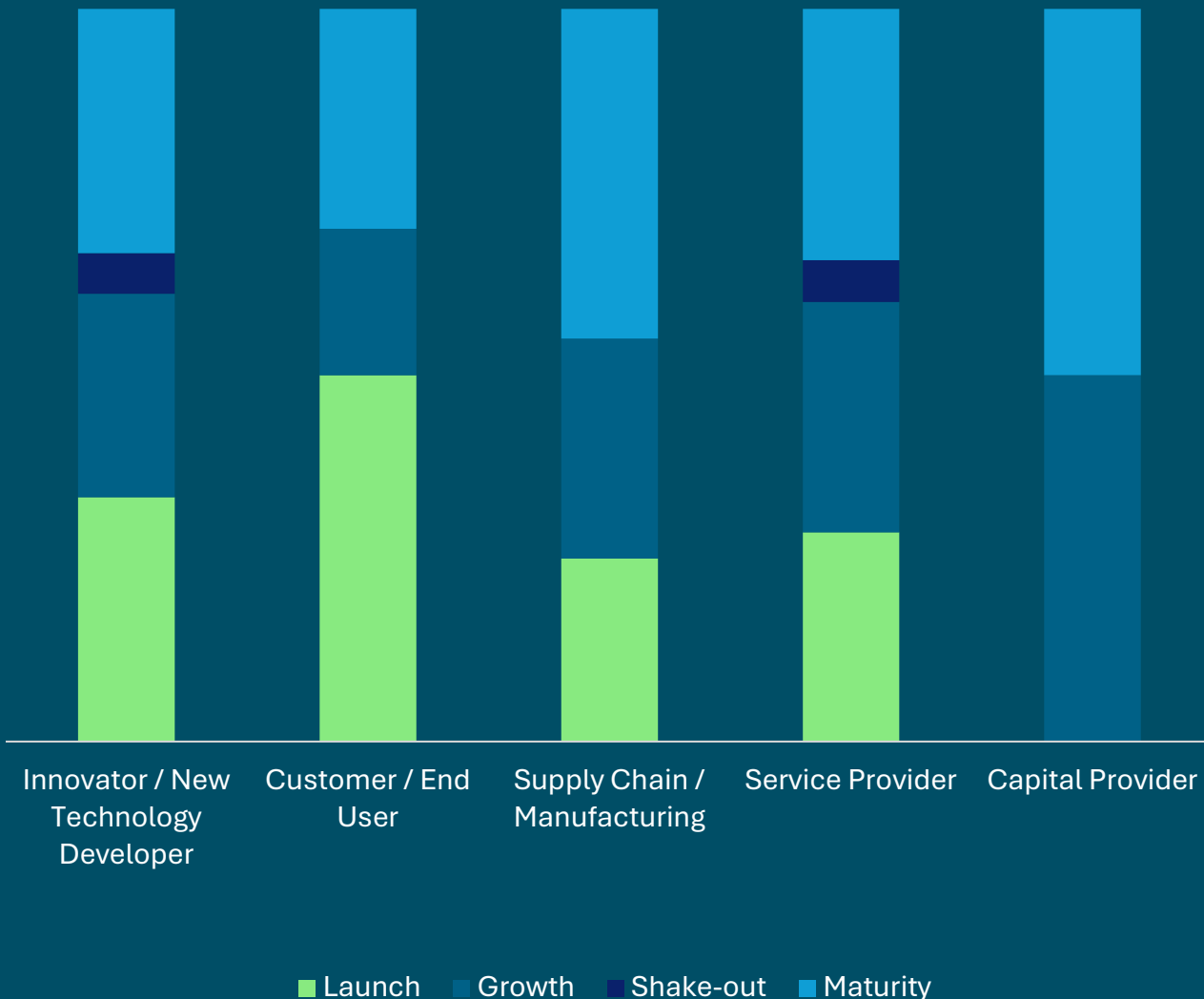
A clear trend is evident where companies at the **Launch** stage are more likely to be smaller than those at later stages of development.

44% of companies at the **Launch** stage are reported to have between **1 and 5** people, while only 18% of those at the **Maturity** stage are of similar size (based on number of people).

There is a good distribution of company size (with respect to number of people) at the **Maturity** stage which indicates that companies of all sizes can form an established businesses and it is not just the larger companies with more people.

It is also important to note that all companies in the **Launch** stage are less than 50 people – making them all SMEs.

Ecosystem Role by Company Stage

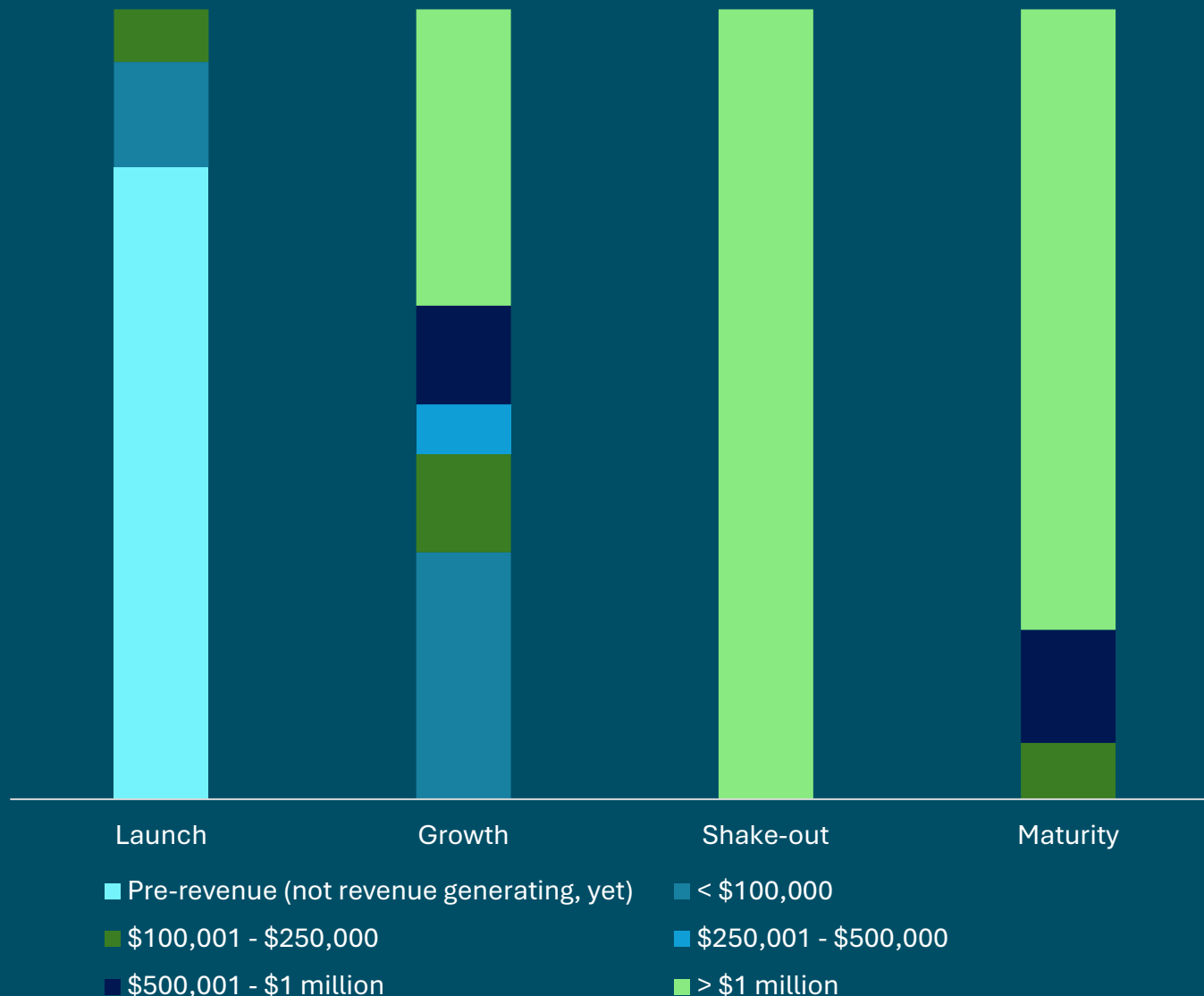


When considering ecosystem role, the **Launch** phase was comprised of more **Customer/end user** organizations than of any other role categories.

As expected, the proportion of company stages was similar for both the **Innovator/technology developer**, and for the **Service provider**. This insight underscores the close link of these two roles.

The connection between organizational role and company stage is similar to that of organization role and company size, which suggests a link between organizational stage and company size.

Company Stage by Revenue Tier



There is a relationship between respondents' reported revenue and their organizational stage. Organizations reported in **Launch** stage are either **Pre-revenue** or have **less than \$250,000** in revenue. Organizations with revenues between **\$100,000 and \$1 million** largely reported themselves in a **Growth** stage.

Interestingly, only companies with revenue **more than \$1 million** reported being in a **Shakeout** stage. This is likely due to existing companies who continue to develop new technologies and roll it out to new markets.

The connection between revenue and organizational stage suggests that organizational stage is a better characterization of a company's evolution than TRL assessments. This may be because TRL assessments can be subjective, and don't appear to be the best indicators of companies' requirements for success.



