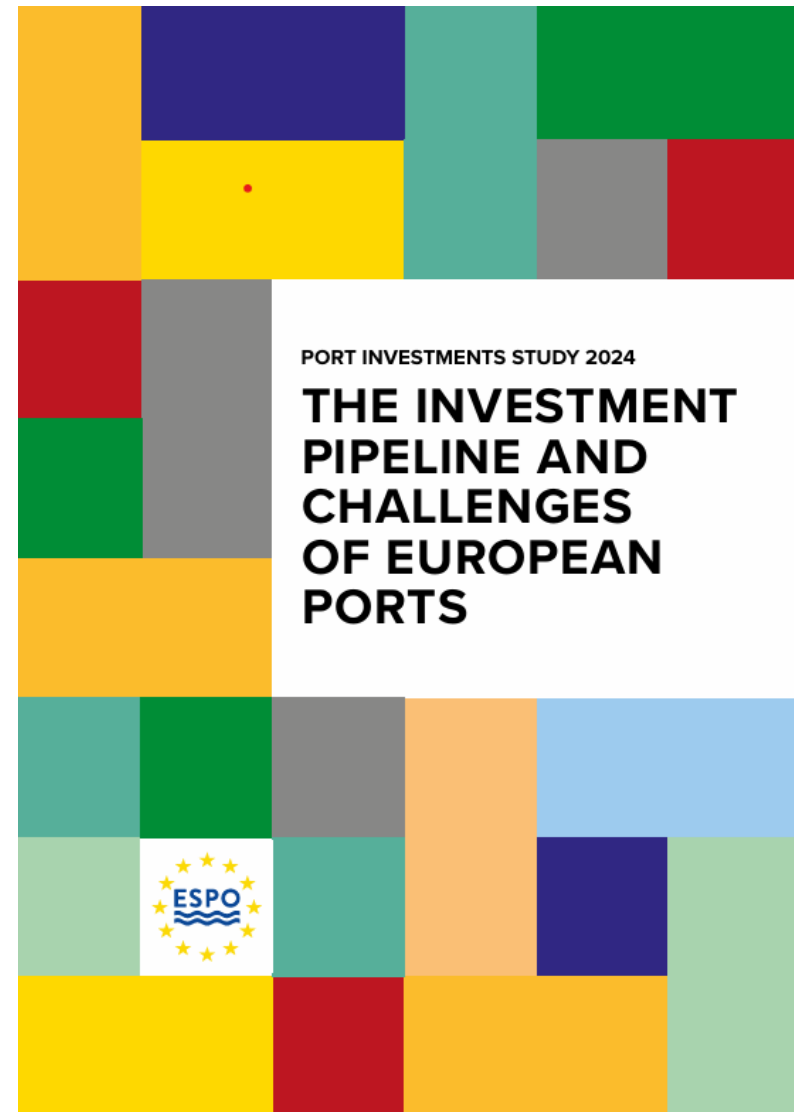


THE INVESTMENT PIPELINE AND CHALLENGES OF EUROPEAN PORTS

- Presentation of the main findings of the report
- By Dr. Peter W. de Langen, Ports & Logistics Advisory, who executed the study jointly with the ESPO team.
- The study, including ESPO's policy recommendations, is available online at www.espo.be



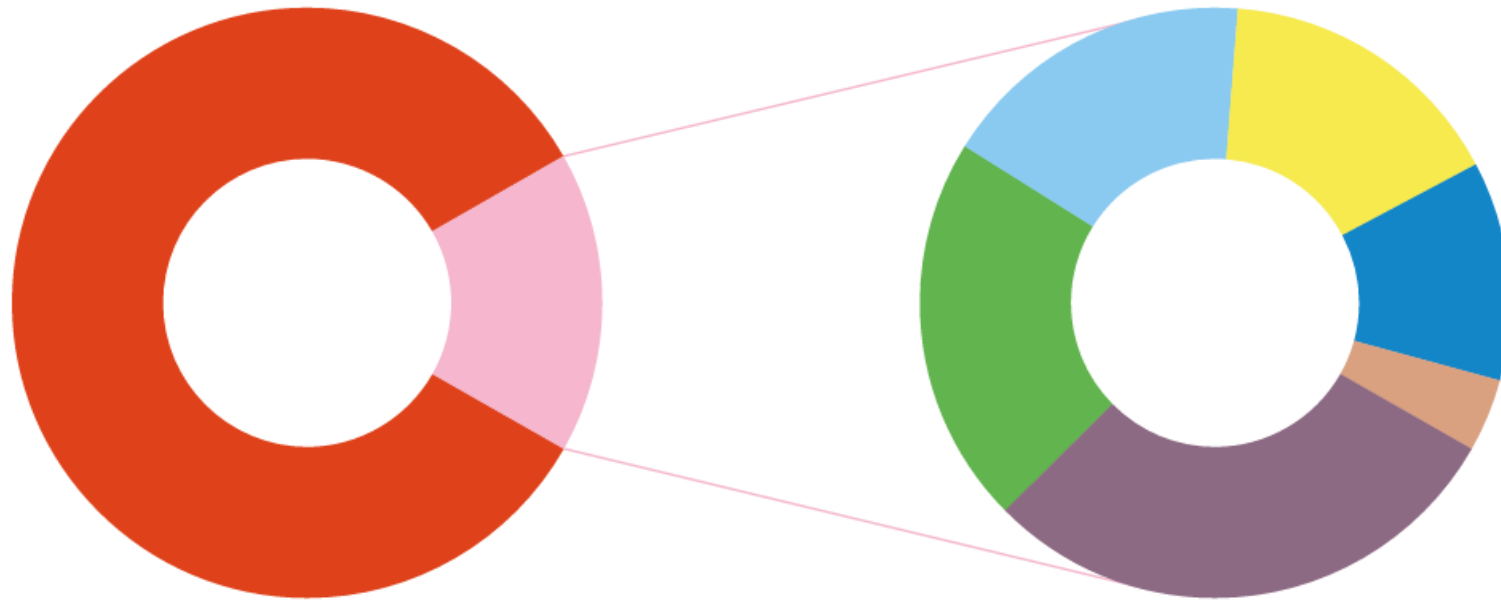
Survey approach; response higher than in 2018 good representation of EU ports industry

Respondent type	# respondents
One TEN-T core port	35
Multiple ports in one port system, including core and/or comprehensive ports	18
One TEN-T comprehensive port	19
One port or port system that is not included in the EU TEN-T network as core or comprehensive port	12
Total number of responding PMBs	84

- The total number of responding ports was 84, higher than in 2018 (60).
- The survey results cover 54 EU core ports, 46 EU comprehensive ports and dozens of ports not nominated as either core or comprehensive ports.
- The responding seaports cover more than 70% of the total cargo throughput in the EU. A total of 465 investment projects were included in the survey, higher than 2018 (396).
- The (average) number of projects submitted per port managing body was more than five; very similar to the 2018 study.
- For the vast majority of the above investment projects(84%), the PMB is the developer of the project.
- Given this high rate of responses, the survey results can be considered representative of the total EU ports industry.

