

# Port-centric Logistics



Potential impacts on the UK logistics market



## Need for resilience

We live in times of challenge and change. Some of this change is a huge accelerated evolution of trends we probably already knew but hadn't lived. Whilst in January 2020 you appreciated that flexibility and digitisation were becoming increasingly important. But if someone asked you to 'jump on a Zoom' you're unlikely to have known what that was and possibly called HR.'

Some change is new and transforming. The retail sector, for example, has seen dramatic changes in its business model almost overnight. Changes that mean its ways of working have altered decisively and for the long term.

Ports see and experience this too. As the vital gateways for the UK's global supply chains (95% of everything that arrives or leaves the UK does so via our seaports) we are part of the change ourselves and key providers of the solutions for others.

Existing occupiers are already experiencing the benefits, economic, operational, environmental, of 'port centric' operations. But current experience and future trends reinforce the importance of these advantages.

The word 'resilience' has gained greater importance for all supply chain professionals through the COVID-19 pandemic. Port locations are ideally suited for nearshoring facilities, given their proximity to points of entry, inventory management systems and transport links. Brexit and the inevitable additional frictions for EU trade flows also boost the need for resilience, with many ports already experienced in border processes.

The environmental imperative is, rightly, ever increasing. With sea miles much more carbon efficient than other freight modes and the reduced handling requirements of immediate proximity, ports have a compelling green proposition.

But what doesn't change is the need for solutions to deliver cost efficiency. With one of the most competitive ports sectors in the world, ensuring propositions for occupiers and customers deliver value is built-in in the UK.

As an island nation, ports have been key to the UK for millennia. At this historic and challenging time for the UK their importance has never been higher. The operators of the UK's ports have the ambition and capability to step up to the challenges and deliver solutions for customers, occupiers and the UK.



**Tim Morris**  
Chief Executive  
UK Major Ports Group

# Traditional logistics vs 21st century demands

According to Michael Carson, Group Commercial Director at Libra Europe Consulting, as the existing supply chain model changes, port-centric logistics is growing in profile

The UK logistics property market has gone through a seismic shift in recent years as the advent of online retail has increased the demand for warehouse space in the UK. The average amount of warehouse space taken on new leases has risen from 15m sq ft per year to 32m sq ft per year, a rise of 113% since 2007.

The UK retail supply chain has evolved over the last three decades as

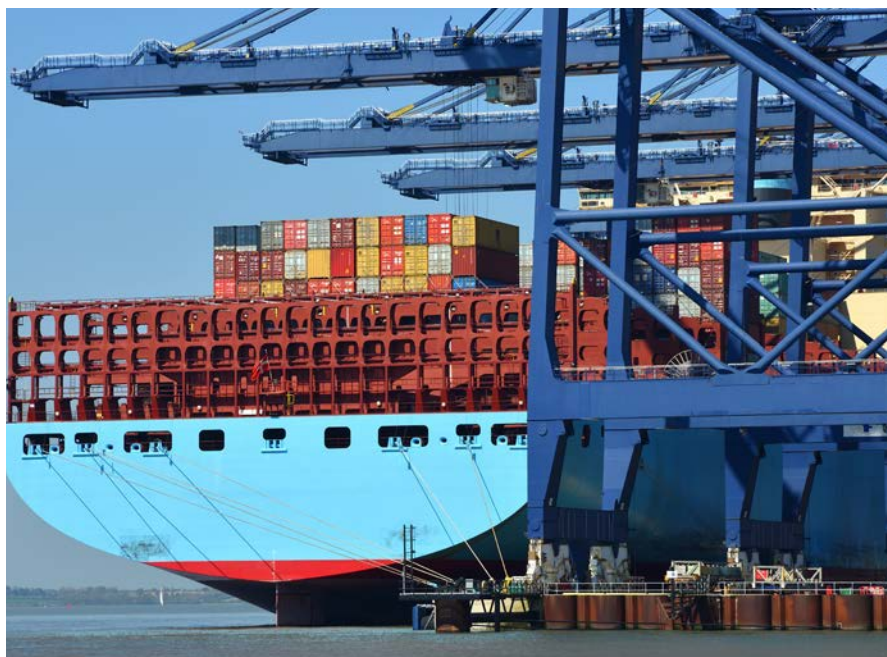
store networks grew and retailers built their logistics networks in the most efficient way possible. Typically, this would involve taking warehouse space in the centre of the country, otherwise known as the Golden Triangle.

The benefit of this model is that the majority of the population can be reached within a four hour drive time. In bound inventory movements are also

**FIG 1: Amount of goods imported into UK ports over the last 10 years**







key to this as product is often imported by container on vehicles from the three major ports of Southampton, Felixstowe and more recently London Gateway.

This supply chain model is clearly still relevant today as 2019 has seen 39% of all new warehouse leases taken within the Golden Triangle, the highest year ever recorded and up from 24% in 2008.

