



# Barometer Report 4

FOR OWNERS AND OPERATORS



# How's your port performing?

In this year's Barometer Report, we surveyed 200 port owners, operators, contractors and consultants on a range of industry issues, with the intention of finding out just how well ports are performing.

When we measure port performance, we look at a variety of KPIs, such as throughput, revenue and downtime, but we also wanted to know just how well ports are performing when these KPIs are compared to inputs such as investment, maintenance and support.

Over the last four years, since the inception of the Barometer Report, we have seen facilities take a defensive approach to investment – understandably working to protect facilities, given the economic climate they were facing – now though, the time has come for a more strategic approach. And given the “perfect storm” of challenges that this year's report reveals, as well the opportunities that are emerging, those that act now will prosper.

The report discusses:

**1** The key impacts on port investment

**2** The industry's future spending plans

**3** The obstacles to performance and competitiveness

**4** The specification knowledge gap

**5** The role of the supply chain

## Executive summary

A number of factors such as increasing vessel sizes, increasing environmental regulation and improved technology mean that there's a lot for port owners and operators to take in to account when keeping facilities up to date.

Fortunately, the outlook on expenditure is more positive than it has been over the last four years; offering ports the opportunity to act to boost performance.

Because of historic underinvestment, there are still obstacles to be overcome, and there's no quick fix available: facilities can't invest in the short term and boost performance in the long term.

However, by spending wisely and working with suppliers to optimise performance in the long-term; ports will be better placed to meet the needs of shipping lines on an on-going, reliable basis and enable shipping operators to better combat competition from other transport modes.

# The key impacts on port investment

**Already, ports are struggling to keep up with the demands placed upon them – increasing vessel sizes mean existing facilities need to upgrade quickly, but many don't think facilities are keeping up with the onwards logistics requirements of increasing vessel sizes and throughput.**

Alongside existing terminals, a new modern facility is emerging, with state-of-the-art infrastructure capable of accommodating the new breed of container ships such as the Maersk Triple E. It's no surprise then that container terminals are expected to have a large increase in infrastructure demand over the next five years.

Following closely behind container terminals in their infrastructure needs are LNG bunkering and small-scale LNG. However, a large proportion of respondents are taking a "wait and see" approach to the expected increase in LNG bunkering, which will follow the implementation of the 2015 ECA regulations.

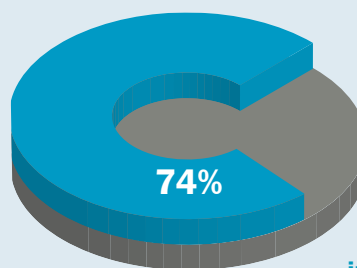
The research confirms the emergence of a "chicken and egg" situation: ports don't want to invest in infrastructure before LNG fuelled ships are built, and the ships aren't being built because there's nowhere to bunker. However, the implementation of the new regulations is imminent, and lack of infrastructure must not represent a barrier – ports must take proactive action now to upgrade facilities in time for the regulations.

**Whilst technology continues to advance, providing another route for facilities to take to keep up with the demands placed upon them, a disappointing proportion admitted to not using any automated systems at their facility.**

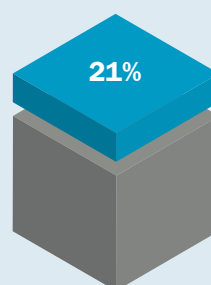
Automated systems such improve accuracy in monitoring and management, improving efficiency and allowing quick decisions to be made through real-time access to key data. Docking Aid Systems improve safety as the vessel comes in to berth, with the data they provide allowing jetty operators, pilots and ship masters to make early corrections to manoeuvres, long before a potential incident occurs.

Facilities that are not using these automated tools jeopardise efficiency and safety, and run the risk of becoming antiquated – they certainly won't be able to keep up with the new breed of terminal that is currently emerging.

The port landscape is evolving quickly, with increasing and diverse demand. Larger vessel sizes and more stringent environmental regulations mean facilities need to quickly upgrade their infrastructure. And with the ports surveyed this year reporting that they need to accommodate so many varied types of traffic, further complexity is creeping in to the picture.