In line with approach in 2018: database of investment projects of PMBs –and some third parties

- Port managing body
- A private company active in the port
- Joint venture between PMB and partners
- National government
- A state-owned enterprise
- Other
- Regional/local government

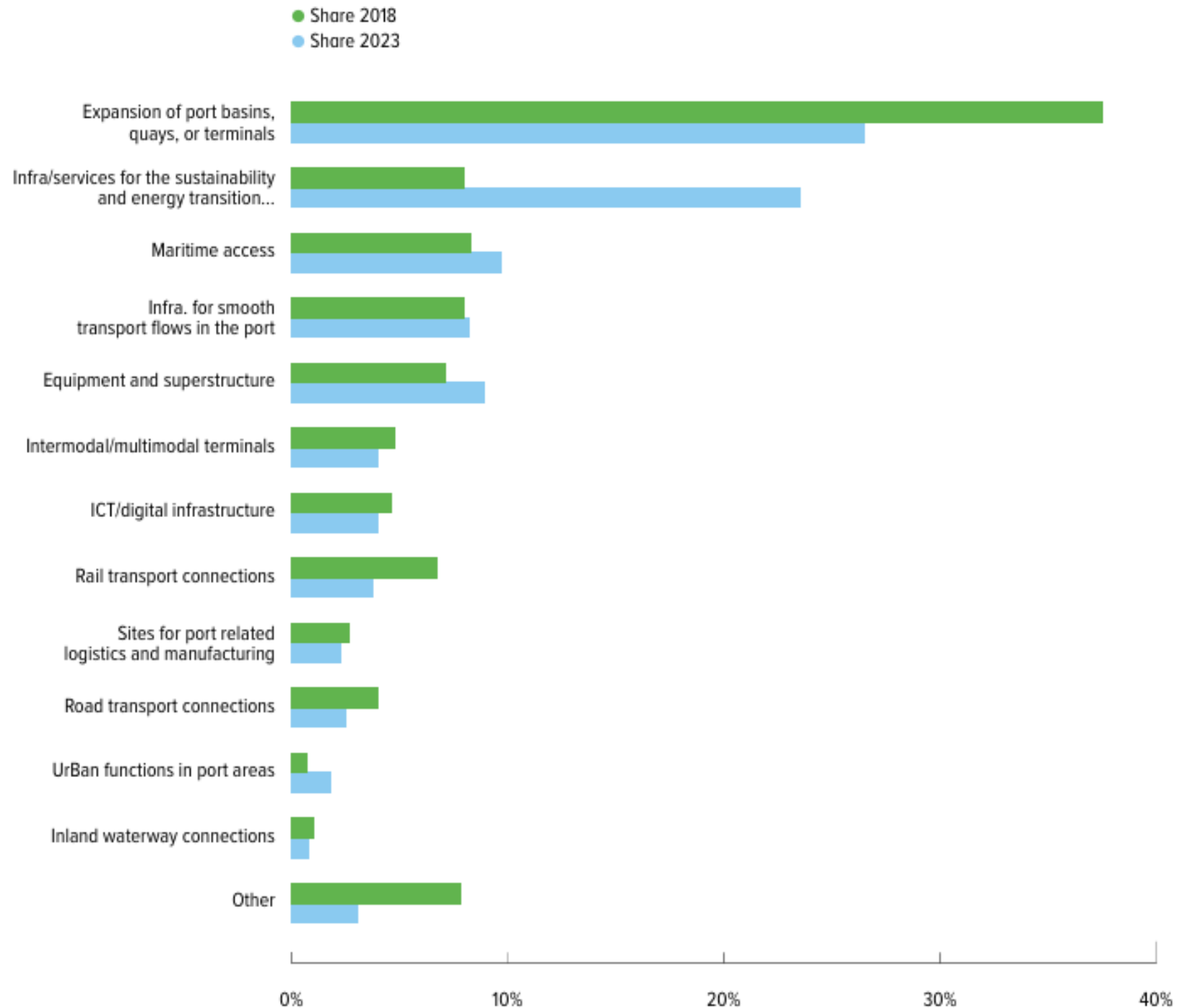


- For 84% of projects; PMB is developer. If the PMB is not the developer, it often is a partner in a JV for the project.
- If that is not the case, for around two thirds of projects, the developer is a state entity, for the remainder a private company is the developer.
- NB: for the estimate of investments (see later), the projects for which the PMB is not the developer are excluded.