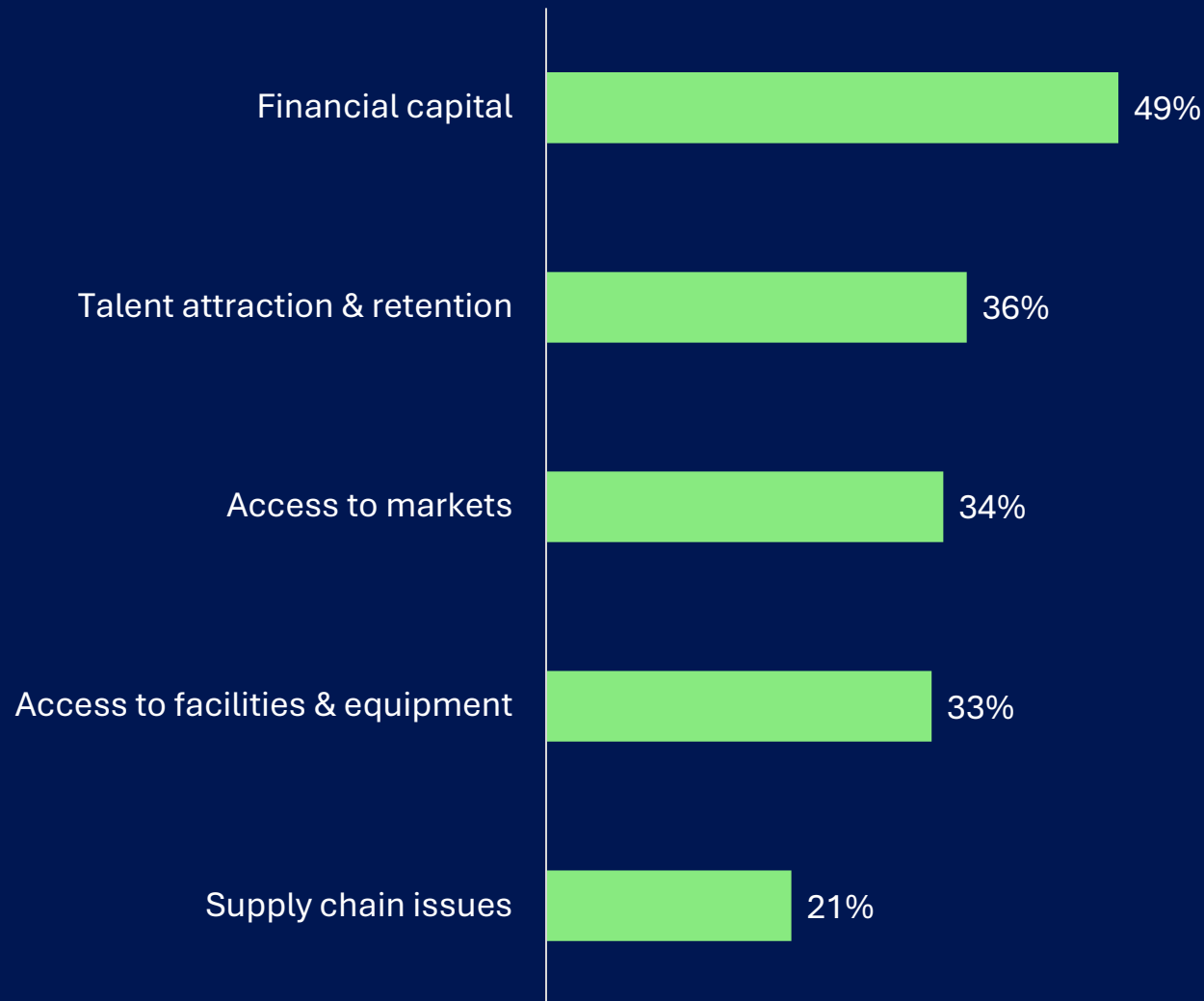
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Barriers To Growth

2024 BC Blue Economy Landscape



Overall Barriers to Growth

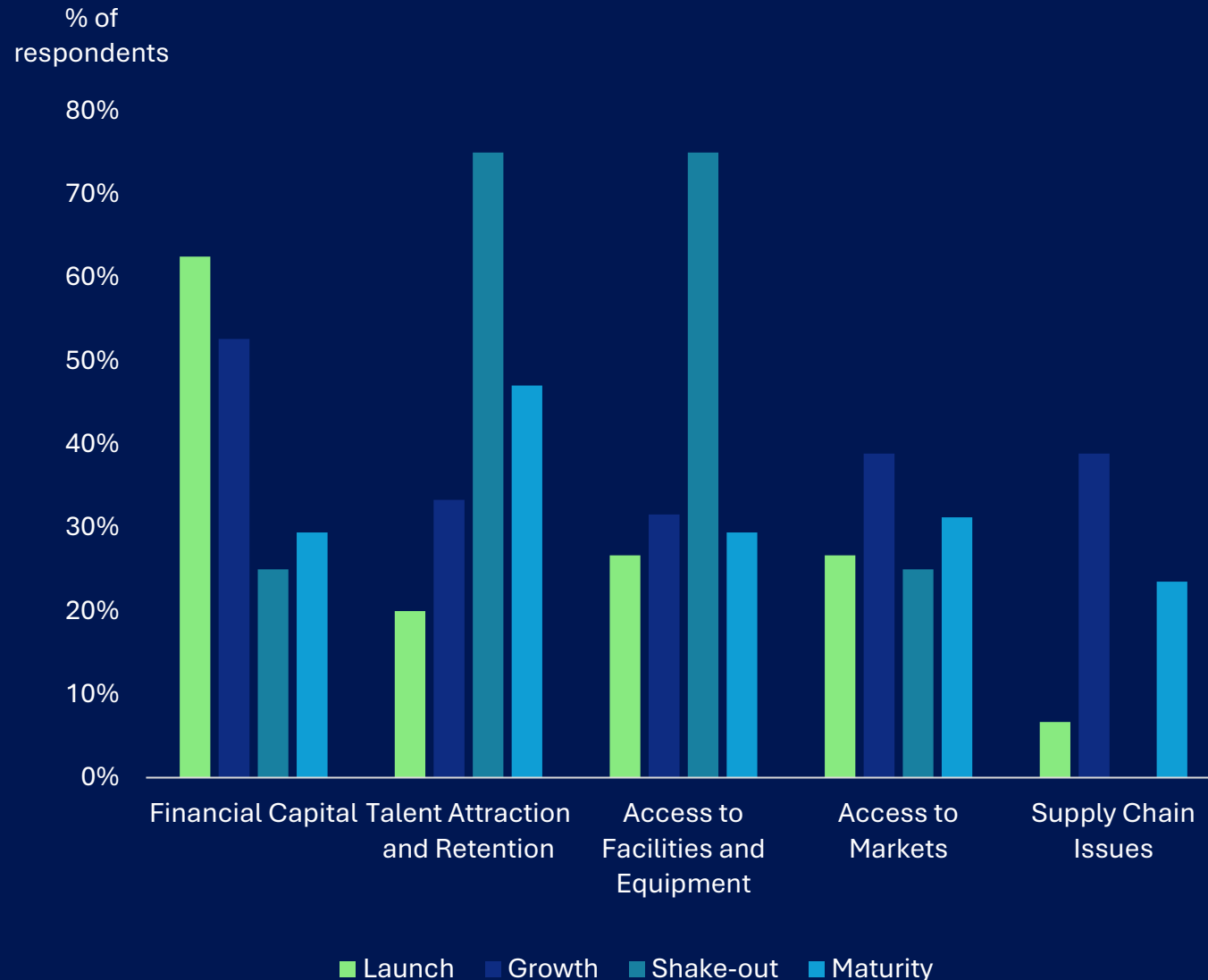


Access to **Financial capital** was the most commonly identified barrier to growth (49%).

One in three companies identified **Talent attraction and retention, Access to markets, and Access to facilities and equipment** as key barriers to growth.

Overall, each of the listed barriers proved to be obstacles for at least 20% of respondents. This consistency and significance in response demonstrates clear gaps in the current ecosystem; addressing these challenges will unlock additional growth for the blue economy in British Columbia.

Barriers to Growth by Company Stage



The barriers to growth vary with company stage, where access to financial capital is seen as a barrier for more companies in the **Launch** and **Growth** stages.

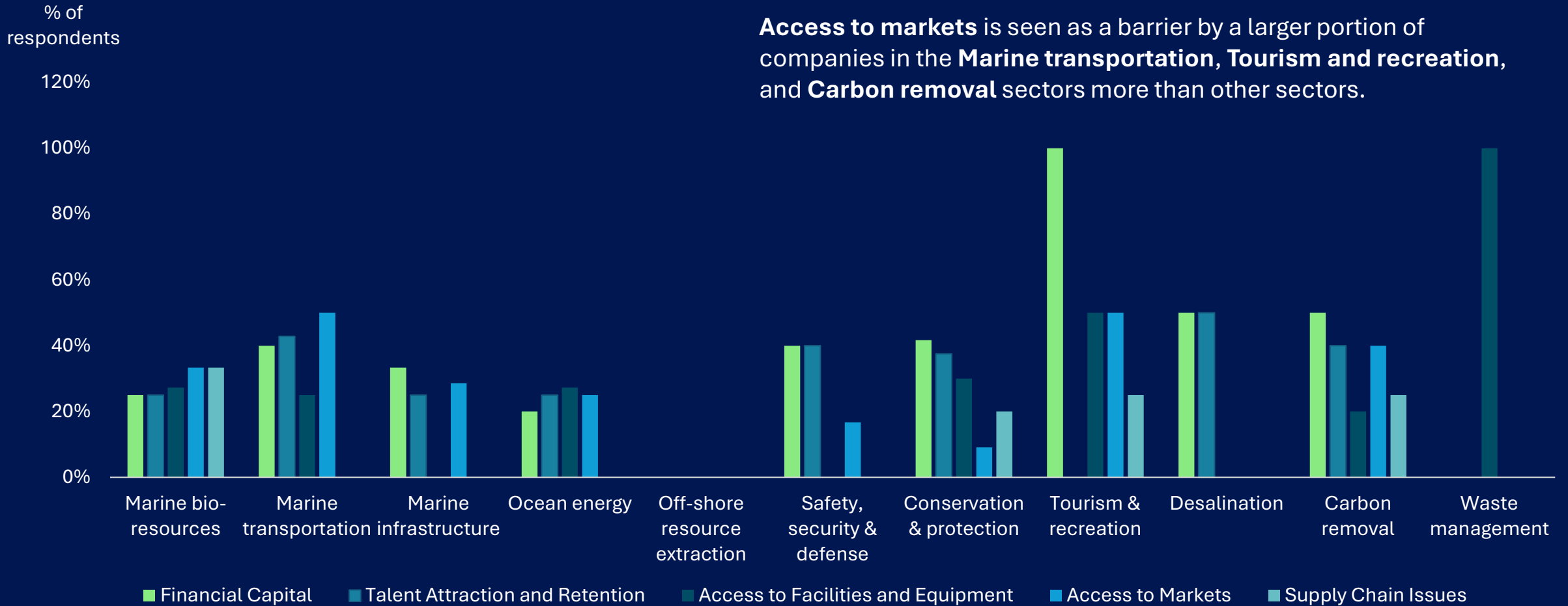
Talent attraction and retention, and **Access to facilities and equipment** appear to be barriers to growth for companies in the **Shakeout** and **Maturity** stages. Although this trend seems logical, it is worth noting that it could also be due to the lower response rate of companies in the **Shakeout** stage than a clear trend.

Interestingly, less than 20% of organizations in the **Launch** stage identified **Talent attraction and retention** as a barrier. This is most likely due to the companies in the **Launch** stage being relatively small and not in the recruiting phase ... yet.

