Climate Change Adaptation Report

2024 Update

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Contents

Executive Summary

Associated British Ports (ABP) is the UK's leading ports group, with 21 ports handling around a quarter of the UK's seaborne trade worth £157 billion. Together with our customers, our ports contribute more than £15 billion to the UK economy and support 200,000+ jobs.

ABP is directed under the Climate Change Act (2008) to provide voluntary climate adaptation reports in relation to its role as Harbour Authority for the Humber, Immingham, Hull and Southampton. This is ABP's Fourth Round Climate Change Adaptation Report, supporting the Government's ongoing commitment to tackle climate change and meet the country's Net Zero target.

Our ports are extremely important for the handling of UK goods and, as such, deemed critical national infrastructure, whose continued existence and contribution to trade underpins a significant amount of economic activity. For example:

- ABP Humber contains four ports: Hull, Goole, Grimsby and Immingham. The Humber ports handle £86 billion worth of trade, support 34,900 jobs, and contribute £2.5 billion to the UK economy every year.
- Southampton is the UK's largest export port; the number one vehicle handling port, Europe's leading turnaround cruise port, and the UK's most productive container port. The Port of Southampton handles £40 billion worth of trade, supports 45,600 jobs and contributes £2.5 billion to the nation's economy every year.

ABP acknowledges climate change is happening and sea levels are rising. We know that the biggest climate change risk to our Harbour Authority operations is sea level rise. Whilst there remains uncertainty around how the frequency and intensity of storms may change, we nonetheless need to proactively manage this risk.

This report outlines how we are continuing to manage climate change risk through our operational procedures and how we are playing our part as the world transitions to a low carbon economy. We continue to invest in flood resilience, renewable energy generation and green technologies which is driven by our 'Ready for Tomorrow' Sustainability Strategy[1] and our mission of Enabling the Energy Transition. Today 18 out of our 21 ports have renewable energy generation projects providing clean power for the business, our customers and the national grid.

ABP continues to demonstrate our fundamental role in Keeping Britain Trading. It provides hubs for jobs and industry and are critical infrastructure if the UK is to decarbonise the energy and industrial sectors.

We cannot move our operations away from the coast. Sea level rise will mean that our risk from flooding will increase but we can be flood resilient. ABP is planning and investing in port resilience and we call again for Government support both through the planning process, and with flood and coastal erosion risk management. Without Government assistance and flexibility in planning policy, many opportunities for decarbonisation and advancing a green/blue economy could be jeopardised.

[1] https://www.abports.co.uk/media/fo2ii2cv/abp-ready-for-tomorrow.pdf

About Associated British Ports

ABP Group

What we do

1. Associated British Ports (ABP) is the UK's leading ports group, with 21 ports handling around a quarter of the UK's seaborne trade worth £157 billion. Together with our customers, our ports contribute more than £15 billion to the UK economy and support 200,000+ jobs. Our ports include Immingham, the UK's largest port by tonnage, and Southampton, the UK's largest export port. The group's other activities include port maintenance and dredging (UK Dredging), marine consultancy and survey (ABPmer), and marinas (The Beacon Marina Collection).

2. ABP's port locations are geographically diverse and well positioned on key global and European trade routes. The ports are located in close proximity to important domestic industrial clusters, logistics hubs and major conurbations. ABP owns a total portfolio of 8,600 acres, over 2,400 acres of which is development land in prime locations across the country. Our ports are Ayr, Barrow, Barry, Cardiff, Fleetwood, Garston, Goole, Grimsby, Hull, Immingham, Ipswich, King's Lynn, Lowestoft, Newport, Plymouth, Port Talbot, Silloth, Southampton, Swansea, Teignmouth and Troon.

Our Powers

3. We have statutory functions as Harbour Authority for each of our 21 ports. Our Statutory Harbour Authority functions comprise:

- The provision and maintenance of harbour facilities, i.e. quays, wharves, piers, etc
- The provision of navigational safety functions, including lighting and buoying the harbour, the removal of wrecks and other obstructions and maintenance dredging of navigational channels
- The regulation of the activities of other persons at the harbour including the movement and berthing of ships in the harbour by means of directions and byelaws, and licensing dredging and the construction of works in the harbour by other persons
- The carrying out of harbour operations
- The provision of a pilotage service
- Nature conservation and the prevention of pollution duties

4. ABP's statutory powers include a duty to have regard to the conservation of flora and fauna. We work with the statutory nature conservation advisors and voluntary organisations to manage the area in which we operate and have agreements with the RSPB and Environment Agency on the Humber. We continue to engage, and where practical, adapt our management for the benefit of nature conservation.