Findings

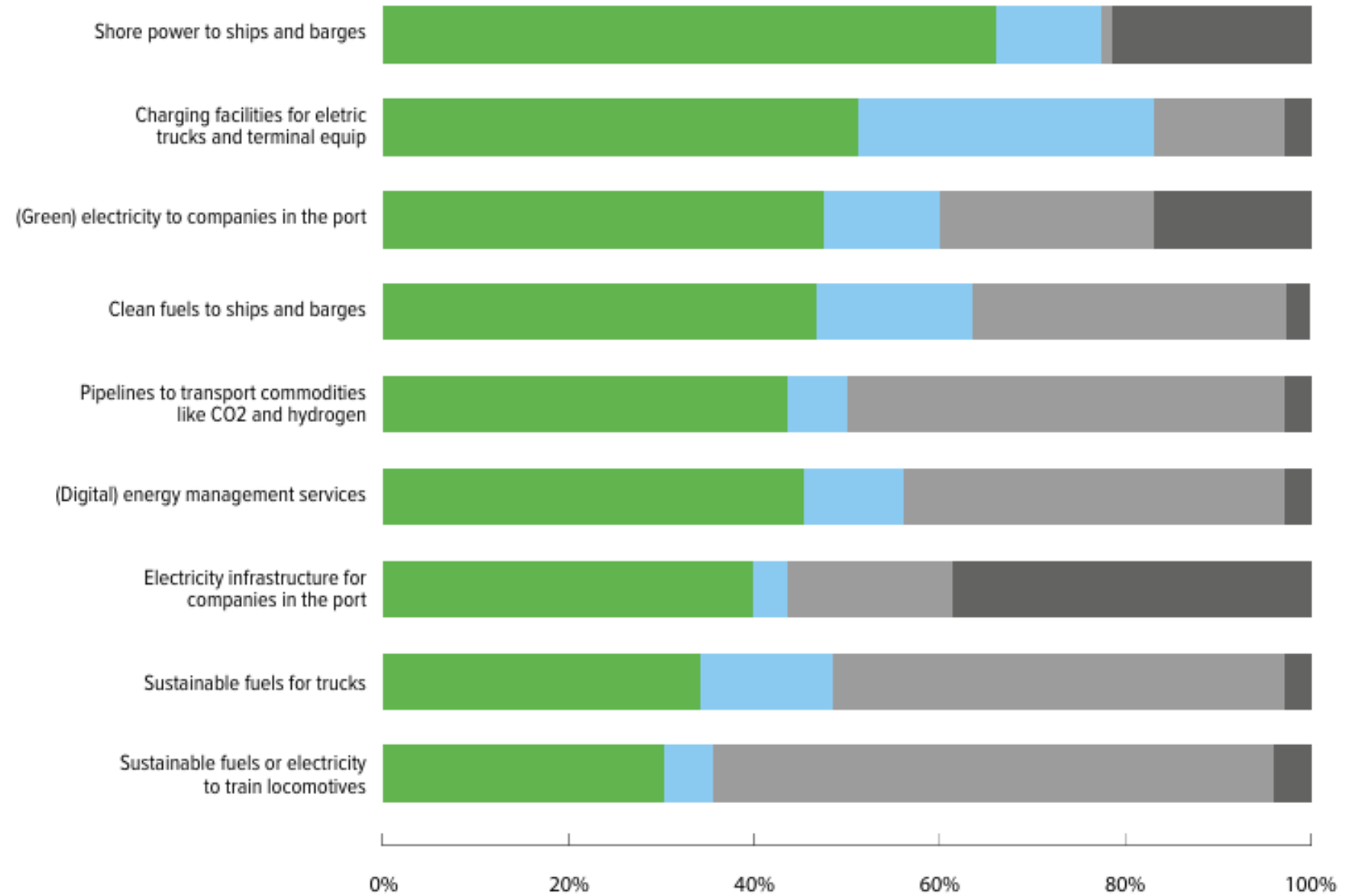
Increase of investments in sustainability and energy transition

- Classical 'expansion projects remain important but lose weight.
- investments in sustainability and the energy transition gain weight and cover more than 20% of total investment projects.
- Weight of rail transport connections decreases, likely because most ports have already executed such investments.
- A further split in 'sustainability and energy transition' projects is made (see next slide).



Changing service provision of PMBs

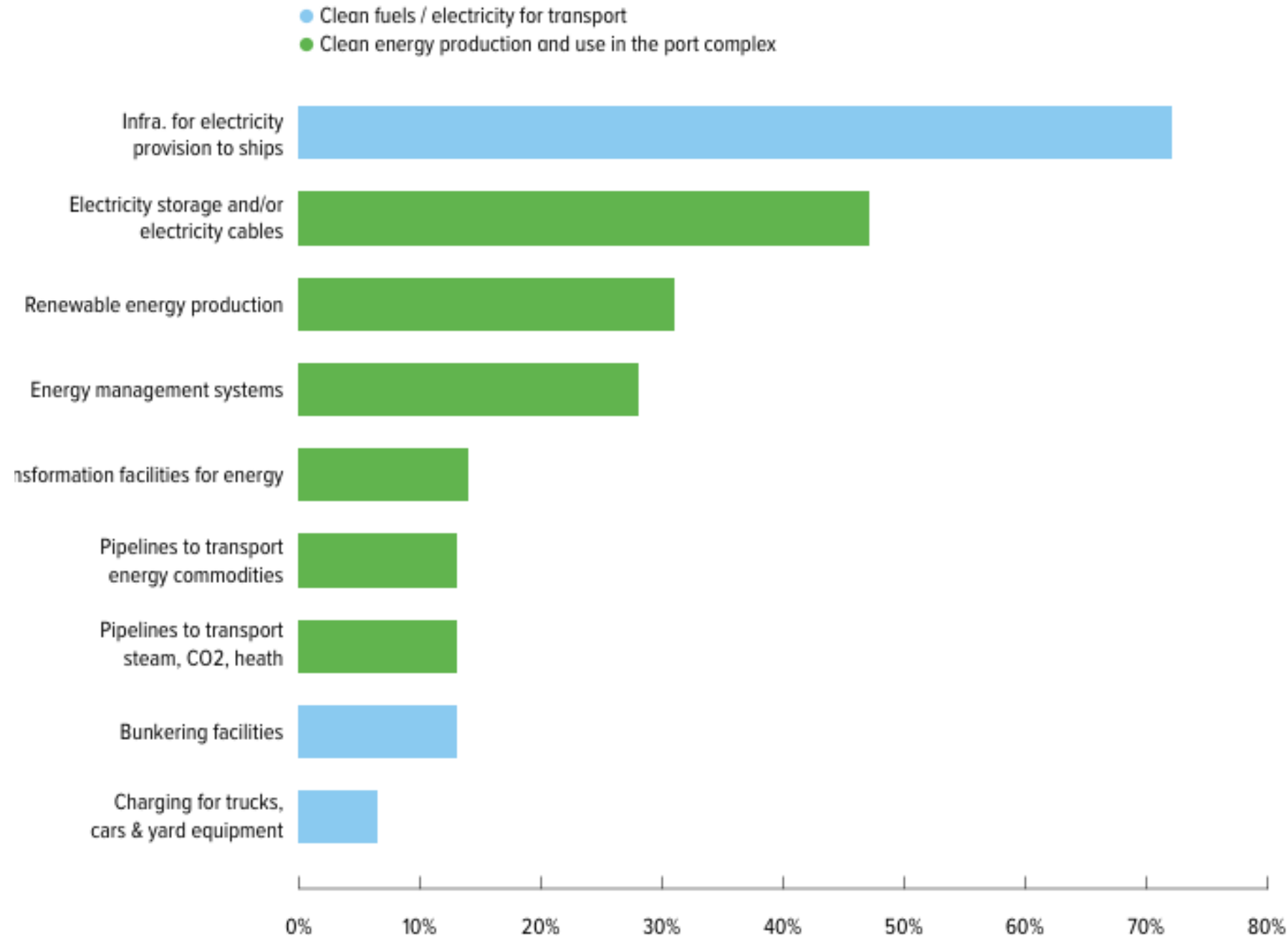
- We offer this service already for more than 5 years
- We have no plans to start offering this service
- We started offering this service in the last 5 years
- We plan to start offering this service in the next 5 years