Since the turn of the millennium the concept of port-centric logistics has gained in profile within the supply chain community, driven by a number of high profile retailers such as Tesco and Asda, choosing to locate large distribution centres at port side locations.

Port-centric logistics allow you to store your shipment at the port thus

reducing the number of handling stages throughout your storage and distribution process, in theory saving both time and money. The concept potentially reduces road miles and empty running of HGV's which also has a direct environmental and commercial benefit.

The disruption associated with Covid-19 has challenged supply chains across the globe. A recent McKinsey survey has revealed that a huge majority of supply chain leaders are planning to increase their supply chain resilience as a result of the pandemic.

McKinsey suggest actions to build resilience include dual sourcing, higher safety stock, near shoring of suppliers and production and regionalisation. We see this shift towards regional supply chains and nearshoring increasing the role of short sea shipping whilst accelerating the interest in port-centric logistics.

This paper examines the concept of port-centric in greater detail and presents two UK case studies where port-centric logistics has the potential to evolve and change the dynamics of the UK logistics property market.

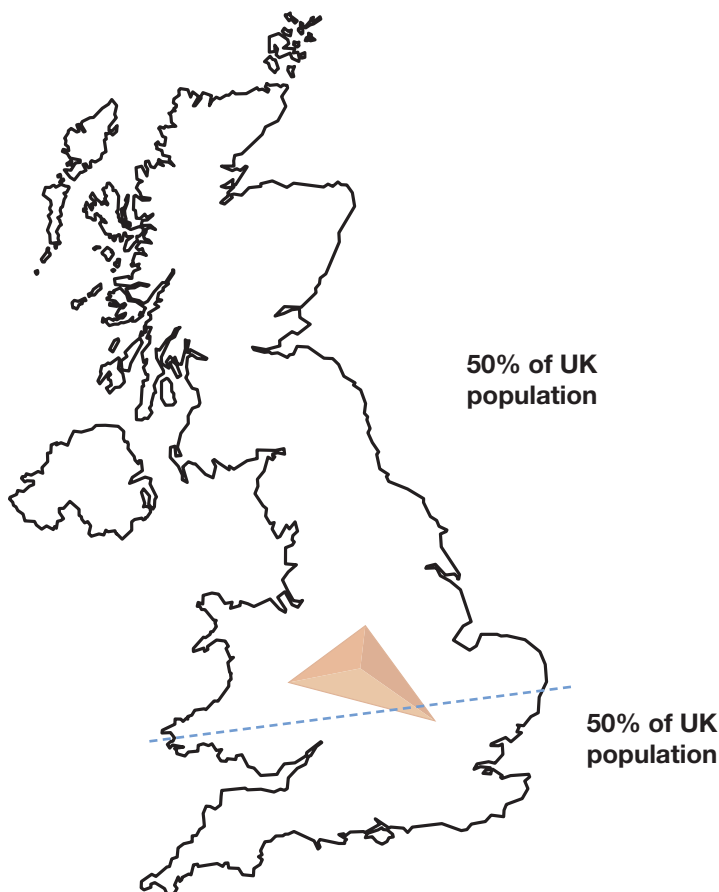
The last 20 years have seen a dramatic shift in retail as UK consumers have adopted internet shopping on a grand scale. The landscape for businesses has changed with high streets no longer the go-to option for a large section of the UK consumer base and as such the supply chains required to meet this demand have developed accordingly.

Much of the focus in designing these supply chains has been around optimising the 'Final Mile' of delivery where in effect consumers have driven a huge rise in the need for low volume, multiple drop solutions, a complex and expensive undertaking. Whilst this will remain an area for constant innovation and improvement it is not the only part of the chain that needs updating.

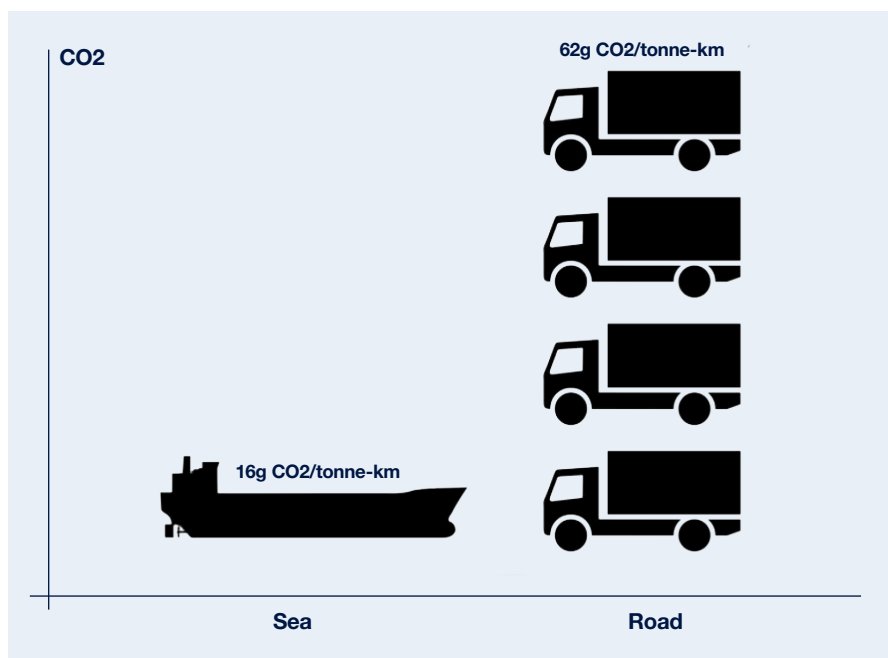
In the UK, logistics has been focussed on the larger retailers Regional Distribution Centres (RDC) and National Distribution Centres (NDC) networks and delivery to large retail stores or centres. This has naturally created a focus around the 'Golden Triangle' of Nottingham, Bedford and Kidderminster for warehousing with a huge concentration of retailer, supplier and 3PL facilities.