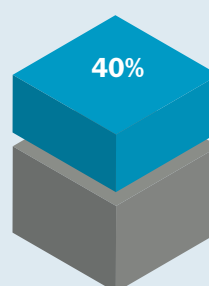
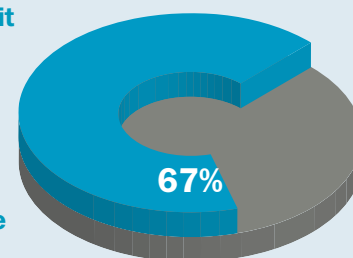


**74% think the need to update existing port terminals and facilities is the biggest challenge brought about by increasing vessel sizes**



**21% expect container terminals to enjoy the biggest increase in demand over the next five years**

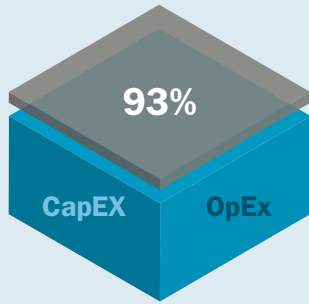
**67% are taking a "wait and see" approach to the expected increase in LNG bunkering, following implementation of the 2015 ECA regulations**



**40% don't think current port infrastructure is adequate to keep up with the onward logistics demands of increased vessel sizes and throughput**

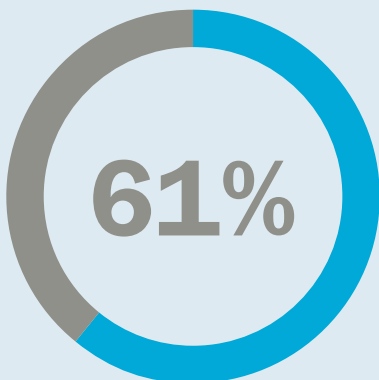
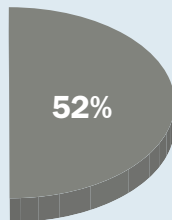
**19% don't use any automated systems at their facility**

93% of port owners and operators expect capital and operational expenditure budgets to increase over the next twelve months



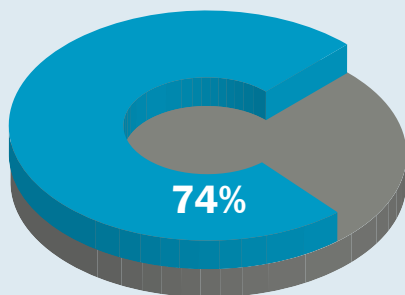
88% of port owners and operators expect operational expenditure budgets to increase over the next twelve months

When it comes to upgrading port infrastructure to accommodate larger vessels, 52% feel the industry is only keeping up reactively



61% of contractors and consultants claim clients are concerned by upfront purchase costs

74% are still experiencing unscheduled downtime



20% have suffered unscheduled downtime due to fender damage

Almost two thirds of respondents have upgraded fender systems in the last five years

## The industry's future spending plans

Despite the challenges that ports are facing, the overall picture is more optimistic. There is an optimistic view on investment emerging from both owners and operators, and the contractors and consultants surveyed: across both groups, there has been a massive jump in anticipation of greater capex and opex budgets.

But spending these increased budgets wisely – strategically – is what will really help ports to clear the decks of wasted investment and clear the course to increased efficiency.

The majority of respondents in last year's report believed that increasing vessel sizes meant ports would need to upgrade infrastructure, and this year, the majority of port owners and operators feel that the industry is only keeping up reactively, rather than responding well.

## The obstacles to performance and competitiveness

Although levels of unscheduled downtime have dropped, any amount is costly to ports in terms of lost revenue and damaged reputation.

According to contractors and consultants, port owners and operators still aren't placing the necessary importance on placing whole life value ahead of upfront purchase costs, when procuring mission critical equipment.

Fender damage was the most frequently cited factor contributing to unscheduled downtime – so let's take fenders as a microcosm of the wider port infrastructure. It seems the contractor and consultant view rings true.

Two thirds of port owners and operators have upgraded their fender systems in the last five years. Although some may be upgrading in order to accommodate bigger vessels or as part of wider refurbishment projects, fender systems are intended to have a design life of 25 years, so the fact that so many have upgraded their systems so recently suggests that installed solutions aren't performing as they should be.

The high incidence of fender damage and the subsequent downtime it causes is seemingly due to a lack of awareness on how to specify a truly quality system.

There is a need for more education – and the onus is on suppliers to provide it.

# The specification knowledge gap

**Supplier relationships need to get an upgrade. It's time for suppliers to accept responsibility for their products, not just up to installation, but over the entire product lifecycle.**

Perhaps as a result of the perfect storm of increased complexity and historic underinvestment, coupled with the opportunity brought about by bigger budgets and new technologies, facilities are now crying out for more external support. Suppliers should be involved in two ways: upfront in education, and over the product lifecycle.