Barriers to Growth by Sector

When exploring barriers by sectors, trends emerge. Notably, organizations in the **Marine transportation; Safety, security and defense; Conservation and protection; Desalination; and Carbon removal** sectors see **Financial capital** and **Talent attraction and retention** as the key barriers.

Access to markets is seen as a barrier by a larger portion of companies in the **Marine transportation, Tourism and recreation, and Carbon removal** sectors more than other sectors.





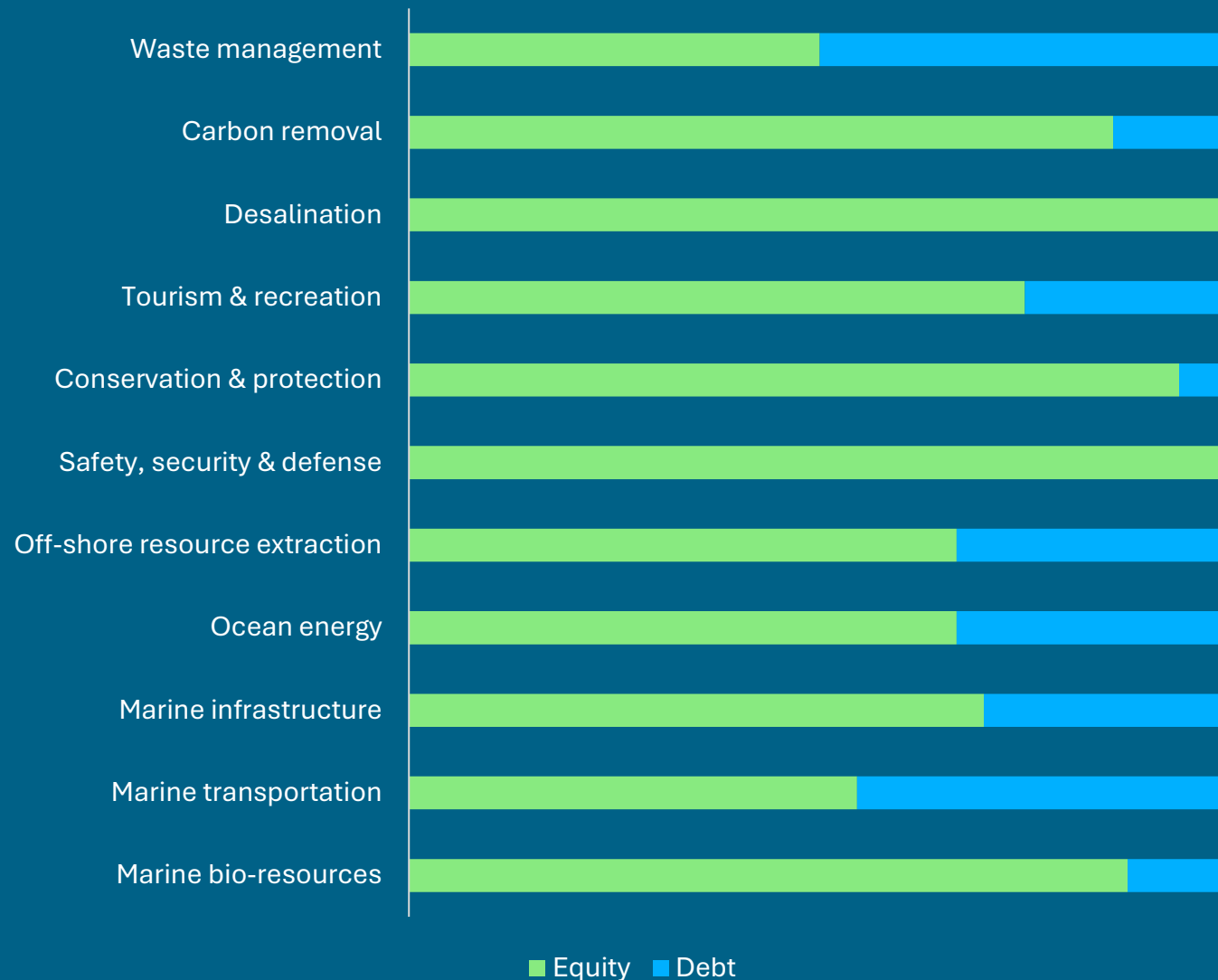
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Access to Financial Capital

2024 BC Blue Economy Landscape

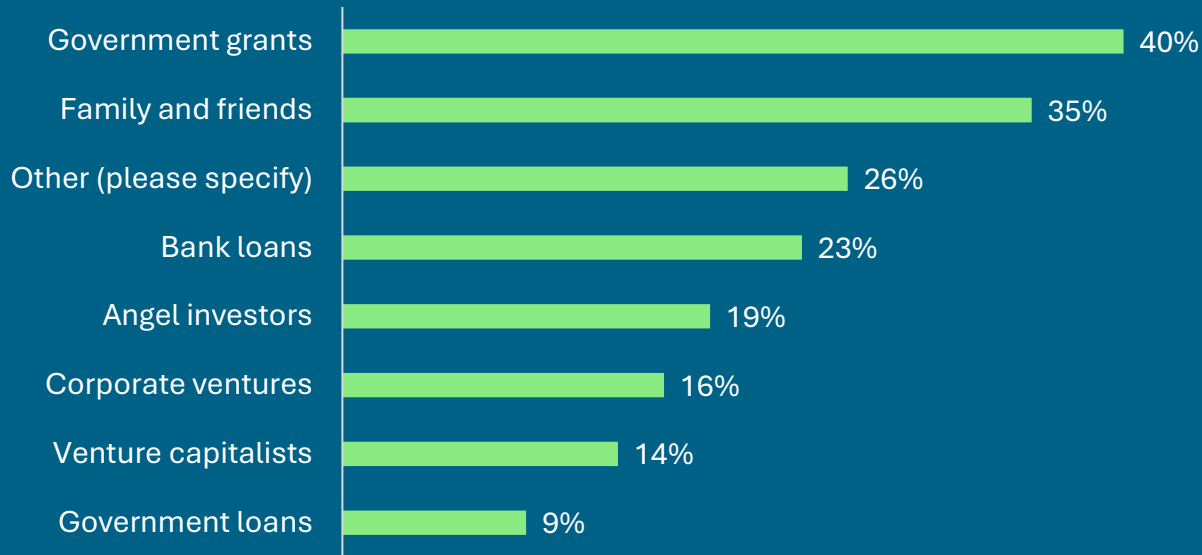
Existing Funding Sources



Existing funding sources vary considerably between sectors. Not surprisingly, the companies who responded have raised primarily **Equity** capital, but the portion of equity to debt capital varies. Sectors like **Conservation and protection** have almost exclusively been funded through **Equity** capital, while **Marine transportation**, **Waste management**, **Ocean energy**, and **Off-shore resource extraction** have seen more of a balance of debt and equity (albeit equity is still a majority share).

The variation in debt and equity funding is most likely due to the market types in these sectors, where revenue generation is harder to realize in the **Conservation and protection** sector than in **Marine transportation**, for example. Sectors that have a clearer path to revenue generation are more likely to be considered for debt funding than those where revenue may be far off.

Existing Funding Sources

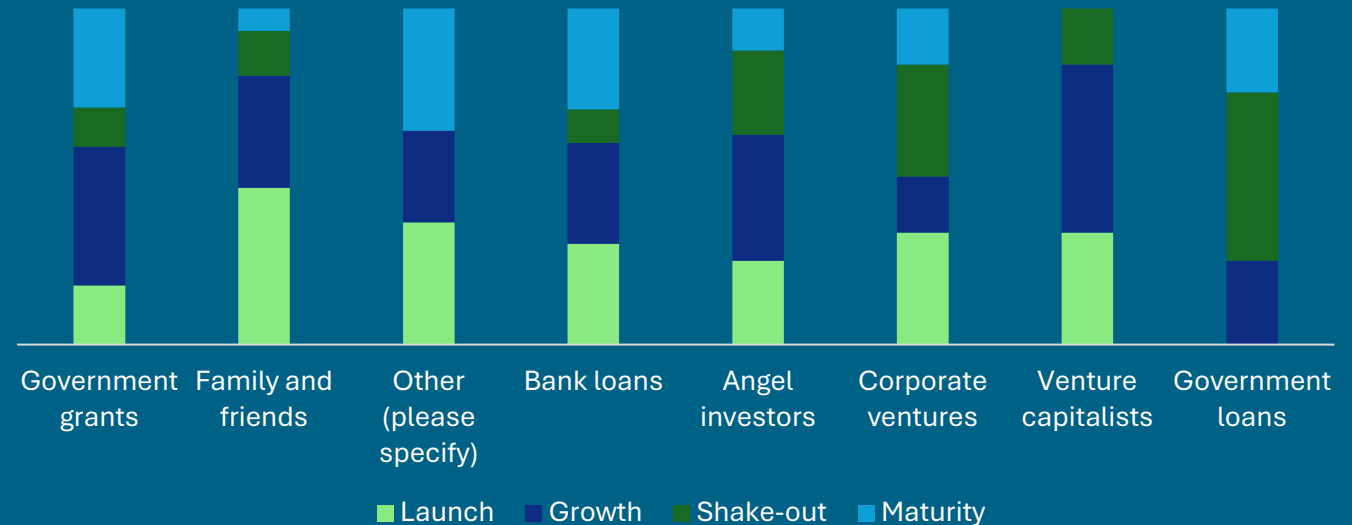


Nearly one in two companies have been funded through **Government grants**. Less than 15% of those who responded have been funded from **Venture capitalists**, and less than one in five have received funding through **Angel investors**.