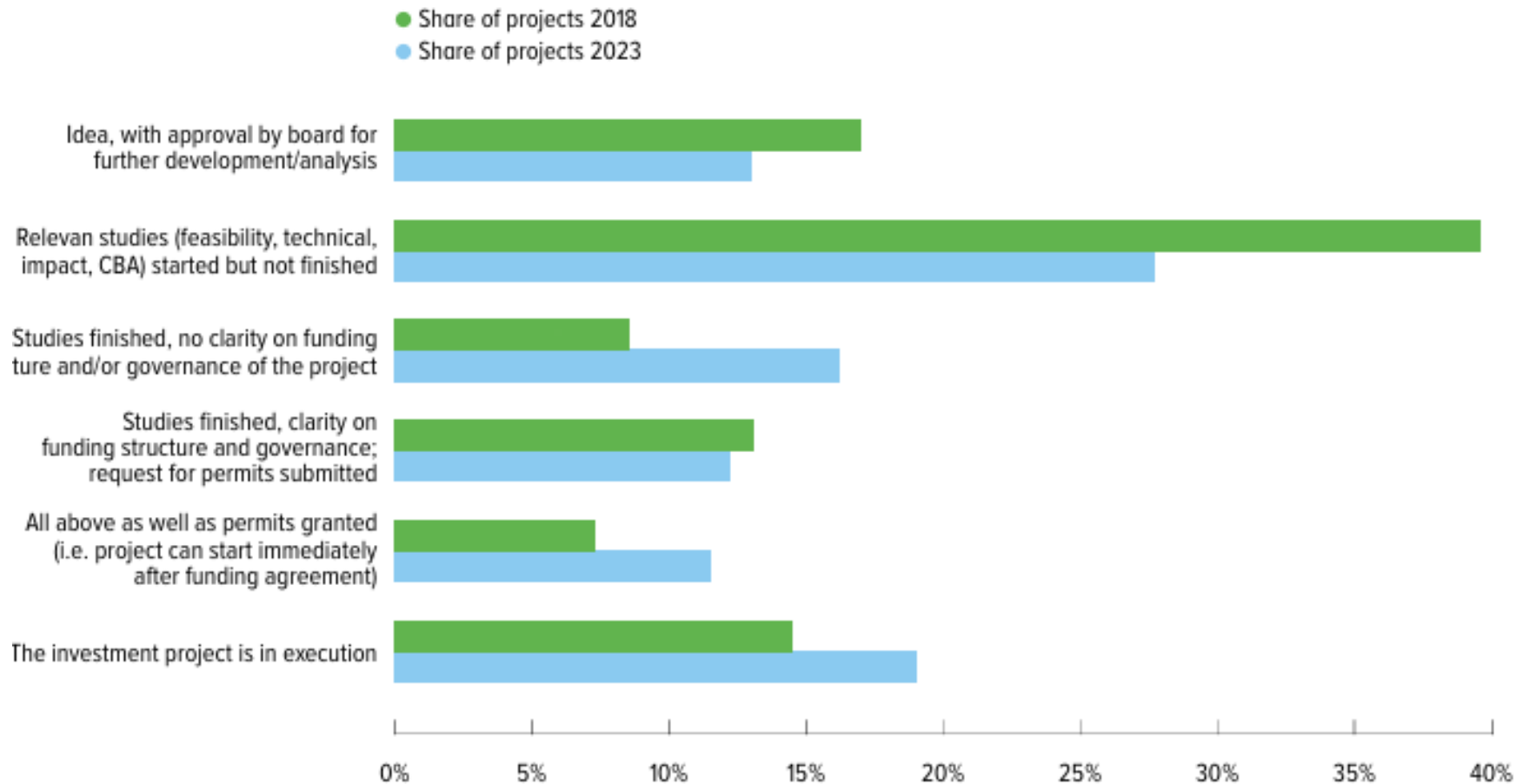
- A substantial part of PMBs have started offering new services related to energy and sustainability in the last five years.
- A much larger part of PMBs intends to start doing so in the coming five years (shore power, green electricity, clean fuels, pipelines).
- PMBs change their 'service bundle to accelerate the transition towards clean shipping and clean energy.

Investments in sustainability & energy transition

- Port investments cover both clean fuel provision for transport and clean energy production and use in the port industrial complex.
- Clean fuel for transport includes shore power (>70 of PMBs) and clean fuel bunkering or charging facilities for trucks and port equipment.
- Substantial numbers of PMBs invest in energy production and storage, pipelines, and energy management.