Our climate related governance and disclosure

5. We maintain comprehensive and robust financial, operational and compliance controls and risk management systems to safeguard our business and assets. As part of our commitment to good governance, an annual review is undertaken to determine the effectiveness of our internal controls and risk management systems.

6. With respect to climate risk, climate change related risks are considered as part of the risk management processes and where necessary specific projects to further assess these risks are undertaken, with specialist third-party support as required. One such example of this is port flood risk as a result of rising sea levels or extreme weather events. ABPmer, a sister company of ABP and specialist marine consultants provided flood risk assessments across all of ABP's ports in 2015 which were updated in 2021. These risks are considered as part of the critical assets management process and support decision making when ABP develops new, or replaces existing, port infrastructure. Infrastructure design, positioning and resilience are factors considered in connection with port flood risk. A Flood Risk Working Group was established in 2022 to ensure focus on this key risk area.

7. As ABP Group we are directed to report our climate-related financial risks under the Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022 and information is provided in our Annual Report and Accounts.

8. We are also directed to report as a Harbour Authority under the Climate Change Act (2008) in areas where more than ten million tonnes of cargo pass through per annum [this document]. These ports are on the priority list as they comprise national infrastructure; vulnerable to the projected impacts of climate change; and because climate change adaptation requirements are not already covered in existing regulatory frameworks related to their functions.

Humber Estuary Services

9. Humber ports and terminals are the region's engine for economic growth. They play an important role in the development of new business opportunities, enable expansion into new markets and attract significant amounts of inward investment. The ports offer a major geographical advantage with unrivalled access into the UK. With excellent road and rail links, some 40 million consumers and over 60 per cent of the country's manufacturing capacity are within a four-hour drive of the Humber. Crossing times to the Continent are as short as ten hours.

10. ABP Humber Estuary Services are responsible for over 145 square miles of estuary as the Statutory Harbour Authority for the Humber. It is also the competent harbour authority for the provision of pilotage services as well as the local lighthouse authority. Our Vessel Traffic Service operation handles some 38,000 shipping movements annually, of which 13,500 require the services of one of our pilots.

11. Humber Estuary Services is also responsible for the conservancy of the Humber Estuary, which involves the ongoing maintenance of safe and navigable channels for all vessels using the estuary. It has a dedicated hydrographic survey team, which monitors the depth and location of channels in the estuary. The surveys allow regular publication of nautical charts, and notices to mariners to promulgate the changes in depths and channel alignments.

12. As the local Lighthouse Authority, Humber Estuary Services is responsible for marking channels and navigational hazards with buoys and other marks and lights. We maintain 127 floating marks; with the ever-changing morphology channel marker buoys are moved as often as every 14 days in the upper estuary ensuring safe navigation.

Hull Harbour Authority

13. The Port of Hull handles approximately 10 million tonnes of cargo, amounting to around £12 billion in trade each year. As well as containers, ferry travel and roll-on-roll-off traffic (Ro-Ro), Hull specialises in handling forest products and a range of bulk commodities. Hull is also home to the UK's first fully enclosed cargo-handling facility for weather-sensitive cargoes such as steel and bagged products. Green Port Hull, a multi-million-pound joint venture between ABP and Siemens Gamesa, was opened at the port in 2016 creating a renewable energy hub with world-class offshore wind turbine blade manufacturing, assembly, and servicing facilities as its centrepiece. The Hull Container Terminal is a multi-million-pound investment, which handles over 100,000 containers a year and has cemented Hull's position as a leading gateway for trade, offering reliable and resilient supply chain solutions. Adjacent to the port, the Humber International Enterprise Park is one of the largest development sites in the UK. Regular short-sea services operate to Europe, Scandinavia and the Baltic States and the port benefits from worldwide deep-sea connections. Our Rotterdam Terminal accommodates the new super-cruise ferries operated by P&O Ferries on the Hull-Rotterdam crossing. We directly employ around 500 people with a further 12,000 jobs supported in the wider port community.