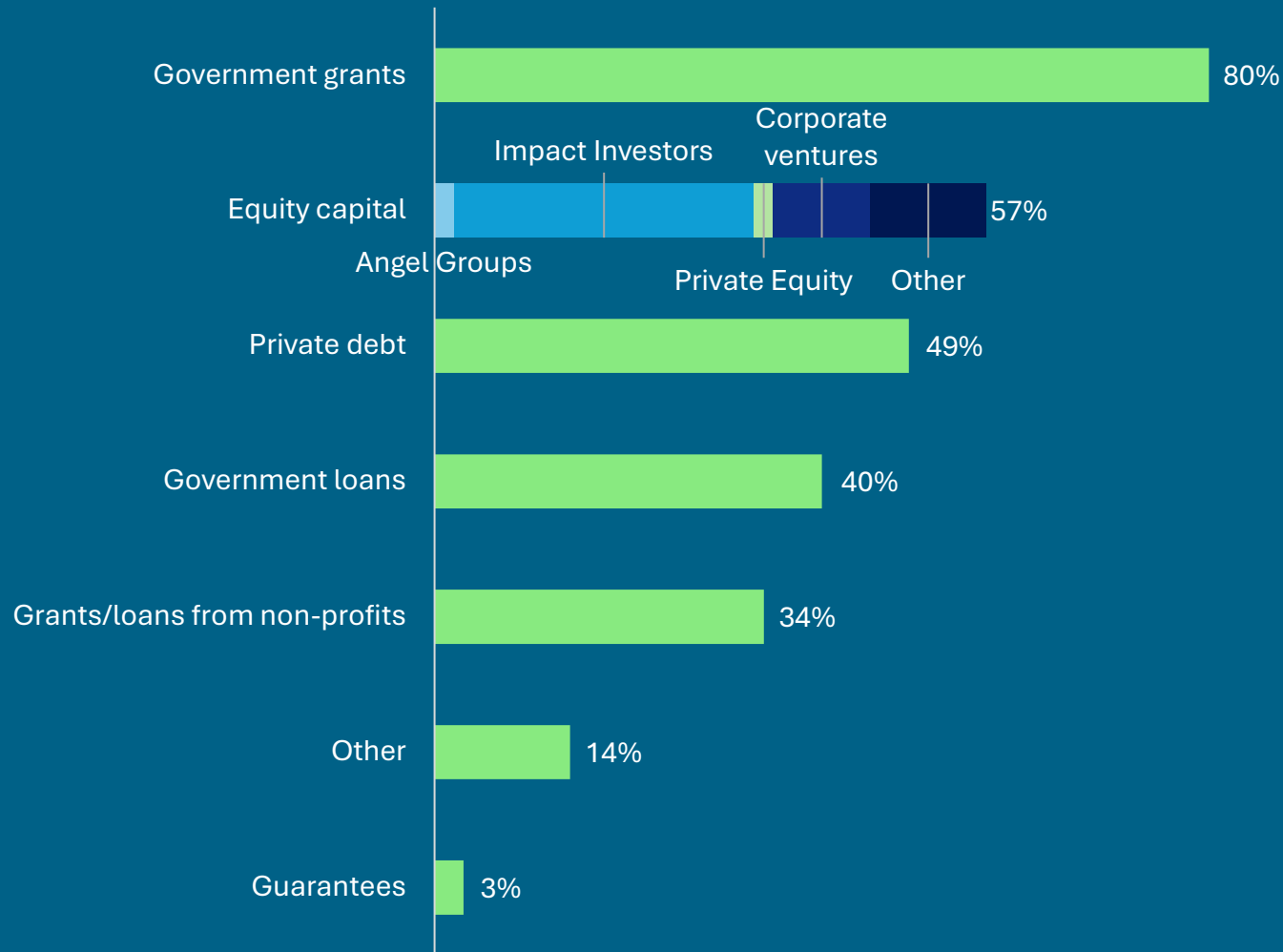
Nearly 25% of companies have used **Bank loans** as a source of capital and surprisingly some of those companies have considered themselves in the **Launch** or **Growth** stage (see below).

The majority of respondents who indicated they have received **Family and friends** funding are in the **Launch** stage. However, no organizations identified in the **Maturity** phase have received funding from **Venture capitalists**.

Notably, the majority of companies that received **Government grants** are in later stages of development (i.e. after **Launch**).



Capital Being Sourced in Next Two to Three Years



Companies who are seeking funding in the next two to three years are overwhelmingly targeting **Government grants** (four in five). This is not surprising considering the current sources of funding and that typically **Government grants** are non-dilutive, though it also demonstrates the importance of helping companies to access diversified pathways to funding, to avoid an overreliance on **Government grants**.

57% of companies are seeking **Equity capital**, and one in two respondents are considering **Private debt**.

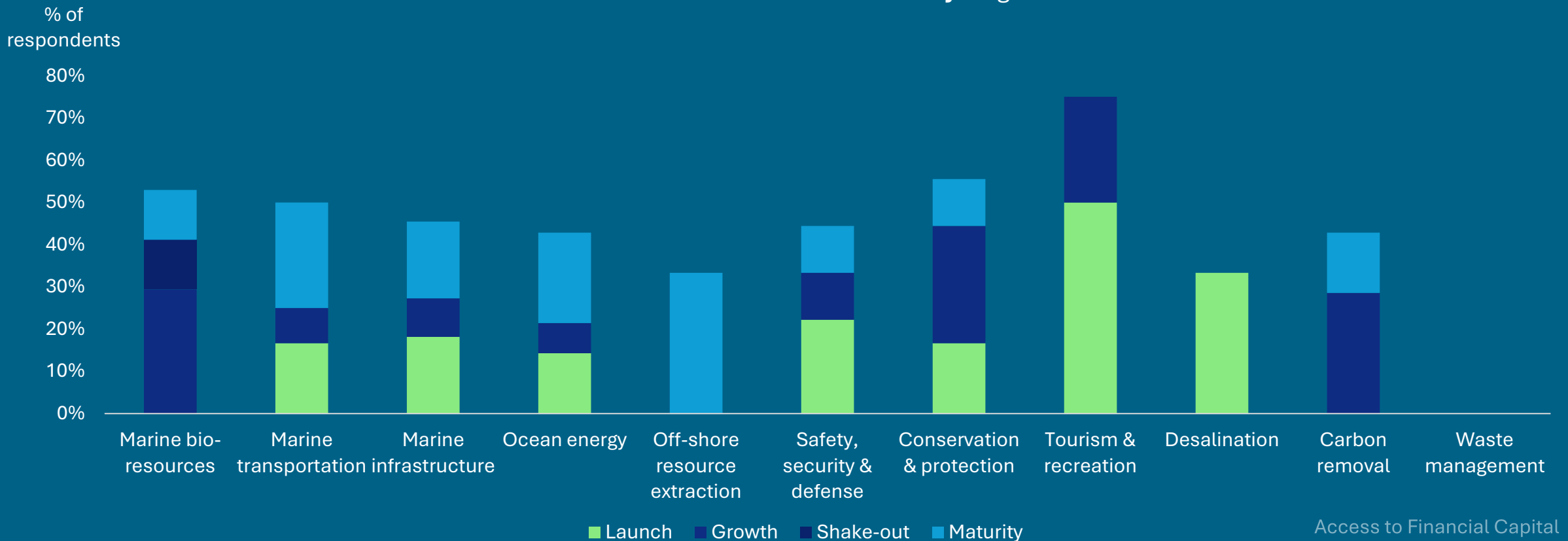
The results indicate that further assessment of type of equity capital is worthwhile. 54% of companies seeking **Equity capital** are looking for **Impact investors**, while 18% and 21% are considering **Corporate ventures** and **Other** sources of funding, respectively.

Less than 5% are looking for **Angel groups**, and no companies that report seeking equity capital financing are considering **Venture capitalists**.

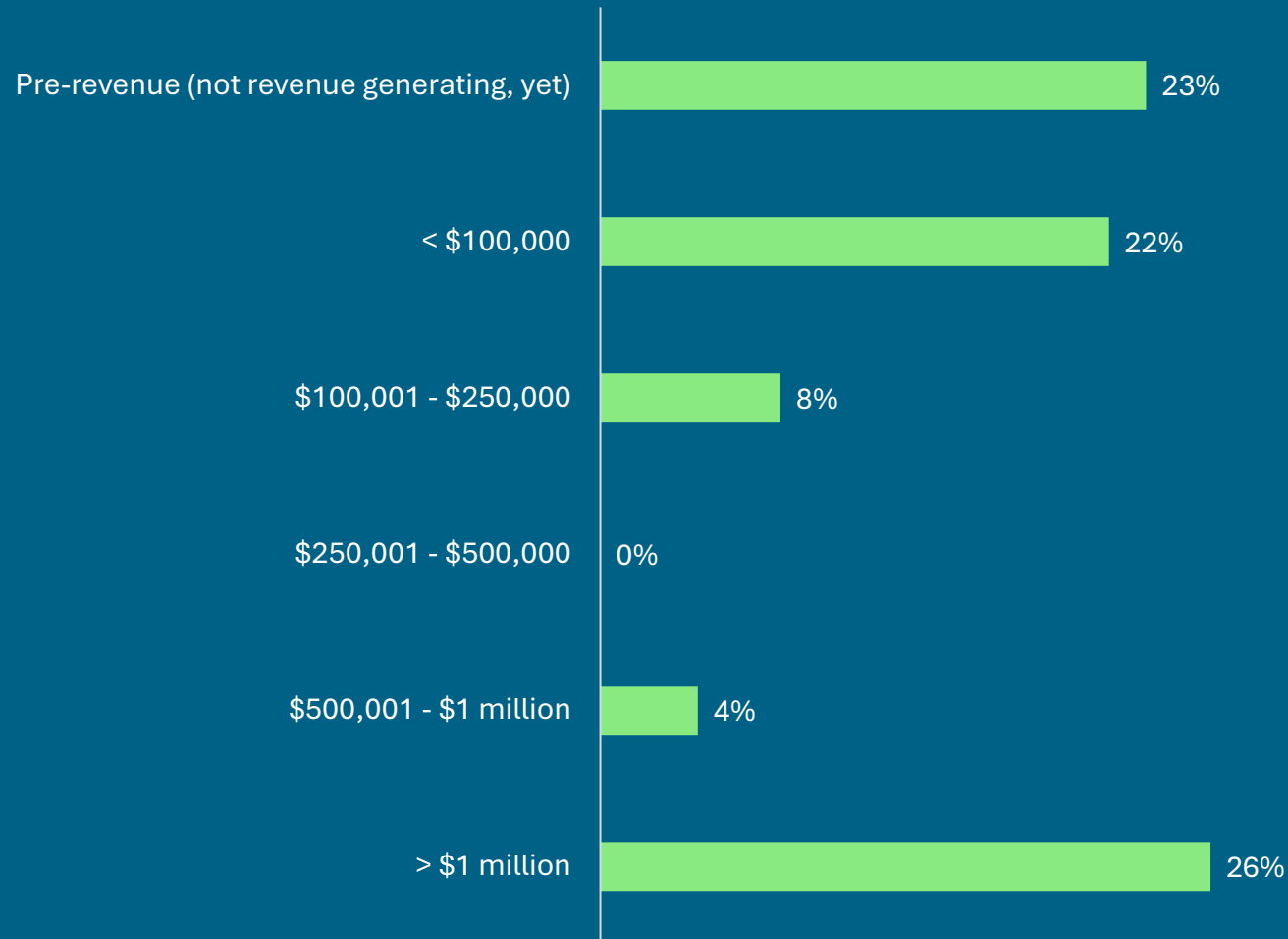
Expected Capital Raise by Sector and Company Stage

Trends emerged along sector lines among companies planning a capital raise within the next two to three years. Further investigation of sectors seeking capital and the stage of the companies yields the following general conclusions (it should be noted that companies could select multiple sectors as their primary focus areas).