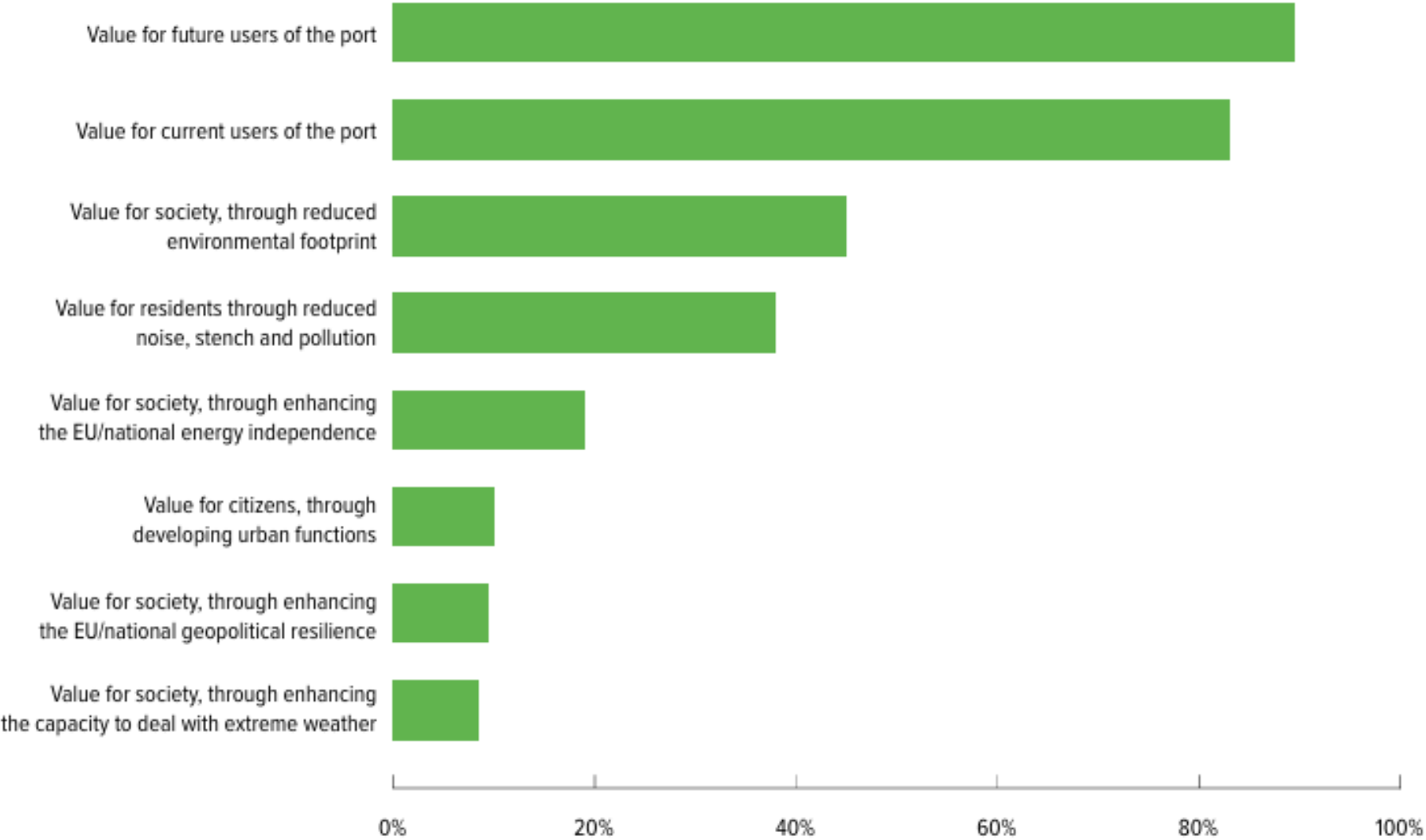


Projects in the pipeline are more mature than in 2018



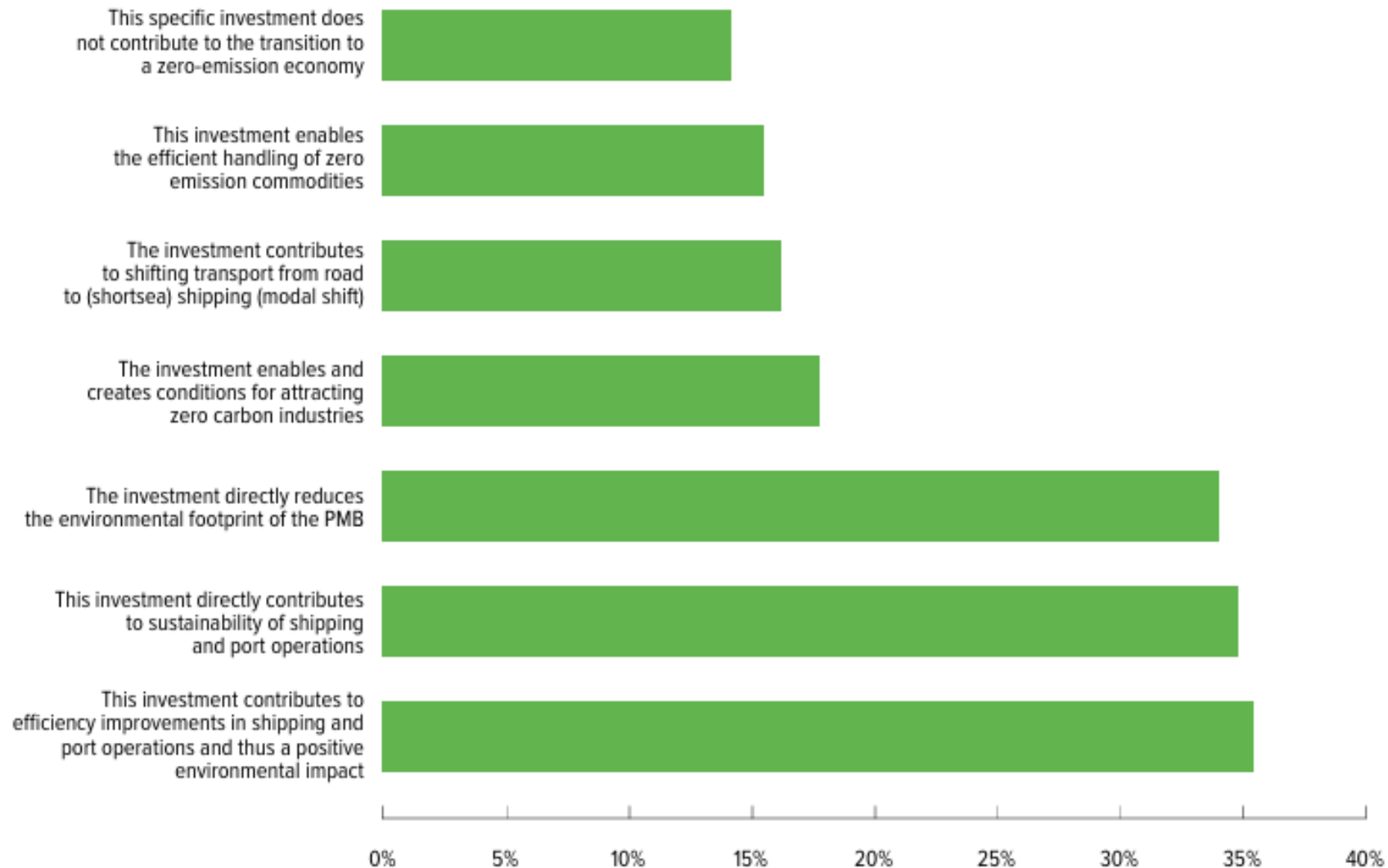
- Less 'ideas', and less projects for which studies are not finished than in 2018.
- More projects in execution phase of only pending funding agreement.
- PMBs have matured in terms of having identified new services to be provided and the required associated investments.