14. In addition to being the owner and operator of the Port of Hull, ABP is the Statutory Harbour Authority for the docks and jetties in the port. The Hull Dock Master holds the statutory powers to control the movement of vessels within the port limits (which includes the riverside berths and jetties). Humber Estuary Services, via the Vessel Traffic Service, controls the movement of all vessels transiting past the port and works closely with the Dockmaster to manage vessels arriving at, or departing from the port limits. All vessels calling at Hull must report to Humber Estuary Services and the Hull Dock Master work closely together.

Immingham Harbour Authority

15. Immingham is a premier global gateway for international trade and is of national economic and strategic importance to the UK, handling about 46 million tonnes of cargo each year which makes it the largest port by tonnage in the UK. It is situated on the south bank of the River Humber approximately ten miles from Spurn Point. Continental Europe is less than 24 hours' sailing time from Immingham, making the port's potential market of more than 170 million people easily accessible to UK businesses. Beyond that, the rest of the world is accessible through well-established shipping routes. Immingham is a very diverse port operation and handling cargoes that include dry and liquid bulks, Ro-Ro, Lift-on-Lift-off (Lo-Lo) units and break-bulk general cargo. As a critical link in the supply chain the port supports 10,500 jobs nationally and contributes over £700 million to the UK economy each year. Immingham is a critical part of the supply chain for renewable electricity generation include biomass and offshore wind.

16. As with Hull, ABP Immingham is the Statutory Harbour Authority for the docks and jetties comprising the port. The Harbour Master Humber (Humber Estuary Services) and Dock Master Immingham have a very close working relationship. The Dock Master, Immingham, holds the statutory powers to control the movement of vessels within the port limits (which generally extend 200 yards beyond the berthing face of the riverside jetties) as well as, via Vessel Traffic Services, controlling the movement of all vessels arriving at or departing from, the port limits.

Southampton Harbour Authority

17. Southampton is one of the UK's most significant gateway ports. Southampton has a global reach with its container, car and cruise operations.). Less than 100 miles from mainland Europe it has a sheltered, deep-water position on the south coast of England, resulting in minimum weather disruption to operations and minimum deviation from main shipping lanes, along with good inland transport connections. The wider port of Southampton is also home to the Fawley Refinery, one of the largest refineries in Europe as well as BP Hamble, Solent Gateway and several aggregate handling wharves located on the River Itchen. Collectively over 30 million tonnes of freight pass through the Harbour Authority area.

18. Southampton handles over £40 billion of trade every year, £36 billion of which is destined for markets outside the European Union. Southampton also has five world-class cruise terminals, the largest turnaround cruise port in Northern Europe with the sector generating over £1.3 billion per annum welcoming around 3 million passengers. ABP handles around 700,000 vehicles every year the majority of which are UK manufactured vehicles for export, and Southampton is home to one of only three of the UK's deep sea container terminals, operated by DP World. Red Funnel Ferries also run car and passenger ferry services from Southampton to Cowes (Isle of Wight) providing a vital link for the island's economy and communities.

19. ABP is the Statutory Harbour Authority for the Port of Southampton, encompassing the navigable areas of the River Test, River Itchen, Southampton Water and the central Solent. We are also the Competent Harbour Authority with respect to pilotage within our Statutory Harbour Area boundary and an extended area covering the East Solent and its Eastern Approaches from Selsey Bill to the Nab Tower. The Harbour Master holds the statutory powers to control the movement of vessels within the harbour area. This area has over 150,000 shipping movements each year, of which around 9,000 require the services of one of ABP's pilots.

20. We operate the Vessel Traffic Service providing a navigational Information Service, Traffic Organisation Service and Navigational Assistance Service to vessels within the Vessel Traffic Service area. We are also the Local Lighthouse Authority for the Port of Southampton's Statutory Harbour Area by virtue of the Merchant Shipping Act 1995. As Local Lighthouse Authority we are responsible for the provision and maintenance of Aids to Navigation, reporting any defects to Trinity House Lighthouse Service as the General Lighthouse Authority for England and Wales.