The emergence of this Golden Triangle of logistics was a logical output of late 20th century centralisation, providing access to 90% of UK population, and therefore major retail outlets, within four hours. However, product sitting in these 'optimally located' facilities is far from 'four hours from the consumer' as there are

**Map two highlighting distribution of UK population**



**FIG 2: Amount of CO2/tonne-km released by Sea & Road freight shipment**



traditionally 2-3 further nodes within the supply chain before this product then hits the shelves, let alone consumer.

#### And then there's the upstream supply chain to contend with...

The importing of goods to the UK represents around 25% of GDP and, based on data showing the amount of units imported in the last 10 years, over 53% of imported goods landed into south/south eastern UK ports with Dover and Felixstowe accounting for 19% and 10% respectively followed by London (9%), Southampton (8%), Portsmouth (4%) and Medway (3%)

In a world where goods were sourced at a cheaper unit cost overseas, imported in bulk and shipped to a central distribution centre to be broken down and consolidated in to mixed, store-ready loads, this model made reasonable logistical sense. However, the rise in demand for single item fulfilment on a near instantaneous basis now makes less logistical sense.

If time pressures weren't enough, the cost and congestion pressures are increasing while the environmental impact of this model is coming under more scrutiny. The split of UK population North to South in relation to the traditional import and UK-centric DC hubs adds further fuel to the fire.

In broad terms, 50% of the UK population is located south of the Golden Triangle. Couple this with the aforementioned ports of entry for a significant portion of UK consumption and the inefficiencies become self-evident.

“Transporting container-by-container from the South to the North vs. landing thousands of containers directly into the northern market is environmentally illogical”

Therefore, this import to first offload leg of the chain requires some new thinking, whilst less immediate than the obvious pressures for final mile solutions, it undoubtedly presents both a challenge and an opportunity. Currently more than half of freight imported through the southern ports has a final destination north of Birmingham.

So why import to a southern-based port only to transport (primarily by road) to DC's in the north, on a container-by-container basis?

#### Road Freight four-times more damaging environmentally than sea...

On a like-for-like basis, transporting freight from southern UK ports to the north via road is nearly four times more damaging to the environment than the equivalent sea freight shipment (Road: 62g CO2/tonne-km vs Sea: 16g CO2/tonne-km).

The logic is irrefutable, certainly when it comes to servicing the northern UK market. Transporting container-by-container from the South to the North vs. landing thousands of containers directly into the northern market is environmentally and commercially illogical. Not to mention the additional congestion on UK roads caused from road freight vs. sea. Shipping container volume direct to northern ports to service the north consumer base clearly provides a far more environmentally friendly option than the traditional road haulage approach.

Ports such as Hull provide not only a northern entry point into the UK to mitigate the above environment impacts but also offer a plentiful supply of land and labour without the power shortage headaches. Developments to the road networks lead to/from Hull mean five of the UK's biggest cities are within two and half hours of Hull providing an excellent foundation for a port-centric approach to 21st century importing and fulfilment into the UK.

The same approach applies to the London Gateway with the very centre of the UK largest market and over 40% of the UK population within 60 miles of the ports' doorstep, there is no better place for a port-centric approach to fulfilment in the UK.