The value creation of investments remains broadly the same: covers both users and society at large



- The value creation of the investments in the pipeline is very similar to 2018.
- PMBs are focused on creating value for current and future port users (shippers, shipping lines as well as companies operating in the port).
- PMBs create 'value for society' through reducing the environmental footprint and reduced local 'externalities'.

Virtually all projects have positive environmental impacts



The projects not directly aimed at improving sustainability and clean energies generally also have a positive environmental effect, for instance through:

- Higher efficiency in shipping and ports
- Attracting zero-carbon industries to the port
- Promoting a shift to sustainable transport modes
- Enabling transport of clean energy commodities.

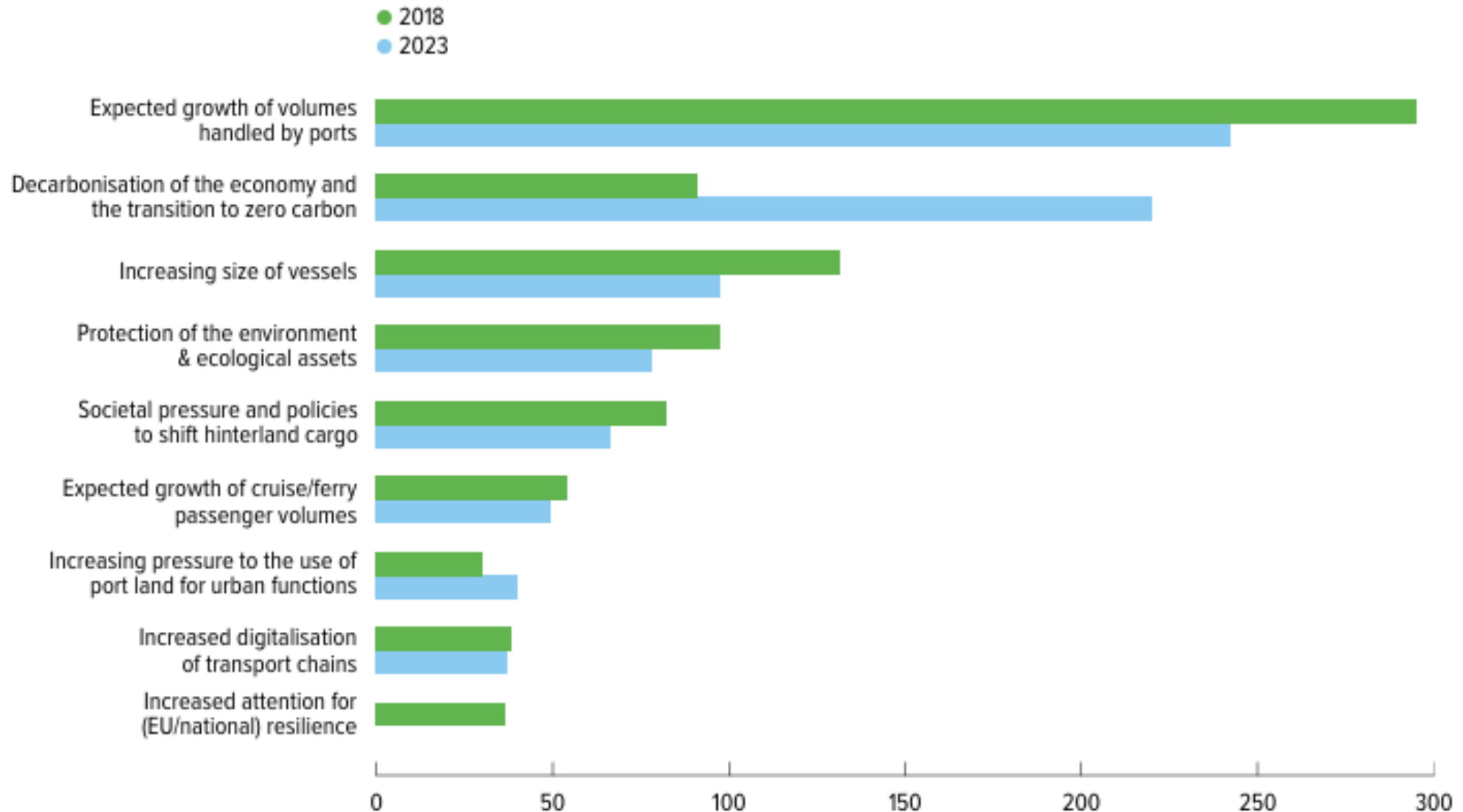
A conservative estimate of the investments of EU ports: about 80 €billion 2024-2034.

- The estimated investment pipeline of responding PMBs, excluding private companies in the port, is around 45 €billion until 2034.
- The planned investment pipeline expressed in € per ton of cargo is higher in comprehensive ports (with on average relatively small cargo volumes) than in core ports. This is intuitive, as in general the comprehensive ports are less focused on handling 'high volume commodities' like container, dry and liquid bulk.
- As the survey response covers around 72% of the EU throughput, a conservative rough estimate of the total investment volume of EU's ports, based on the volume handled in the EU suggests that the total investment pipeline of PMBs in the EU amounts to around 80 €billion for the period 2024-2034 .
- In addition to these investments by the PMBs, private companies operating in the port also will continue to make large investments in new facilities, such as terminals, warehouses and industrial plants, for instance for producing clean energy commodities like hydrogen, ammonia and biofuels.