Our Approach

Introduction

21. We produced our first voluntary Climate Change Adaptation Report in 2011 with our second round of reporting in 2016 and third round of reporting in 2021 (Round 3). This document is our fourth assessment report. Much of the background information on ABPs functions as Harbour Authority is described in our original report (ABP, 2011).

22. As noted above, ABP Group is also directed to report its climate-related financial risks under the Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022, which require us to examine and report on the potential to be impacted by both physical and transition risks and opportunities. To meet these regulations, we made some small amendments to the Round 3 assessment methodology and used alternative climate change scenarios which could better capture the transition risks and opportunities. Our first report was provided within our Annual Report and Accounts for year ending December 2023[2].

23. The latest Climate Adaptation Reporting guidance[3] requires those companies which reported in Round 3 to focus on changes and updates since the previous round, along with an update of the previously submitted risk assessment. This report, therefore, uses the same impact assessment methodology, criteria and climate change scenario as Round 3 (illustrated below). These identify whether the potential impact to ABP at the end of the century is high, medium, or low.

Likelihood	Expected Frequency					
4	Risk is likely to occur in the next 5 years and/or has occurred in the last 5 years.				High risk	
3	Risk may occur within the next 10 years and/or has occurred in the last 10 years.			Medium risk		
2	Risk may occur within the next 40 years and/or has occurred in the last 40 years.		Low risk			
1	Little evidence to suggest it may occur in the next 40 years. No evidence of occurrence in past 40 years.					
		1	2	3	4	Impact
		Minor	Moderate	Major	Catastrophic	
		< 1%	1% to 5%	5% to 10%	>10%	Financial Impact (EBITDA)
		Others try to exert pressure / receives little coverage	Policy / Strategy undermined / adverse publicity with limited effect on public opinion	Short-term loss of credibility / adverse publicity in local and national press affecting standing within local government and professional circles	Total loss credibility / adverse media coverage affecting public opinion	Reputation
		< 24 hours interruption	24 to 48 hours interruption	48 to 96 hours interruption	> 96 hours interruption	Service Interruption

24. This assessment provides a long-term high-level overview of risk across our Harbour Authority areas. There are differences in individual risks and consequences between and within the different Harbour Authority areas and these are assessed further within ABP's business processes and procedures.

[2] Associated British Ports Annual Report and Accounts for the year ended 31 December 2023 www.abports.co.uk/media/ewsdq0zb/associated-british-ports-financial-statements-2023.pdf
[3] Defra (2023) Climate Adaptation Reporting Fourth Round Guidance (Crown Copyright, 2023)

What is the evidence our climate assessment is based on?

25. Port related climate change risks are identified in the Marine Climate Change Impacts Partnership (MCCIP) 2023 Report Card[4] which could potentially impact the function of a Harbour Authority, namely: sea level rise and flooding; storm events and extreme weather; temperature, humidity, and precipitation; sedimentation; coastal erosion; water temperature; water quality and habitats and species. In conducting the risk assessments, we have used material from the following sources:

- The Climate Change Committee[5]
- UK Climate Change Risk Assessment 2022[6]
- UK Climate Projections (UKCP18)[7]. (For sea level rise the UKCP18 Representative Concentration Pathway (RCP) 8.5 95 percentiles has been used)
- Coastal Design Sea Levels - Coastal Flood Boundary Extreme Sea Levels Dataset (2018)[8]
- MCCIP Annual Report Cards 2020 to 2023[9]
- The Environment Agency Flood Risk Maps[10]
- Flood and Coastal Risk Projects, Schemes and Strategies: Climate Change Allowances (Environment Agency, 2022)[11]
- Welsh Government Guidance on Adapting to Climate Change (Welsh Government, 2022)[12]
- Local tide records
- Coastal Flood Risk and Defence Asset Mapping Reports (ABP Internal Documents ABPmer, 2021, 2024)
- Internal ABP business planning and operational documents
- Local knowledge and experience in relation to the areas of jurisdiction

Keeping up to date

26. We continue to invest in our understanding of the risks we face from climate change, both through understanding the direct impact to our port infrastructure and in studying the interdependencies with our customers and the wider infrastructure network.