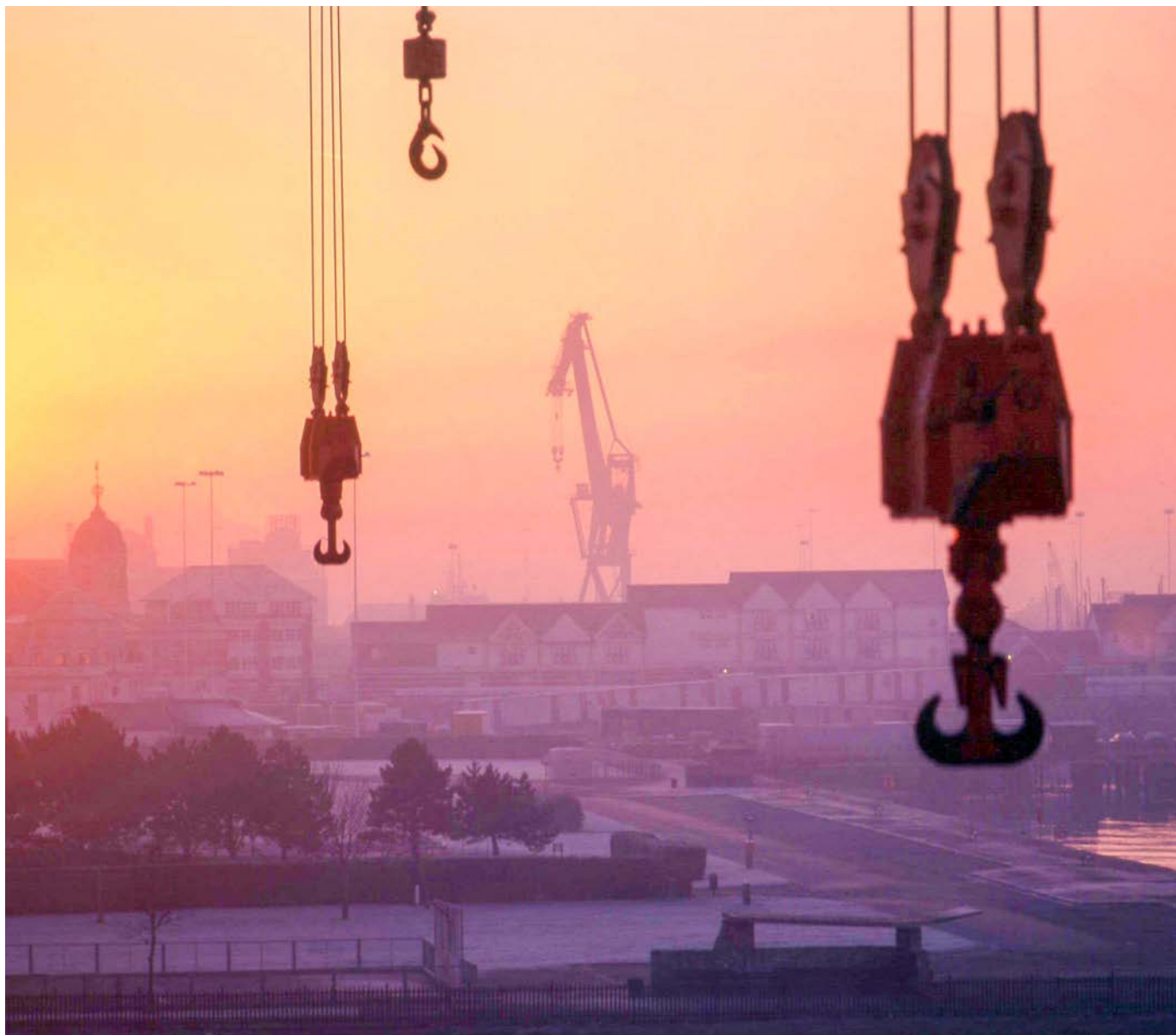
Granted, the cost of land and accessibility of labour within London Gateway requires further consideration than its' northern counterparts, however the benefits in shortening the supply chain and providing a more efficient method of meeting growing consumer demands are endless.

In addition, rail freight routes may also provide a more environmentally friendly solution for cross UK freight transportation producing 22g CO2/tonne-km, 65% less than road. Ports including London Gateway are uniquely positioned to provide access to the national rail network, offloading containers here and utilising the rail network to transport goods to both the north of UK and the 'golden triangle' could potentially prove fruitful in efforts to mass distribute.

#### 85.4% of population within four hours...

Reverting to the earlier point of "90% of the UK population being within four hours of the Golden Triangle." Taking Rugby as a centre point for this long-standing logistics hub, 84.2% of the UK population is within a 170-mile reach (approximately four-hour drive).

When looking at London Gateway and the Port of Hull, the combination of these two ports offer 85.4% of the UK population within 170 miles.