Again, using fenders as a microcosm for wider infrastructure – there's a huge lack of product awareness that needs to be addressed. The performance and lifecycle of fenders vary dramatically based on the type of rubber used – natural or synthetic, and virgin or recycled – and within that, the compound composition of the rubber.

We surveyed contractors and consultants on the topic – a critical factor in guaranteeing fender performance and lifecycle. There were some shocking results.

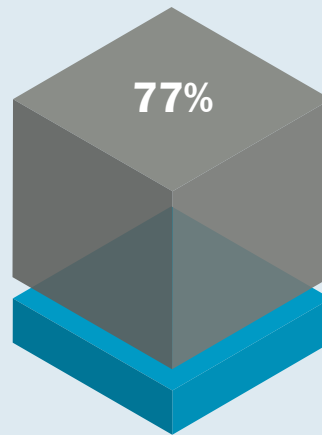
First introduced by PIANC, Velocity Factor (VF) and Temperature Factor (TF) should be applied to rubber fenders at the testing stage to accurately ascertain fender performance in the field, under varying compression times and temperatures.

VF and TF should be calculated and reported on a case by case basis. Each is dependent on the make-up of the rubber compound, and as such, there is no “standard” factor that can be applied to calculate and report performance under varying velocities and temperatures.

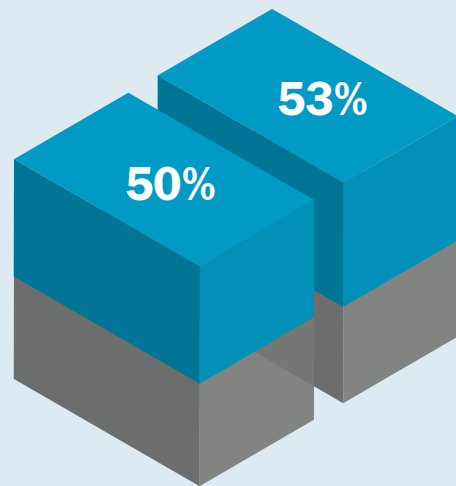
**So it's no surprise that the overwhelming majority say it would be useful to have a system to easily test suppliers' compounds: the need is there, and it's time for suppliers to react to it, evolving offerings to provide the required education and substantiation.**

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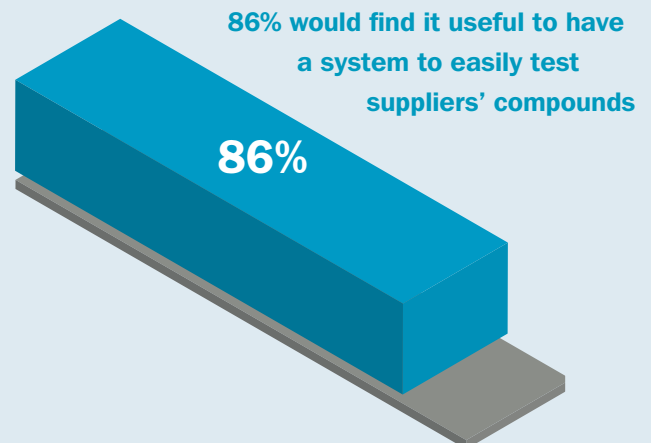
**90% of contractors & consultants trust an OEM over a trader #Barometer**



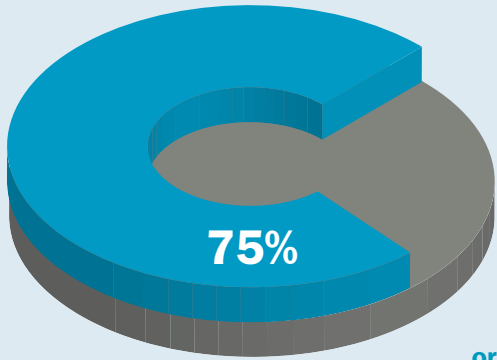
**77% of consultants and contractors don't know the correct ratio of ingredients in a superior rubber compound used in fenders**



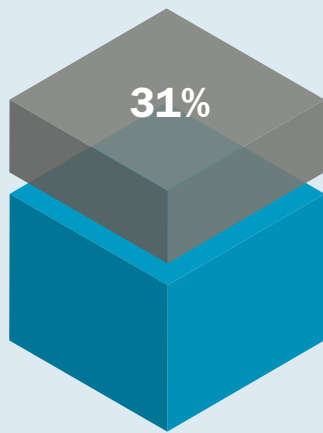
**50% and 53% (respectively) don't know if suppliers apply bespoke Velocity Factor (VF) and Temperature Factor (TF) to their rubber compound formulation**