	Core ports	Comprehensive ports
Average volume (million ton)	37	7
Average total investment volume (million)	780	425
Average investment per ton (eur/ton)	21	65

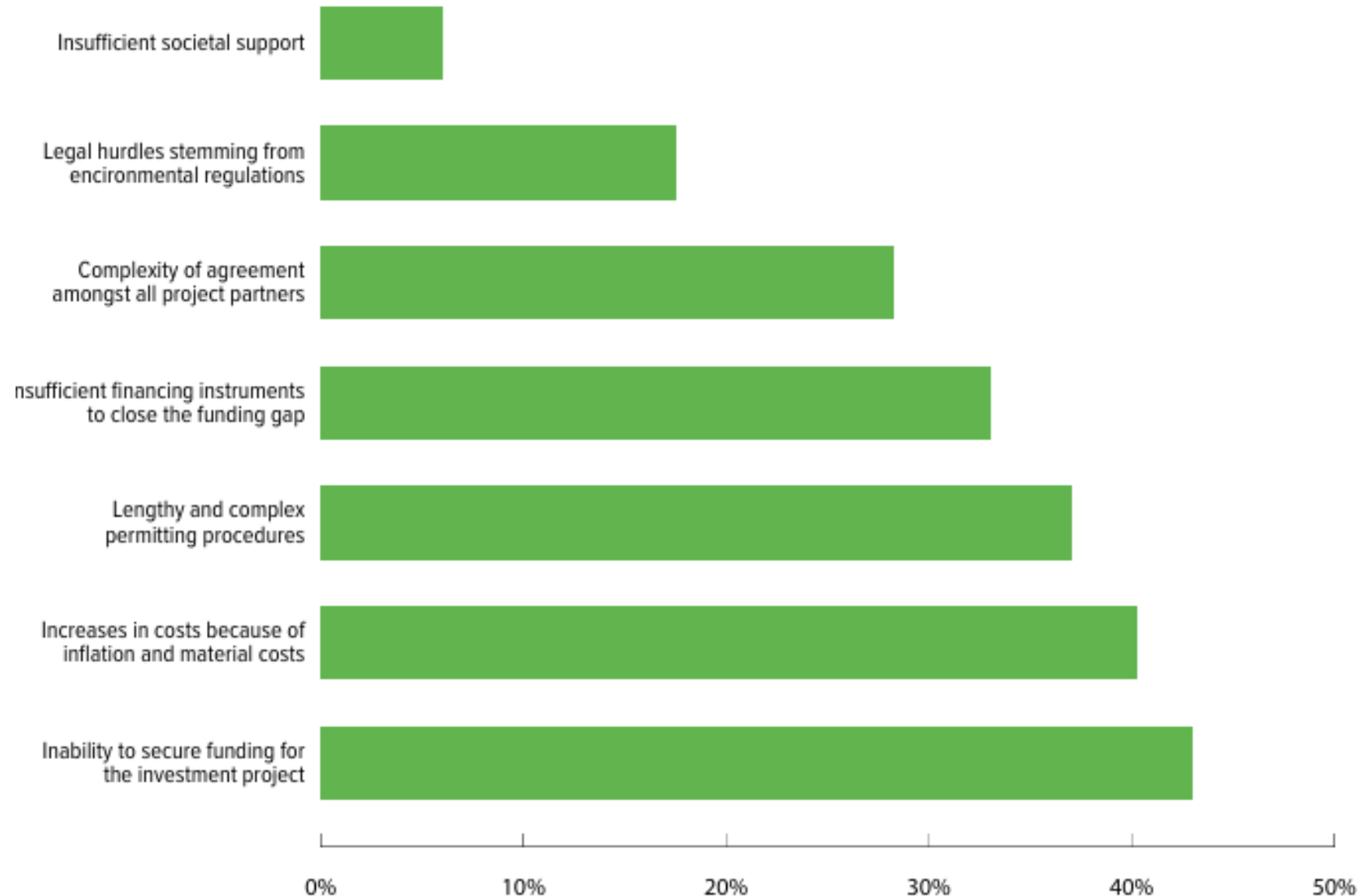
Source: Port investments survey

Drivers of the investments of PMBs; decarbonization increasingly a driver of investments