- Fewer companies in the **Off-shore resource extraction** and **Desalination** sectors are seeking capital than other sectors
- In the **Safety, security and defense** sector, the companies seeking capital are predominantly in the **Launch** stage, whereas other sectors, the companies seeking capital are in the **Maturity** stage.



Revenue of Companies Sourcing Capital



Of those companies seeking capital in the next two to three years, approximately one in four are **Pre-revenue**. However, the same approximate number of respondents have an existing revenue in **excess of \$1 million**.

Except for those companies with a revenue in **excess of \$1 million**, it appears that as the existing revenue increases, companies are less likely to be seeking capital.

Further analysis of this trend is required to understand if there are specific reasons for this, but it appears that this could be a missed opportunity, where companies with existing revenues are generally more likely to secure capital than those without.



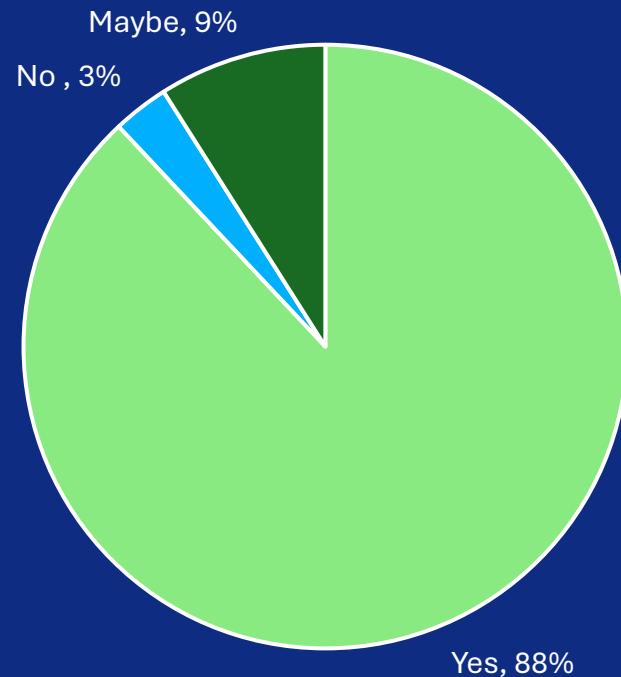
Access to Talent

2024 BC Blue Economy Landscape



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Employing People in Next Two to Three Years



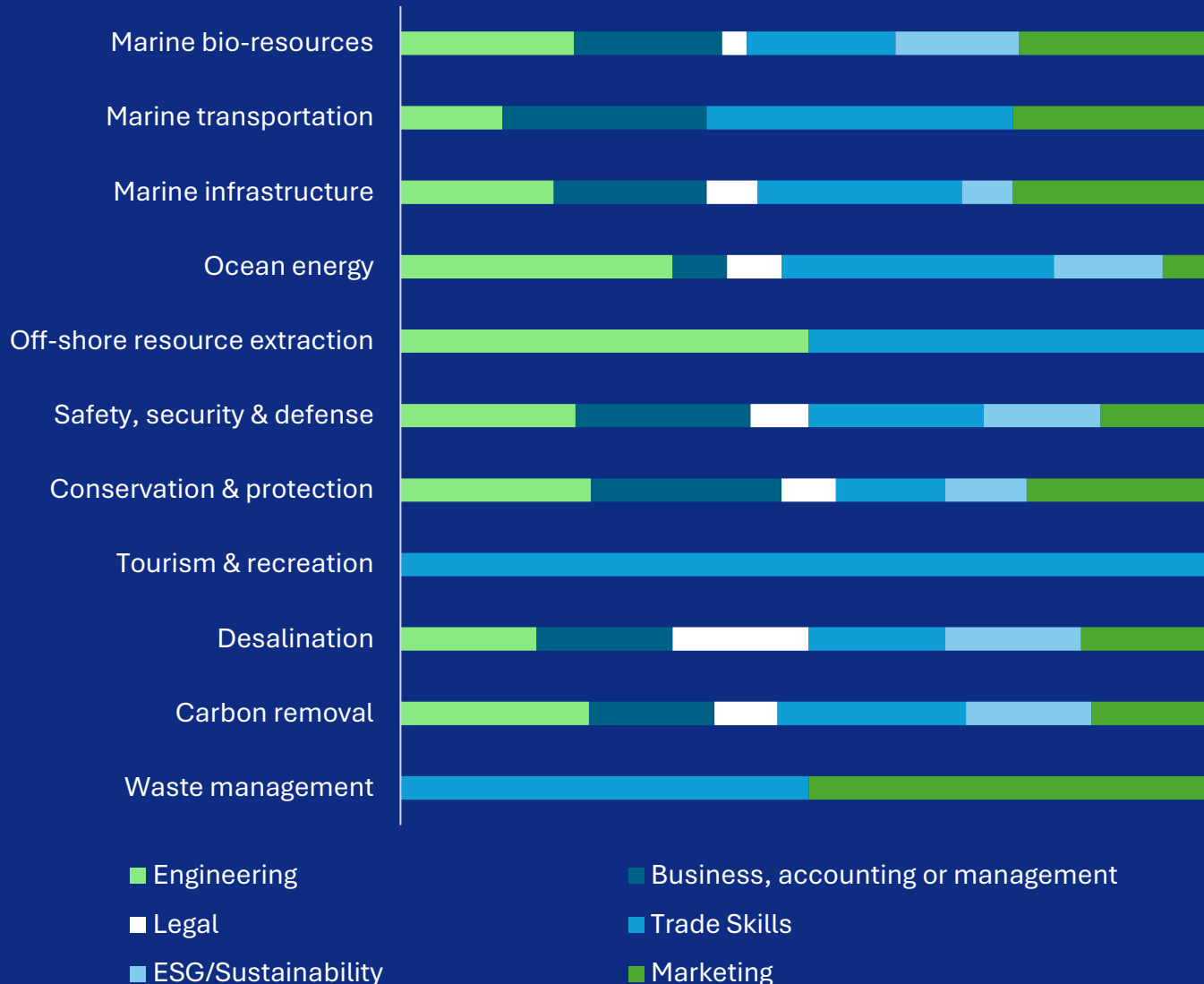
An overwhelming majority of companies surveyed identified that they are planning (or maybe planning) to employ people in the sector in the next 2-3 years.

Of those companies who are seeking talent in the next two to three years, almost half are in the **Growth** stage and another one in three are in the **Maturity** stage. A smaller percentage are in the **Launch** and **Shake-out** stage.

This is important for workforce development considerations, where the needs of those companies in the **Growth** stage will most likely lead to actual employment opportunities.



Sector Skills Sought



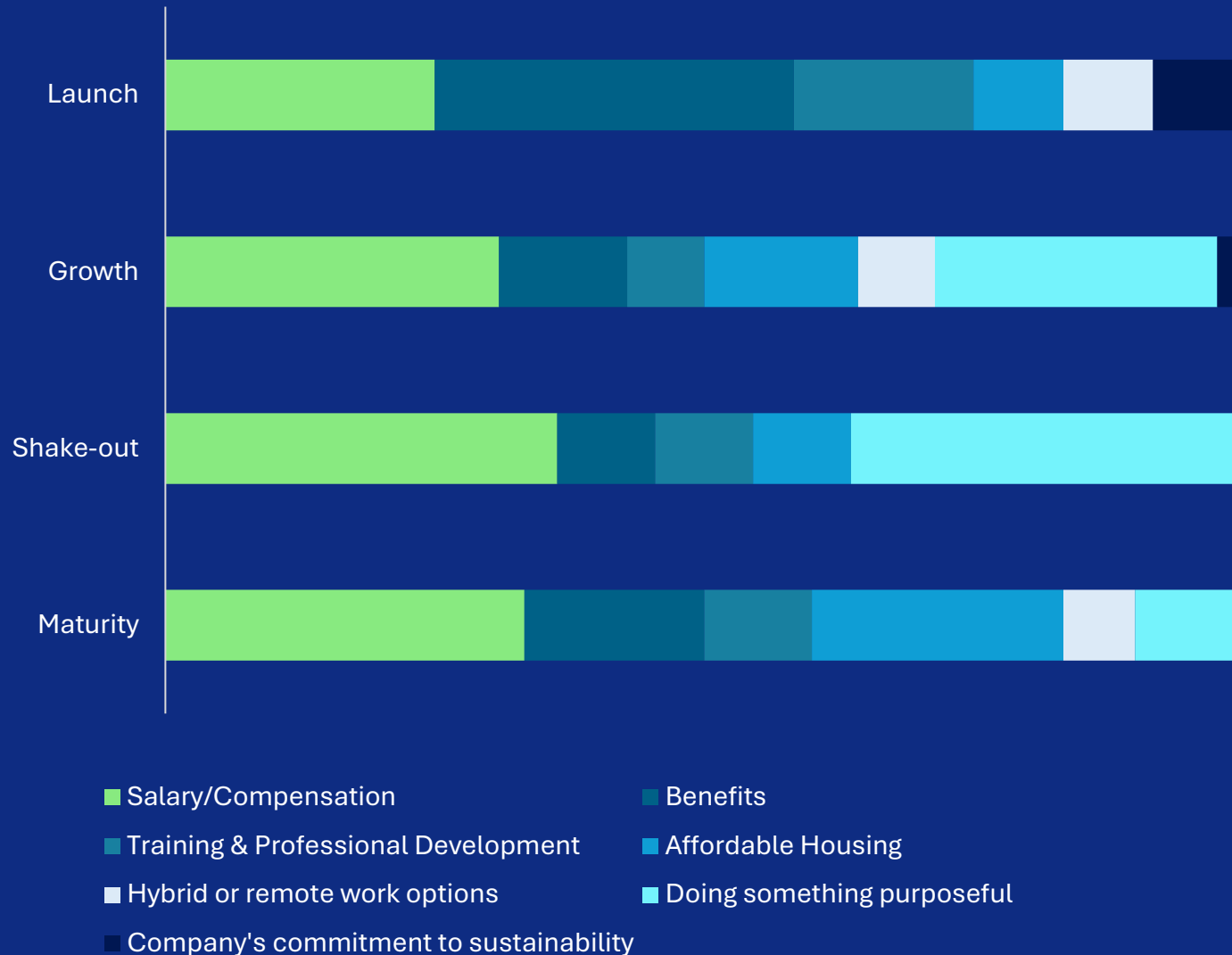
Of the companies who are seeking employment, one in two are looking for each of the following skill sets:

- **Engineering**
- **Business, accounting or management**
- **Trade skills**
- **Marketing**

When looking at the sectors, **Engineering** is more sought for the **Ocean energy** companies; **Business, accounting or management** is sought by **Conservation and protection** entities; **Trade skills** is sought after by **Marine transportation** companies; and **Marketing** by **Marine infrastructure** companies. The other sectors, including **Marine bio-resources** and **Safety, security and defense**, are seeking these skills equally.