27. As an example, following the storms of the winter 2013/14, ABP completed a review of the coastal flood risk of its 21 ports in 2015. These were updated by ABPmer in 2021 and have been available for the use in business decision making since January 2022. The new reports used the Environment Agency guidance[10] which adopts more cautious numbers and provides an assessment of the updated risk to existing and new port infrastructure.

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[4] https://www.mccip.org.uk/transport-and-infrastructure
[5] https://www.theccc.org.uk/
[6] https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022
[7] http://ukclimateprojections.metoffice.gov.uk/
[8] https://data.gov.uk/dataset/73834283-7dc4-488a-9583-a920072d9a9d/coastal-design-sea-levels-coastal-flood-boundary-extreme-sea-levels-2018
[9] http://www.mccip.org.uk/
[10] https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather
[11] https://www.gov.uk/guidance/flood-and-coastal-risk-projects-schemes-and-strategies-climate-change-allowances
[12] www.gov.wales/sites/default/files/publications/2022-11/guidance-for-flood-and-coastal-erosion-risk-management-authorities-in-wales_0.pdf

28. ABP also benefits from its unique position having direct access to the latest scientific knowledge on climate change through its subsidiary company ABPmer.

Understanding risks and challenges

29. Our risk assessment is provided separately to this report in the risk assessment and action plan template. It remains broadly the same as our previous ARP3 risk assessment presented in ABP (2021)[13], although provides a more detailed breakdown regarding the predicted future change in risk profile over time. It shows that the most significant issues for our role as Harbour Authority in the Humber and in Southampton are:

- Flood damage to Harbour Authority assets
- Interruption to port operations during storm events

30. These issues arise from flooding to port infrastructure and the health and safety hazards to our staff when operating during storm events, both shoreside and at sea.

31. Sea level rise will increase the likelihood of flood damage of port infrastructure. This risk is assessed as medium in the Humber authority areas and low in Southampton.

32. The potential for increased storminess could also result in storm damage to port infrastructure resulting in increased asset survey and maintenance costs. This is assessed as medium risk across our Harbour Authority areas.

33. Increased storminess could also result in reduction or temporary interruption of operations during storm events to maintain safety of pilots and port staff. This would result in vessel delay. The risk is assessed as medium across our Harbour Authority areas.

34. All other climate change risks are assessed as low.

35. We are embedding climate change risk into our Business Strategy, planning, decision making and operational procedures through:

- Improving resilience of port infrastructure
- Improving operational resilience and business preparedness
- Tackling transition to a net zero economy

Interdependent and cascading risks

36. There are no significant changes from Round3, because as a harbour authority with the main remit of ensuring safe navigation and passage of vessels we have a significant number of interdependencies on both the land and marine side. These include the reliance on electricity, communication and rail infrastructure outside the port as well as the reliance on third party coastal defences (in the Humber).

[13] https://www.abports.co.uk/media/jq2gxtyk/associated-british-ports-climate-change-adaptation-report-update-2021.pdf

37. By their very nature, ports form an integral part of interconnected transport and logistics systems. The connectedness of these systems means that climate and weather-related impacts in one system can cause large and cascading failures in others. The potential for cascading impacts is illustrated by the 5 December 2013 flooding event on the East Coast of the UK, which caused extensive flooding at Immingham. Critical power and IT services were lost and the Humber port ceased operation for a number of days. This included interruption to several nationally significant supply chains.

Adaptation action plan and implementation

38. The following sections outline how we are managing the key risks arising from the risk assessment.

Improving resilience of critical infrastructure

39. The most significant climate change risk to our Harbour Authority areas is flood risk through coastal flooding of our critical infrastructure assets caused by storm surge due to with long-term sea-level rise increasing the height of extreme water levels during storm events. This risk has remained consistent throughout previous reporting.

40. ABP remains committed to making its ports flood resilient including continuing to improve its flood defence infrastructure through its capital programme. ABP has also continued to commission technical analysis to further understand flood risk, both for the present day and in future under a range of sea level rise scenarios. This technical analysis has included geospatial mapping of coastal defence assets within port boundaries, with information collated on (amongst other things) asset type, elevation, condition and standard of protection.