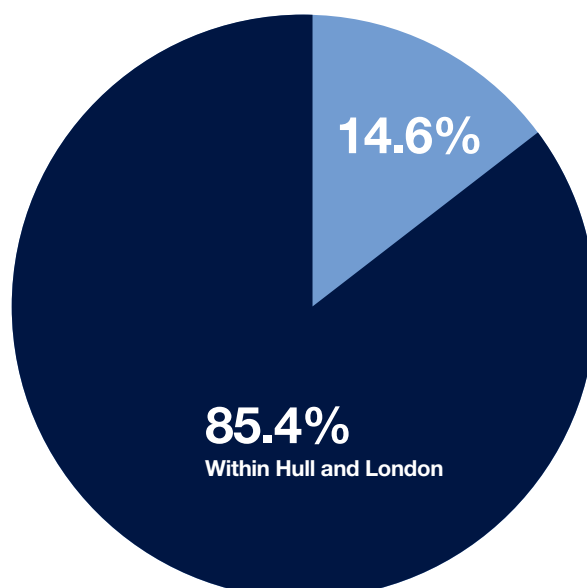
This demonstrates that there are alternative methods to maintaining proximity to end-consumer whilst taking a holistic view at the end-to-end supply chain to maximise overall effectiveness.

Fast-fashion retailers have cottoned on to this thought process in recent years. Albeit via air freight, the majority of their overseas items arrive into Doncaster and the East Midlands. The necessity to shorten the supply chain in order to enhance the ability to react to market trends within the fashion industry has led to this use of air freight.

The subsequent use of northern locations to enable the final leg of this shortened supply chain adds further weight to a different way of thinking when it comes to the use of UK ports for sea freight.

**If I were a new entrant distributing into the UK market from overseas...**

**FIG 3: Percentage of population within 170 miles of the Port of Hull and London Gateway**





## Impact of free ports

In efforts to boost trade post-Brexit, the UK Government has plans in place to establish up to ten 'free ports'. Essentially free ports are designated areas with little to no tax in order to encourage economic activity, whilst geographically located within a country they exist outside its borders for tax purposes. The area allows companies to manufacture, import undertake value add activities and re-export goods free of tariffs deferring payment until their products are moved elsewhere or even avoid them altogether should they bring in goods to store or manufacture on site before exporting them or 'importing' them into the UK.

Varying forms of tariff flexibility and tax measure deployed by the Government would provide incentives for private business investment, whilst carefully considered planning reforms would facilitate construction along with further funding for infrastructure improvements.

The ideal result is that freeports would act as hotbeds of innovation to form business clusters through fostering the conditions that will attract new companies, investors and innovations. This would effectively 'level up' local communities by improving productivity within our port regions, increasing employment opportunities, whilst also supporting smoother international trading activity.

Boris Johnson, a free port advocate, claims such ports drive economic growth and provide thousands of high-skilled jobs in left-behind areas. Mace construction group's independent research suggests free ports could create 150,000 new jobs and add £9 billion a year to the UK economy whilst simultaneously narrowing the north-south divide.

However, these areas where normal tax and customs are heavily softened or don't apply at all have caused many to claim the areas could facilitate money laundering and tax evasion whilst the rise in tax breaks could cause a loss of revenue for the Treasury.

In addition, whilst 'free ports' have been praised as a solution for solving regional inequalities, it has been noted that the incentives given by locating in a free port may also promote the relocation of activity from one part of the UK to another exacerbating the problem and mitigating the benefits of free port implementation.

Yet, it seems that with no certainties on the nature of the deal with Europe following our departure, free ports have been identified as a possible solution to keep imports and exports positive for the UK through fostering conditions that will attract new businesses, investors and innovations.

The traditional solutions would point any new entrant down the legacy route of focussing on the final mile customer, plumping for a central DC to 'cover all bases'. However, there are a number of angles by which to challenge this.

Simply take a financial lens to this taking a 500,000 sq ft unit at £6.95 psf in the golden triangle would provide a 'baseline' rent and rates cost of £4.73m pa. Compare this to splitting the requirements across two sites of c. 250,000 sq ft in London Gateway at £9.50 psf and the Port of Hull at £5.50 psf - On a like-for-like basis this would yield an 1.72% rent and rates saving, which over the course of a 25 year lease would deliver a saving of just over £2m pa. A two-site model also provides further flexibility in serving the UK market and could yield opportunity to shift the balance of distribution further north leveraging further financial benefit.

Clearly, there are a myriad of other costs to account for including labour and transport but it is clear to see why a port-centric model appeals from a property perspective alone.

Furthermore, a two-site, port-based model removes at least one node from the supply chain; The implications on flexibility, speed of service and impact on inventory within the overall chain could all prove significant to a number of industries.