Notably, the results for the **Off-shore resource extraction**, **Tourism and recreation**, and **Waste management** sectors are influenced by lower response rates and trends are harder to determine.

Attracting Talent by Stage



Companies at the **Launch** stage identified access to **Benefits** as the primary way to attract and retain talent, whereas companies at a later stage indicated that **Salary/compensation** is the primary factor influencing this factor.

Notably, companies at the **Launch** stage did not identify **Doing something purposeful** as an attraction for talent, whereas companies at a later stage indicated it being relatively important.

Conversely, a **Company's commitment to sustainability** was identified as an influence for talent attraction and retention for companies at the **Launch** stage, but not the later stages (i.e., **Shake-out** and **Maturity**).

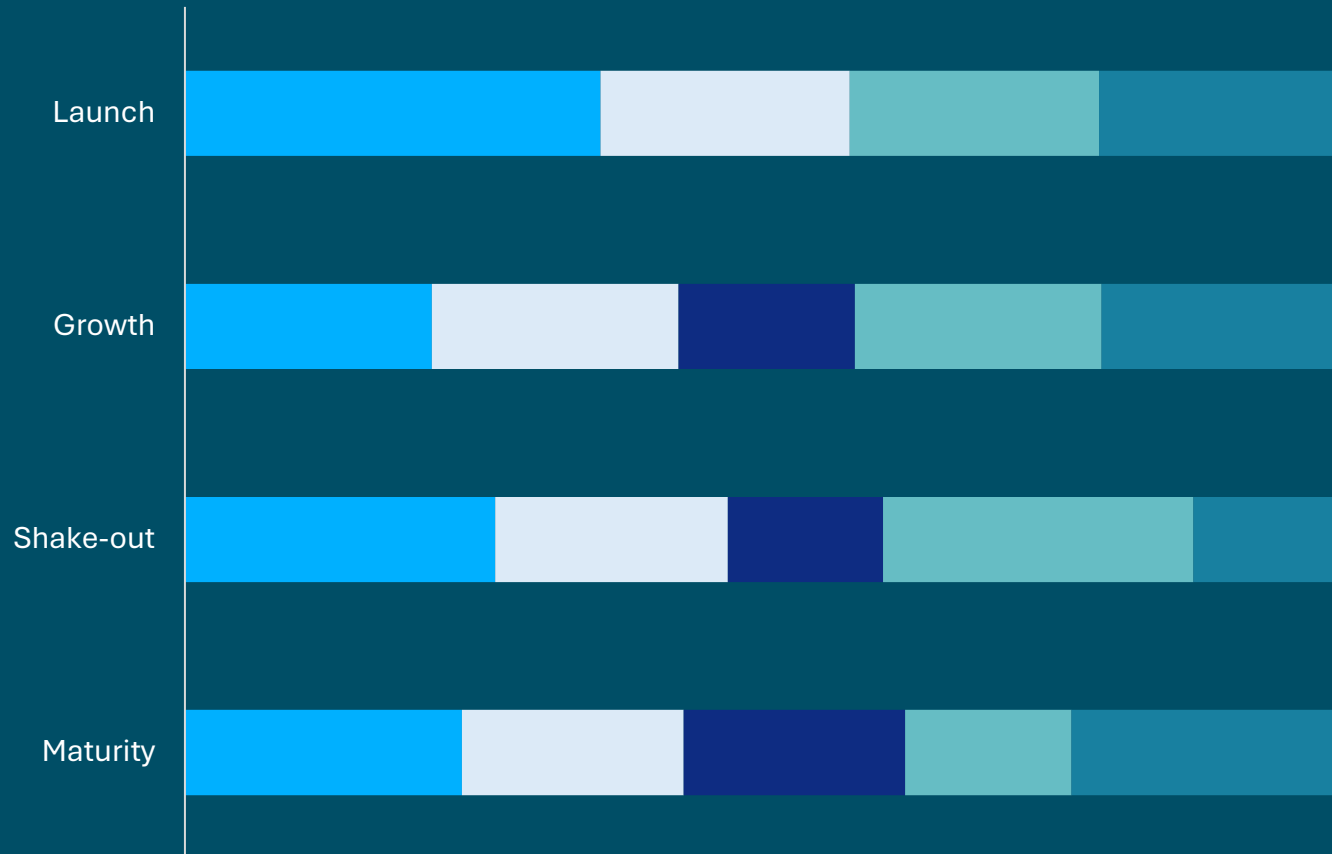


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Access to Facilities and Equipment

2024 BC Blue Economy Landscape

Facilities and Equipment Needs by Stage



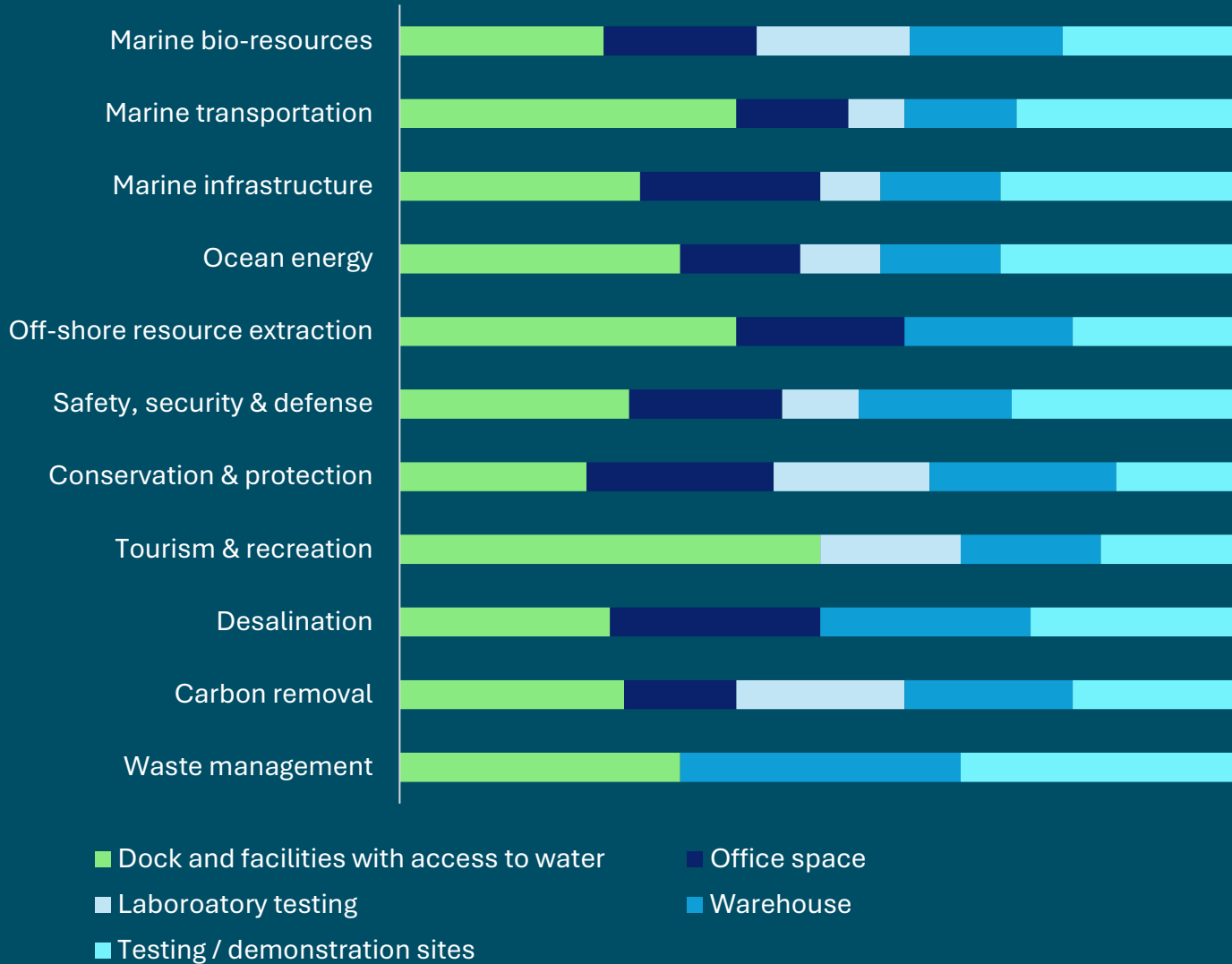
- Dock and facilities with access to water
- Office space
- Laboratory testing
- Warehouse
- Testing / demonstration sites

A higher proportion of companies at the **Launch** stage are seeking **Dock facilities with access to water**, while a higher proportion of companies at the **Maturity** stage are seeking **Testing / demonstration sites**.

The need for **Office space** shows a relatively similar proportion for companies at all stages, whereas access to **Warehousing** seems to be higher for companies at earlier stages (ie. **Launch** and **Growth**).

Overall, two thirds of companies are looking for **Dock space with access to water** and one in two companies are looking for all of **Testing / demonstration sites, Office space** and **Warehousing**.