Hull and Immingham Harbour Authorities

41. There are no significant changes from Round 3. Our sea defences also protect the urban areas of Hull and we continue to work in partnership with the Environment Agency to implement improvements to the infrastructure and local resilience measures to key infrastructure. The low-lying topography of Hull and Immingham means that flooding remains a key risk and we are currently investing in new flood walls at Immingham.

42. We are key stakeholders in the Environment Agency's flood risk management of the Humber Estuary, helping to shape the Humber 2100+ strategy, which is defining the most sustainable, credible and cost -effective approach to manage tidal flooding over the next 100 years[14]. This, and previous flood risk management strategies, are supported by extensive flood modelling and investigations. We also work closely with Lead Local Flood Authorities, the Environment Agency and Local Resilience Forum to manage key infrastructure on our estate, such as pumping stations, for the benefit of those outside the port estates.

43. We are also continuing to build flood resilience into our port infrastructure. We have a programme of asset improvements which take account of climate change ensuring

[14] https://consult.environment-agency.gov.uk/humber/strategyreview/user_uploads/humber-2100--storymap-content-for-website.pdf

that our flood sensitive critical infrastructure (for example, electricity sub-stations) is elevated out of the flood plain, thereby improving port resilience.

Southampton Harbour Authority

44. There is again no significant change from Round 3; the coastal flood risk at the port of Southampton remains low risk, but it is recognised this will increase with sea level rise. We continue to work closely with Southampton City Council and the Local Resilience Forum to better understand the predicted frequency and nature of both surface water and coastal flooding events. We are aware of the risk of interdependent flood events and cascading failures from pluvial events, and we work with the council in managing the risk of highway flooding outside of our port area.

45. We are key stakeholders in the council's Local Flood Risk Management Board and Coastal Strategies[15] and are a member of the Local Flood Resilience Forum.

Operational resilience and business preparedness

46. We are continuing with a programme to improve our resilience to flooding, ensuring that flood risk management and climate change risk are fully integrated into existing asset management and decision-making processes.

47. As with Round 3, the potential impact of delays to shipping movements through pilotage restrictions from increased storminess remains a medium risk across all our Harbour Authority areas. These risks are managed through monitoring of weather conditions, Dynamic Risk Assessments and Safe Systems of Work.

48. Adaption and climate change resilience is an ongoing process, and we have business processes and procedures which support this. At Group level all ABP's ports and Vessel Traffic Services are covered by Emergency and Business Continuity planning which are subject to ongoing review and integrated with Local Resilience Forum plans. Our critical services are supported by backup generators, and we use common IT platforms which can be accessed remotely if any of our facilities become inaccessible. Our servers are also backed up regularly minimising the risk of data loss in the event of system failures. Resilience actions are being implemented across the Group and at port levels, such as a national agreement with Generator Suppliers to provide mobile generators for all critical activities.

49. The results of group wide and port specific initiatives feed into Emergency and Business Continuity planning and associated support software. We consider climate change risks as part of our normal group risk assessment processes. These plan for the full range of emergency situations, including flood events. Pollution of the marine environment is also considered within the Oil Pollution Preparedness and Response Convention Plan implemented by the Harbour Masters' departments.

50. At an operational level, the outputs feed into ABP's Compliance System and associated Marine Safety Management Systems, Dynamic Risk Assessments and Safe Systems of Work. All these are subject to regular review. In the longer term they are likely to include consideration of increased temperature on our operations and the personal protective equipment required to protect our employees.

[15] https://www.southampton.gov.uk/environmental-issues/flood-risk-management/strategies-plans-studies/

51. As Category 2 responders under the Civil Contingencies Act, we work closely with local authorities and emergency services to ensure safety and security of our estates during emergencies.

Adaptation action plan and implementation

52. There are no significant changes from Round 3 and we continue to adapt to climate change, both in terms of the resilience of our Harbour Authority operations and as a port operator as an iterative, long-term process.

53. The management of climate change risk is integrated into our business planning and operating procedures.

54. Flood risk management is coordinated across ABP Group through our Flood Risk Working Group which is implementing a range of continuous improvement actions for the management and dissemination of flood risk across our estates.

55. We continue to improve our resilience and develop the adaptive capacity of our organisation to ensure we can continue to deliver for ABP`s stakeholders in the face of climate change.