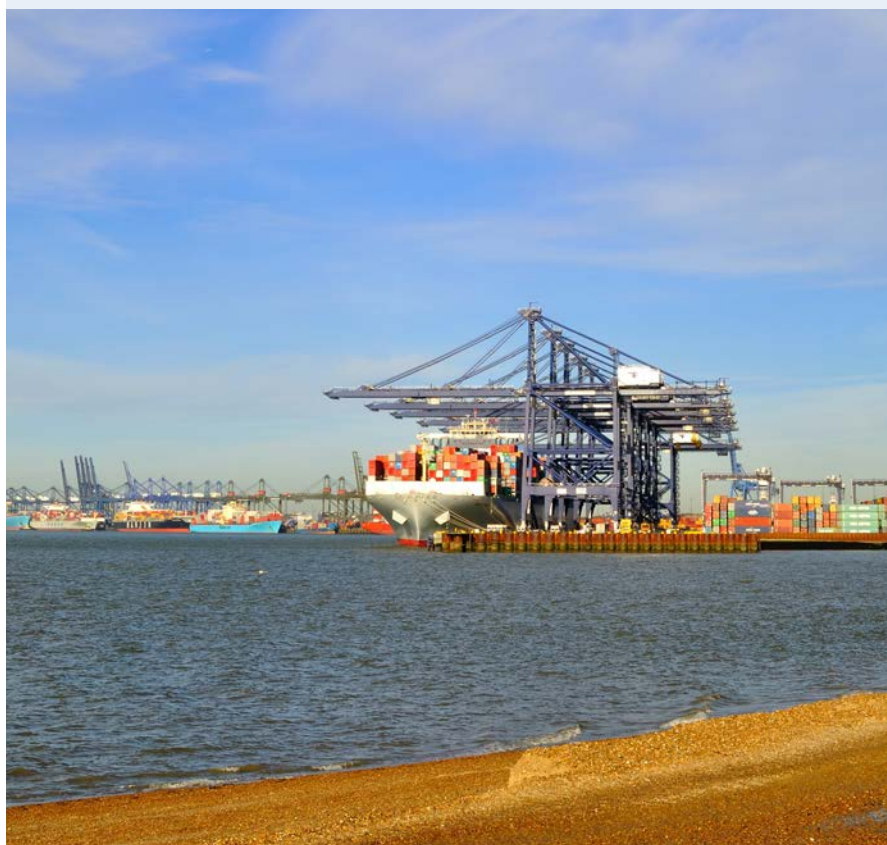
The ability to respond to consumer demand upstream will invariably support the 'final mile' dilemma; taking time out of the chain upstream gives further 'breathing room' downstream whilst enabling distributors in to the UK to optimise their inventory policies with less inertia around the traditional peak and trough nature of importing.

### Focus on end-to-end supply chain

Sourcing the right quality of goods at the right cost in container load volumes is relatively easy in the overall supply chain. The complexity arises downstream when fulfilling a growing trend towards single unit demand in a market that expects it within minutes of closing their App.

Conquering this conundrum requires more than just a focus on the final mile of the supply chain; it requires a closer look at the end-to-end and in particular, the point at which the goods hit UK shores. Ensuring the decoupling of hundreds of containers at the right point, as close to the final customer as possible, is the key to leveraging a cost effective, environmentally friendlier supply chain.

Applying some lateral thinking thereafter along with a progressive move away from the traditional approach will deliver both efficiency and effectiveness in meeting consumer demands in the 21st century and beyond.



# Humber International Enterprise Park



## Overview of opportunity

Humber International Enterprise Park (HIEP) is strategically located adjacent to the Port of Hull on the North Bank of the River Humber, the UK's 'Energy Estuary'. The site has an area of 183 hectares (453 acres) of development land with potential quayside access to the adjacent Port of Hull via a dedicated rail road link connecting the site into the respective UK networks.

The site is one of the largest allocated industrial employment development sites in the UK. An outline planning application for circa 400,000 square metres of logistics and manufacturing space is due to be approved in Q4 2020.

ABP has the in house financial resource, expertise and the experience to design and build bespoke manufacturing and logistics facilities from single buildings to multi-let units.

The site is fully serviced and grant funding is available.

## Supply chain drivers and potential cost savings for locating at Hull

The Department for Transport published the annual statistics on the UK's major ports which confirmed the Humber ports combined are the biggest port complex in the UK by a factor of two. The Humber, accounts for 23% of all goods travelling through English ports. It adds £7.6 billion GDA to the UK economy per year and supports 35,000 jobs across the North.

The Port of Hull is just 20 miles (32km) from the North Sea. The port is well connected by dual carriageway road links to the M62 and then M18 and M1, to service the whole of the British Isles. In addition the port is connected to the main rail network and inland waterways system. We see rail access as becoming increasingly important to operators as they look to reduce costs and their carbon footprint.

The Port of Hull is the heart of the offshore wind sector on the Humber, the UK's energy estuary. In 2017, Green Port Hull, was opened at the port, a £310 million joint venture between ABP and Siemens to create a renewable energy hub with world-class offshore wind turbine blade manufacturing, assembly and servicing facilities as its centrepiece. The port is strategically located to serve the Round 3 and Round 4 wind farm zones

In addition, the port is the UK's leading softwood timber port and has regular ferry and container services connecting mainland Europe, and beyond. Multi-million pound investment in the Hull Container Terminal has cemented the city's position as a leading gateway for trade, offering reliable and resilient supply chain solutions.