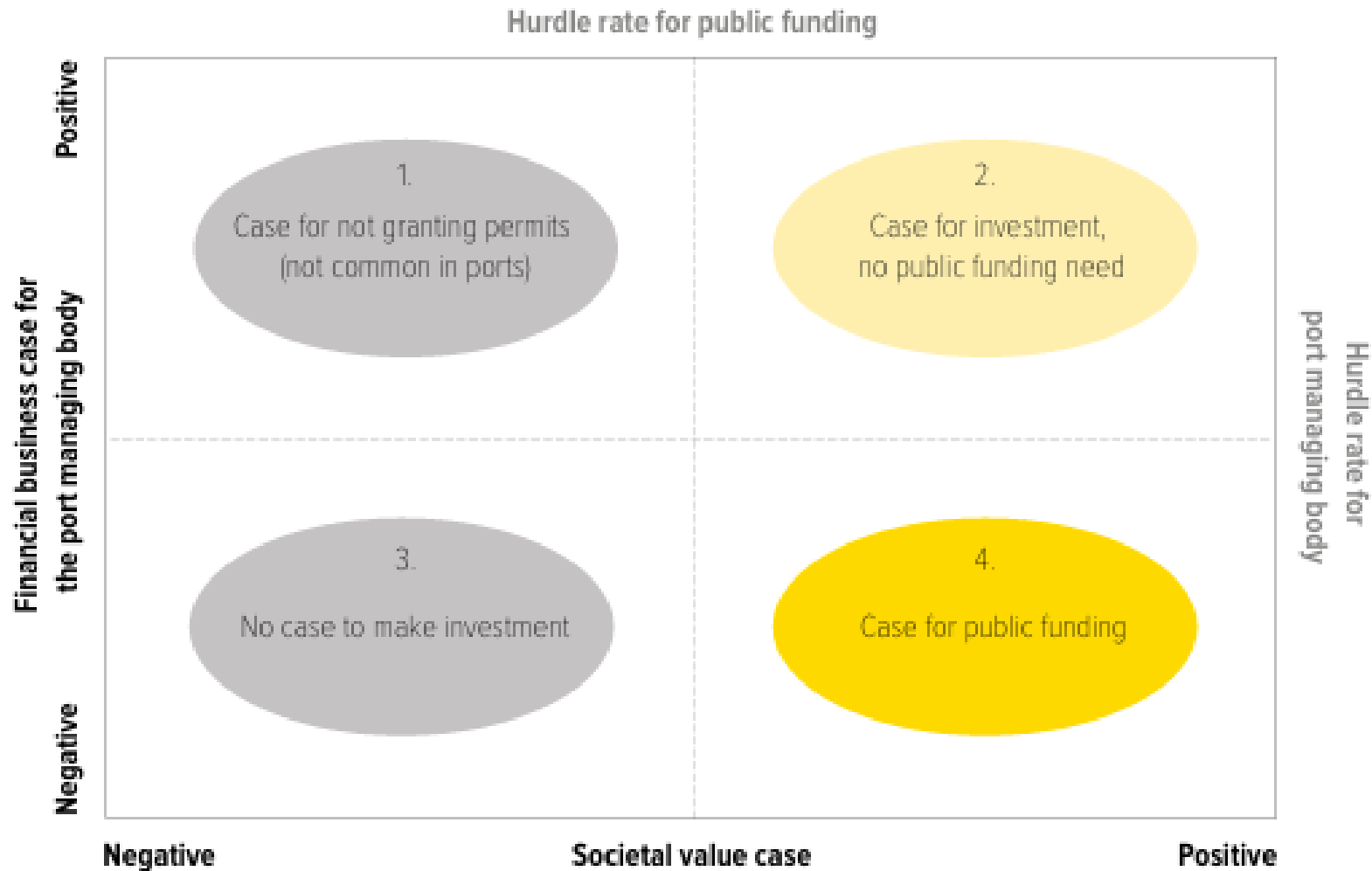


Funding and cost increases are the main bottlenecks

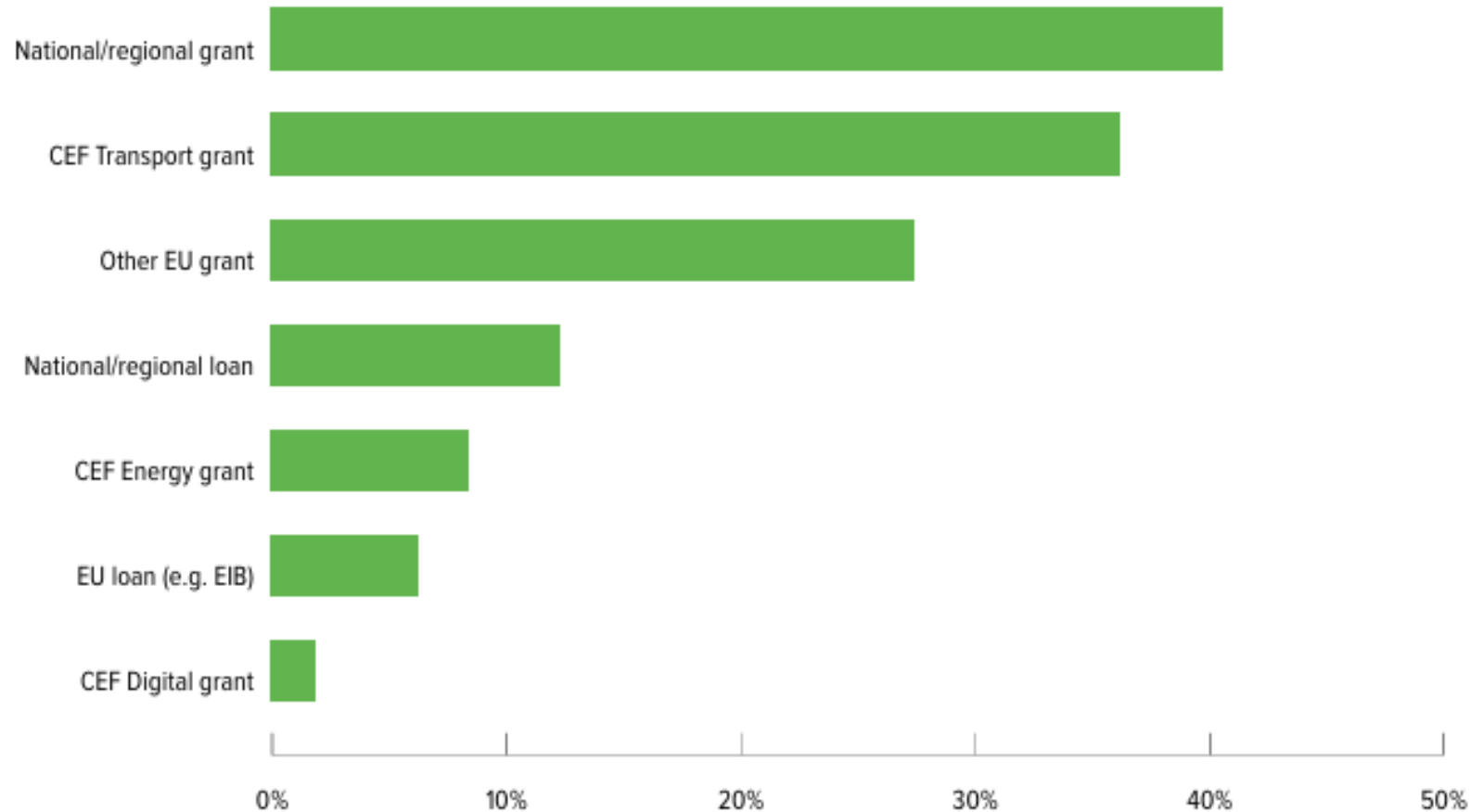
- The projects in the pipeline generally have 'societal support'.
- The two most important bottlenecks are bridging the 'funding gap' (i.e. securing the public funding required to be able to execute the project) and cost increases in construction.
- Organisational complexity is another relevant bottleneck.



Investment projects of PMBs may often be 'type 4' projects: justified/desirable but with a funding gap



Grants are an important element of the desired funding mix



- Around 40% of the projects aspire national regional grants
- One out of three projects aspire to attract CEF grants.
- (EIB) less important mechanisms than grants.
- A third of the projects in the execution phase have received a CEF grant, much less have received national funding.
- This suggests the PMBs expectations of state-level funding may only be feasible with (new) tailored funding mechanisms.

In conclusion

- PMBs continue to have substantial investment pipelines, a rough estimate for the EU ports is about 80 billion for the next 10 years.
- New investments arise in part because PMBs adjust to the changing landscape by offering new services (example: OPS).
- The current investment pipeline covers both clean fuels and ports as hubs for clean energy. The pipeline is more 'mature' than in 2018, in the sense that more projects can be executed relatively rapidly.
- The investments in the pipeline create value for (new) port users as well as society at large.
- However, bottlenecks remain, the most important ones relate to cost increases and dependence on partial public funding.
- Because of the societal value creation, PMBs generally have expectations regarding public funding.