Sector Equipment & Facility Needs

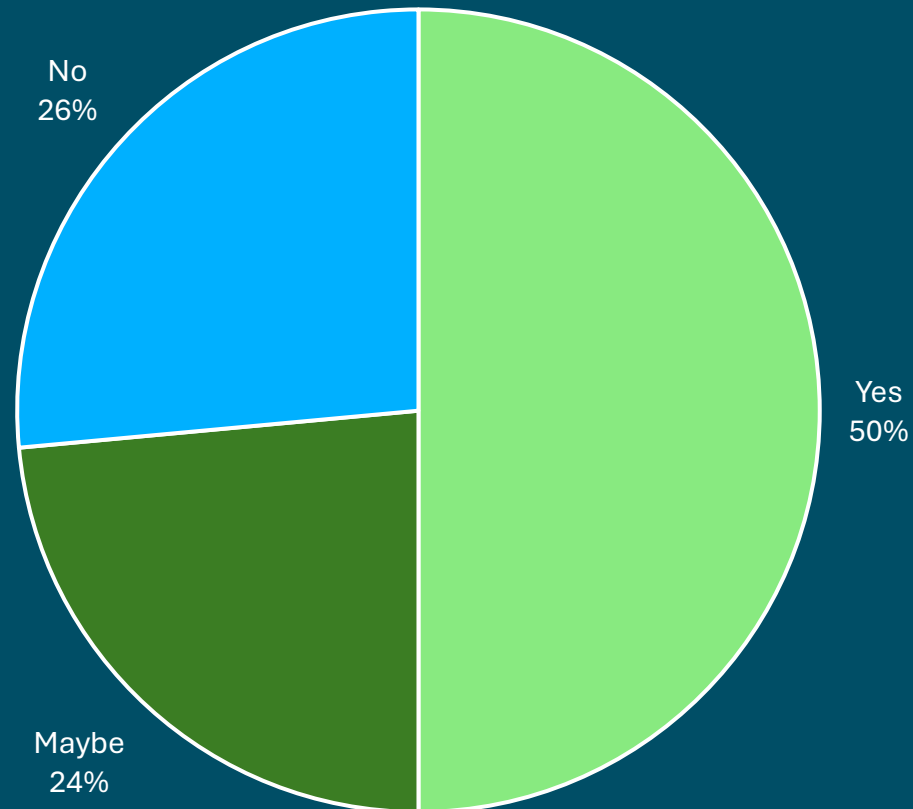


A higher proportion of companies in the **Marine transportation, Ocean energy, and Marine infrastructure** sectors are seeking **Dock facilities with access to water** than other sectors.

Note: the results for the **Off-shore resource extraction, Tourism and recreation, and Waste management** sectors are influenced by low response rates and any trend analysis is subjective at best.

A high proportion of companies in the **Marine infrastructure, Ocean energy, Safety, security and defense, and Marine transportation** sectors are seeking **Testing/demonstration sites**.

Moving to a Shared Innovation Space



Nearly three in four companies indicated their interest (either **Yes** or **Maybe**) in locating at a shared innovation space. Based on the results shown in the previous slides, this innovation space would benefit from having:

1. Dock facilities with access to the water
2. Testing / demonstration sites
3. Warehousing
4. Office space

These results also demonstrate that the companies surveyed see the benefit in co-location which can drive collaboration and sharing of ideas.



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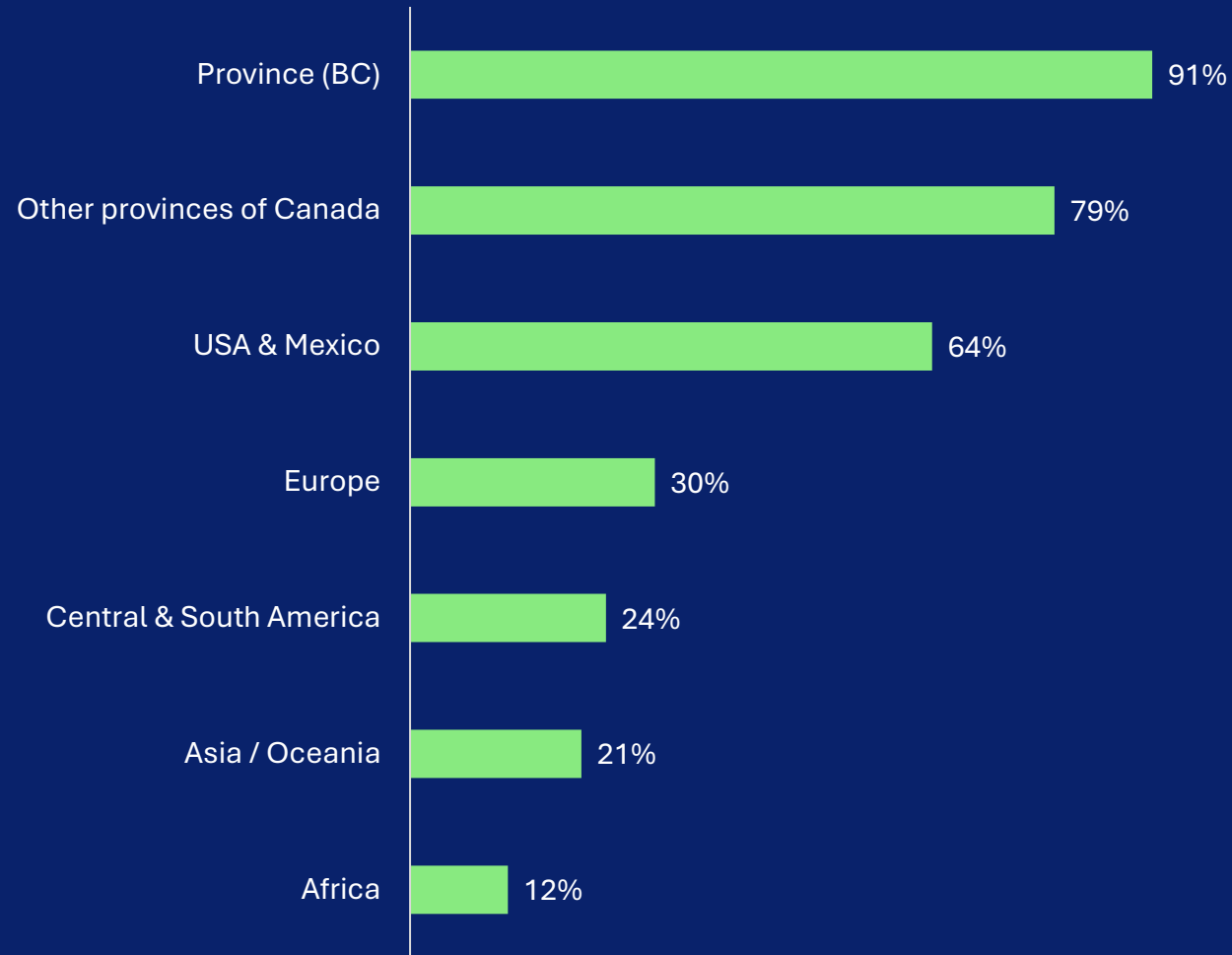


Access to Markets

2024 BC Blue Economy Landscape



Overall Target Markets



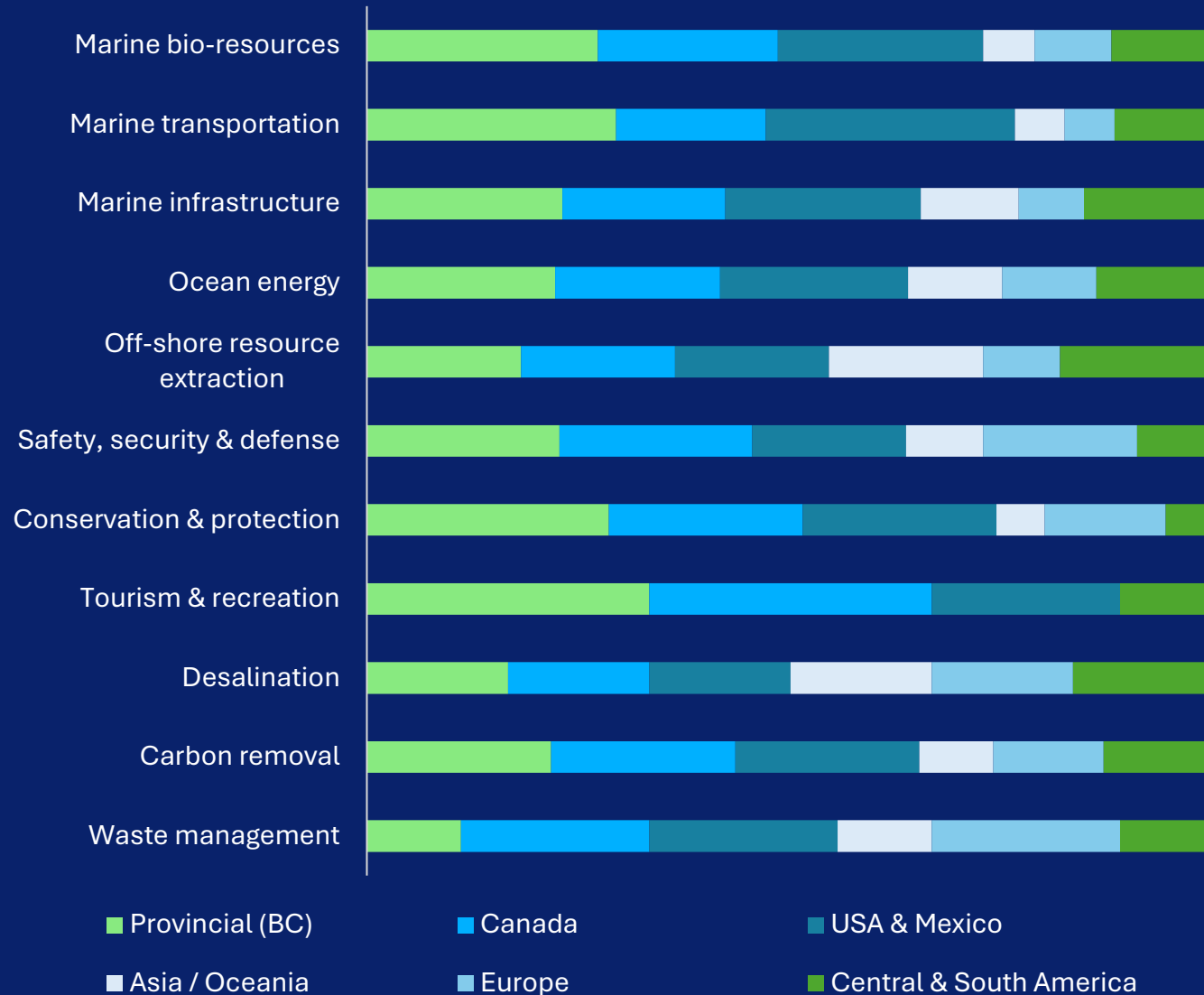
Over 90% of companies indicated that the **Province of BC** is a target market – which suggests a desire to remain in the province.

Only one in five companies identified **Asia/Oceania** as a target market which, considering BC's proximity to Asia and the connection of the Pacific Ocean, seems to be a missed opportunity.