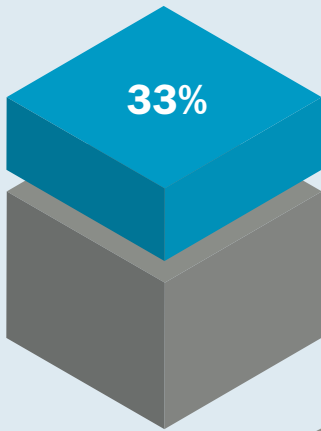
**86% would find it useful to have a system to easily test suppliers' compounds**



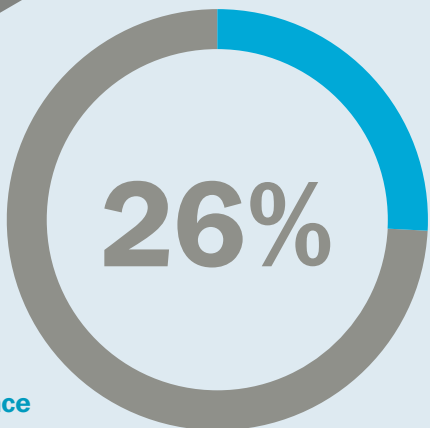
**75%**  
75% say it's essential or important to have the supplier involved in the maintenance/audit of jetty based equipment



**31%**  
31% say the current market offering for product maintenance training is poor



**33%**  
33% rate the current market offering in support for ongoing maintenance as poor



**26%**  
26% do not carry out inspections and maintenance on fender systems every twelve months

# The role of the supply chain

The first Barometer Report, conducted in 2010, found that the market was willing to pay for preventative maintenance. At that time, though, 37% of operators felt maintenance levels had decreased as a result of budget pressures. 60% of contractors and 51% of consultants agreed.

This year, the industry is also crying out for strategic supplier support – with maintenance a key area of demand. With an optimistic economic outlook, that's brighter than before – it's time to put whole life support firmly back on the agenda. And it's time for suppliers to deliver: maintenance is also seen as suppliers' weakest area. The dynamic must shift to involve the people that know the products best.

The market needs more support from quality suppliers, and port infrastructure equipment suppliers must evolve their offerings to be able to provide it, making themselves available strategically and operationally, to participate in involved discussions about maintenance and how best to optimize their products, to boost port performance.

Suppliers should be engaged at every stage. They should be in conversation with port owners and operators to understand the day to day needs of the facility, operational pain points and the native environment. They should be in touch with consultants to ensure specifications guarantee the highest standard of solutions available. Finally, they should work closely with contractors during supply and installation, to ensure that the high standards set out by the specifications are met.

**Most importantly, service should not stop once the product is installed. This is when suppliers really need to make a quantum leap to meet the needs of their clients, offering support in the areas that customers are looking for it, be that maintenance, training or other operational requirements. This way, suppliers are made more accountable for optimizing their product performance over its full lifecycle.**

# Conclusion

With an optimistic economic outlook, there's really no excuse for ports not to invest in solutions that maximize value strategically, rather than taking a short term approach that prioritizes purchase cost over long term value.

Investment in port infrastructure has been affected by the economic downturn, but as the market continues to strengthen, there's an opportunity arising for those that can get ahead of demand and invest strategically now. Those that don't will suffer in a bullish market, as new, modern terminals multiply and others quickly upgrade. The response to LNG as a marine fuel is a perfect example of a market that is inert and reactionary, rather than bold and deliberate.

Strategically, port owners and operators should look for ways to optimize the assets they own – and this means paying close attention to operational factors and prioritizing maintenance. Taking fenders as a microcosm for wider infrastructure, it seems that owners and operators still aren't placing enough emphasis on ensuring high quality performance is specified. Contractors and consultants lack guidance, and the resultant downtime due to fender damage speaks for itself.

Over the last four years, ports have had to batten down the hatches, and largely have made the most of the situation they were faced with. However, the mist is beginning to lift, and port owners and operators have the chance to begin to look for ways to navigate out of the perfect storm of underinvestment and increasing demand and complexity.

Although the market is beginning to move in the right direction, owners, operators, consultants and contractors alike should work more closely with suppliers. Supplier expertise should guide procurement decisions, and technology should enable owners and operators to traverse the obstacles to strategic investment and look forward to plain sailing ahead.



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