From a labour perspective the North East has the highest number of job seekers in the UK at an unemployment rate of 5.4% and the greater Hull area has a working

population between 16 and 64 of 625,000 workers – 85% of which are trained with NVQ2 to NVQ4+.

New research commissioned by Associated British Ports (ABP) has revealed the major benefits of choosing Hull and Immingham for moving cargo between key logistics hubs in the UK and EU, demonstrating why Humber ports offer a better deal for shippers, drivers and the environment.

A comparative analysis of short sea import and export routes to and from the UK conducted by the University of Hull Logistics Institute has demonstrated the significant time, distance and environmental benefits which can be achieved by choosing the ports of Hull and Immingham instead of the Port of Dover, as well as other ports located on the east coast.

The study identifies major logistics hubs located within the 'Central East-West' corridor of the UK, including destinations such as Leeds, Doncaster and Manchester. By using the Humber instead of Dover, the average reduction in distance travelled to the selected locations was 178 miles, with an average cut in journey times of 5hrs 10mins, and an average saving of 458kg CO2e per load.

The Study estimates that moving 10% of cargo from the Port of Dover to the Humber could save in the region of 100,000 tonnes of CO2e every year when travelling to locations within Central East-West Corridor.

University of Hull Logistics Institute's study findings have been reinforced by a report delivered by leading consultancy MDS Transmodal. In their report MDS compared the distances and time between the UK's five principal warehouse clusters, located in the Midlands and Northern England, and other ports on the east coast, including Dover in the south east. The report shows that Hull and Immingham are the only ports which are within four hours of each cluster.

In terms of journey time and distance, Hull is the closest east coast port to Liverpool/Manchester and Leeds/Yorkshire clusters, closely followed by Immingham. Immingham is the closest port to the South Yorkshire/East Midlands and West Midlands clusters, followed by Hull. Tilbury, owned by ABP's competitor Forth Ports, is the closest to the Northamptonshire cluster.

In the last two years, ABP has already noticed a shift in trade volumes with cargo originally destined for southern ports, such as Dover, increasingly moving north as trade partners look at alternatives to mitigate any difficulties the more traditional routes may experience in the future.



# DP World London Gateway

## Overview of opportunity

DP World London Gateway is the UK's most productive port covering a site of 1140 acres in the South East of England just 28 miles from Central London. Currently, the port has three deep water berths with a fourth under construction and can handle 2.1m TEU a year with a capacity to double, it is connected to 115 other global ports through 23 weekly services.

The port is well prepared for whatever is the UK's future trading relationships with the rest of the world will be given that 90% of current throughput is from outside the EU. This means that systems and processes are already in place.

The port site can accommodate warehouse development up to 9.25m sq ft and is regarded as the largest facility of its kind in Europe. The logistics park also benefits from a Local Development Order meaning that planning permission for future development can be obtained within 28 days.

## Supply chain drivers and potential cost savings for locating at London Gateway

For products where speed to market is key using London Gateway for inbound UK distribution can offer a competitive advantage when compared to distributing from traditional locations in the Midlands.

Within just 30 miles there are over 3.5 million unique delivery addresses and by choosing to locate close to those delivery addresses many efficiencies can be gained.

London Gateway is a modern port with state of the art infrastructure, this means that less days are lost to weather disruption compared to other ports and users of the port can expect to load and unload their vehicles with a 35 minute turn around – 50% faster than other ports. The port also has a dedicated rail freight terminal where 45 services to other locations within the UK run each week.

Occupiers of London Gateway are already seeing supply chain efficiencies. For example, 14% of the current throughput of the port is for refrigerated produce meaning that 65% of the population is closer than in previous supply chain models. This reduces the need to run vehicles empty and can help reduce Carbon impact by as much as 1.38kg per mile.

The occupiers at London Gateway also benefit from lower demurrage charges due to the private estate roads on the site and the fact that London Gateway can offer an integrated service, which it permits out of gauge cargo.

Case study material from occupiers on site demonstrate the geographical location and lower operating costs on site can amount to savings of £1.75m per year based on moving 100,000 pallets of refrigerated produce.

From the perspective of labour, London Gateway has over half a million potential workers within a 30 minute drivetime. The port also has a significant labour pool of contracted workers meaning the port is well equipped to "flex" to demand and seasonal throughput.





# Conclusions and take-aways

It is clear that the continued structural change within the UK retail market is continuing to have an impact on the supply chain. The Golden Triangle still has relevance, as demonstrated by continuing high levels of demand for new warehouse space.

However, as retailers and manufacturers work to obtain efficiencies, on both cost and sustainability it is clear that distributing the right products from the right locations will become increasingly more important.

Port-centric logistics offers companies with inbound UK supply chains for fast moving consumer goods the ability to gain such efficiencies.

COVID-19 has demonstrated that the current 'just in time' supply chain model has little resilience, which has prompted

a shift towards more of a 'just in case' scenario. As a result we have seen an uptick of companies seeking to build in extra 'safety stock' at ports in order to mitigate future supply chain risks.