Two-thirds of companies see the **US and Mexico** as a target market, which means there is benefit in strengthening ties within the Pacific Northwest Economic Region which can be an avenue to US markets.

Only 30% of companies see **Europe** as a target market, which is may be due to the geographic distance and language barriers. This factor is likely to be different in other regions of Canada.

Sector Target Markets

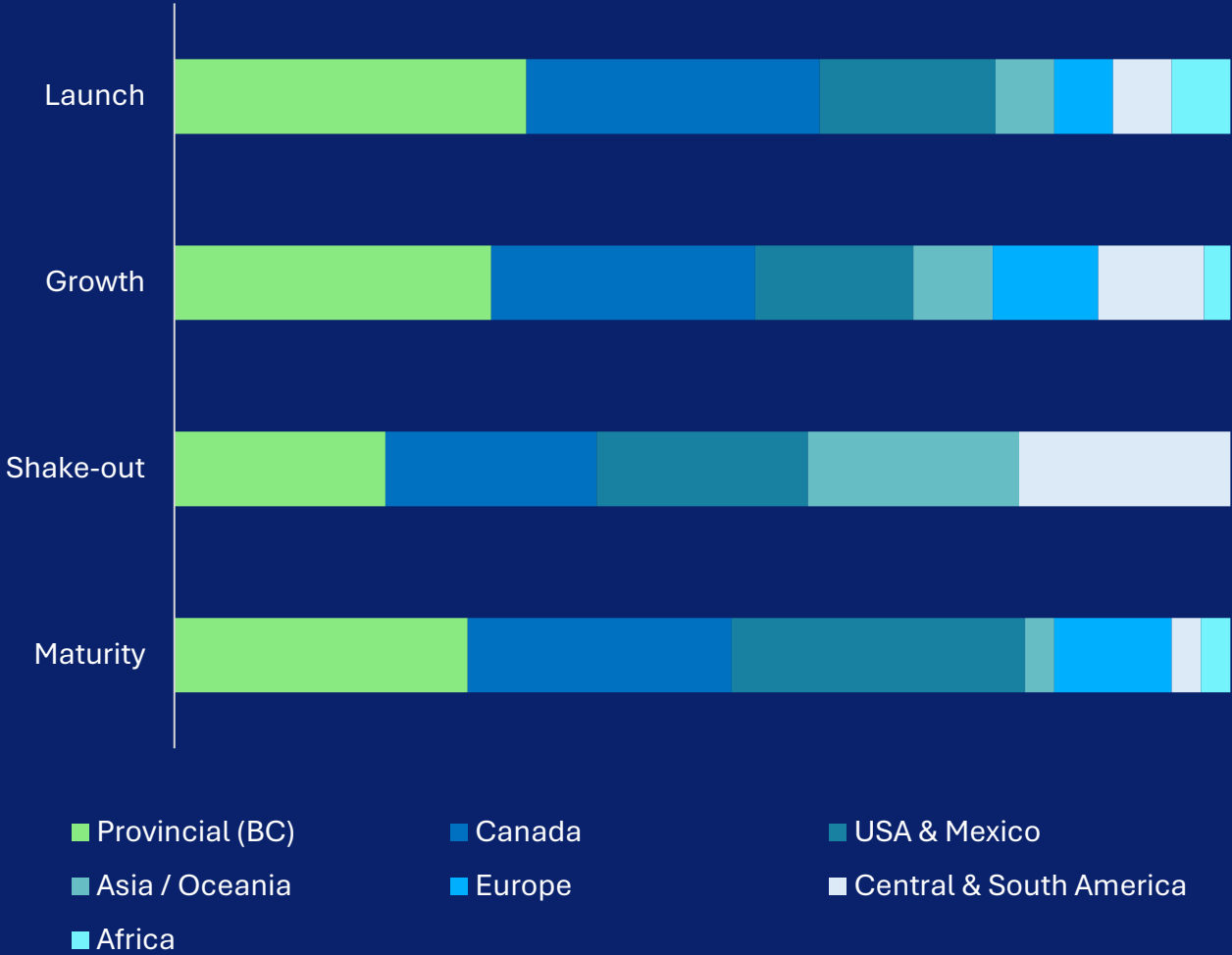


The breakdown of target markets for the different sectors paints the following picture:

- **Europe** appears to be a more targeted market for the **Safety, security and defense** and **Conservation and protection** sectors
- **Asia/Oceania** appears to be a more targeted market for **Marine infrastructure**, **Ocean energy** and **Desalination** sectors
- The **US and Mexico** appears to be more target market for **Marine transportation** and **Carbon removal** sectors
- In terms of the BC market, it appears that **Marine transportation** and **Conservation and protection** are more influenced by the local market than other sectors

Note: **Off-shore resource extraction**, **Tourism & recreation**, and **Waste management** have not been included in the analysis due to low response rates.

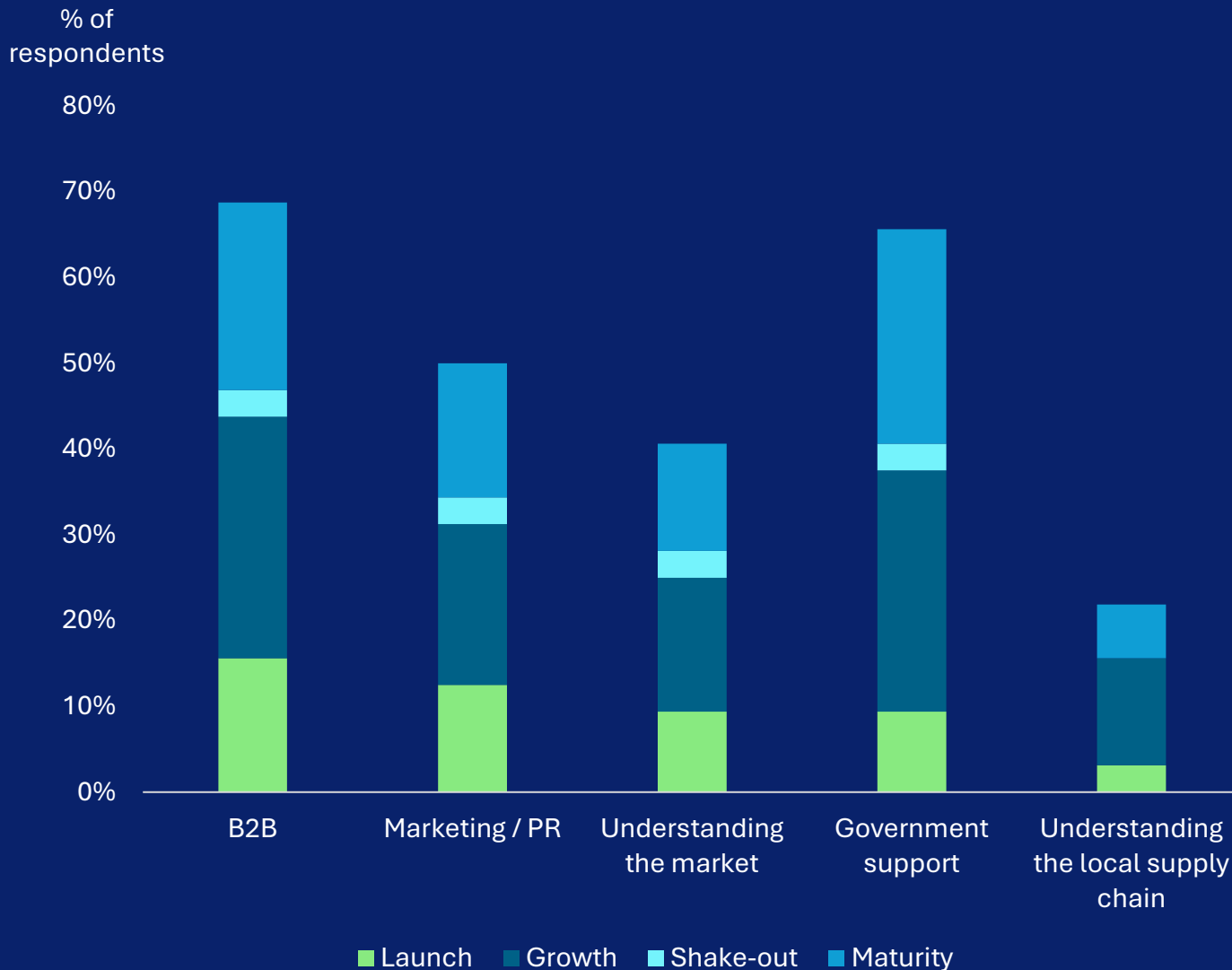
Target Markets by Stage



In terms of the target markets for companies at different stages, there appears little overall difference. Companies at the **Launch** stage do appear to have a greater reliance (or relative focus) on the local BC market, but this is most likely due to the fact that they are still evaluating markets, and that at this stage, it is not possible to target markets further afield.

Companies in the **Maturity** stage show a balanced target market approach between BC, the rest of Canada and the US and Mexico. This suggests that there should be easy ways for companies as they hit **Maturity** to be able to operate in the US.

Needs to Penetrate Target Markets



Business to Business (B2B) opportunities were the highest ranked need for companies to penetrate target markets, with 72% of companies requesting this support.

Government support in connecting with target markets was second-highest ranked need (69%), followed by **Marketing / PR** (50%).

Only 22% of companies reported that **Understanding the local supply chain** was needed to help penetrate their target markets. This is consistent with the lower rating of supply chain issues as a barrier to growth described above.

There was little difference in the need to penetrate target markets for companies at different stages.

Conclusion & Key Takeaways

Overall, the results present a dynamic, complex ecosystem of blue economy companies in Pacific Canada

Key takeaways from this survey include:

- **Companies over-depend on government funding** - respondents indicated a notable dependency (80%) on government grants as a primary focus for fundraising.
- **Access to financial capital is the greatest barrier to growth** - 1 in 2 companies sees access to capital as a barrier to growth with 82% seeking capital in the next 2-3 years.
- **Dock facilities with access to water and testing/demonstration sites are needed in BC** - Respondents indicated their interest in shared innovation spaces to meet these needs
- **Companies at all stages wish to focus business efforts here in British Columbia** - Over 90% of respondents count BC as their target market regardless of company stage
- **Hiring and workforce development is a priority** - 88% of companies are planning to expand their teams in the next two to three years

Trends demonstrate the need for further analysis to draw more definitive conclusions about the needs, barriers, and opportunities faced by ocean innovators in Pacific Canada.





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