The pandemic has stimulated global supply chains come under review as companies seek to increase resilience, which ultimately will increase the role of short-sea shipping, combined with increased near shoring.

With access to land and labour at a premium in many prime warehouse property markets portside locations will continue to make operational sense for many retailers and manufacturers.

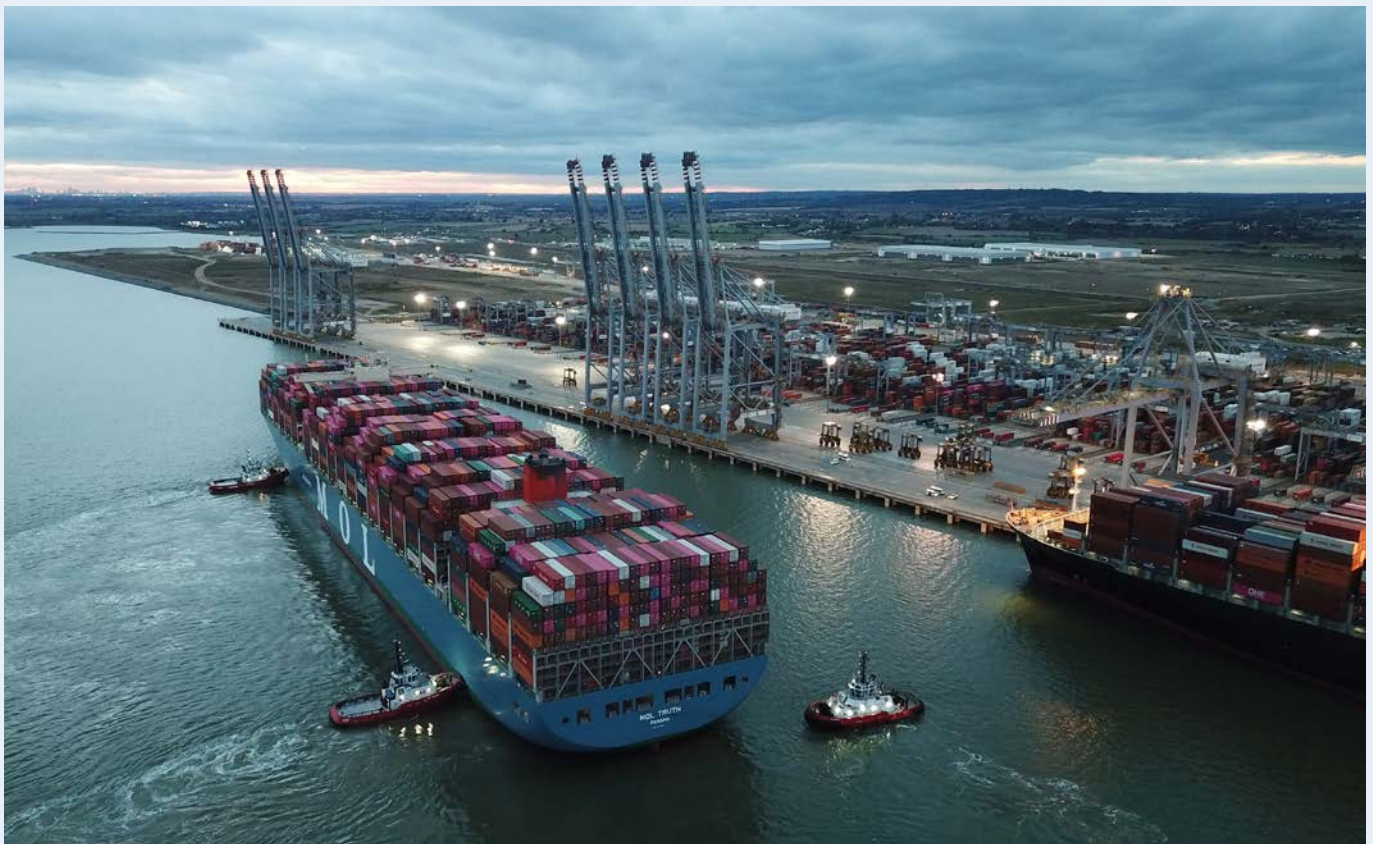
This paper has demonstrated that by locating near our two case study ports of DP World London Gateway and Humber International Enterprise Park

significant operational benefits can be achieved including:

- Quicker access to the end consumer
- Cheaper property costs compared to a single larger unit in the golden triangle
- Plentiful and cost effective labour
- Space to expand
- Environmental benefits by reducing CO2 emissions per mile

Legacy supply chains take years to change, long term leases may need to expire, logistics contracts will need to be changed and businesses need confidence to commit capex to change their existing models.

However, as long as convenience and speed remain key drivers for the end consumer then we anticipate that port-centric logistics will start to play a bigger part in the UK supply chain.



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