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Welsh Government

The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East of Magor) Connecting Road) 201-

The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East of Magor) Connecting Road) (Amendment) Scheme 201-

The London to Fishguard Trunk Road (East of Magor to Castleton) Order 201-

The M4 Motorway (West of Magor to East of Castleton) and the A48(M) Motorway (West of Castleton to St Mellons)(Variation of Various Schemes) Scheme 201-

The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and the M48 Motorway (Junction 23 (East of Magor) Connecting Road) and The London to Fishguard Trunk Road (east of Magor to Castleton) (Side Roads) Order 201-

The Welsh Ministers (The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and the M48 Motorway (Junction 23 (East of Magor) Connecting Road) and the London to Fishguard Trunk Road (East of Magor to Castleton)) Compulsory Purchase Order 201-

The M4 Motorway (Junction 23 (East Of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East Of Magor) Connecting Road) (Supplementary) Scheme 201-

The Welsh Ministers (The M4 Motorway (Junction 23 (East Of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East Of Magor) Connecting Road) and The London to Fishguard Trunk Road (East of Magor to Castleton)) Supplementary Compulsory Purchase Order 201-

Appendices to Proof of Evidence

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A1. Appendix 1: Economic Contribution of the Port

A1.1 Overview

A1.1.1 In this appendix, I address the contribution of Newport Docks to the wider economy. The claims made by ABP about the contribution of the Newport Docks to the wider economy appear to be based on a study undertaken by Arup dating from 2014¹ and an accompanying publication focusing on ABP's assets in South Wales.²

A1.1.2 The Arup study estimates the employment and gross value added (GVA) impacts of ABP-owned ports. The researchers consider three forms of economic impact.

- a) **Direct**—direct employment associated with a port, including employment within the perimeter of the site and activities dependent on the port authority.
- b) **Indirect**—supply chain impacts of the expenditures of ports and port-related activities.
- c) **Induced**—the follow-on economic impacts of the expenditure of those directly employed in the ports.

A1.1.3 I summarise the results of the analysis as follows:

- a) The reports suggest that ABP South Wales supports 20,588 direct, indirect and induced jobs, of which around 15,000 are in Wales;
- b) Newport Docks accounts for 3,000 of the jobs supported in Wales;
- c) ABP South Wales contributes £1.4bn of GVA to the national economy and £1bn to the Welsh economy;
- d) Newport Docks accounts for £186m of the local GVA contribution.

¹ ARUP (2014), 'Economic Value of ABP to UK plc', February.

² ABP, 'ABP South Wales: Delivering Jobs and Driving Growth'.

- A1.1.4 Direct, indirect and induced employment figures are estimated. The report does not provide full details of the methodology behind the calculations. However, the terminology used in the report implies the use of input–output (IO) analysis.

Input–output analysis

An IO table represents the relationships across sectors in an economy between the use of resources in production and consumption, and provides a picture of the flows of products and services in the economy. For example, it shows the amount of insulated wire and cable sector services used in the production of one unit of port services. These production relationships, which are given for the whole economy, and which form the basis of the indirect contribution of port services, are represented in the Office of National Statistics (ONS) Analytical IO tables.³

The first step of the estimation uses the Analytical IO tables to calculate the amount of gross output produced in the economy from a given level of rail input through its supply chain. The indirect GVA generated by ports in the economy is then assessed from the amount of value added corresponding to the output produced by each sector. The latest version of the Analytical IO tables presents such relationships disaggregated by 127 sectors for the year 2010.⁴

- A1.1.5 One important omission from the Arup report is the sectoral definition used for ABP activities. It is not clear what sub-sector has been used, as there is no sector in the ONS IO tables specifically covering port services. ‘Water transport’ and ‘warehousing and support services’ are grouped together,⁵ but with no additional breakdown. While I would expect ABP’s activities to fall into these categories, there would be other, less relevant, activities included in these. For example, the water transport sector would include both ports and shipping activities.

A1.2 Scope of the analysis

- A1.2.1 There appears to be a degree of inconsistency between the way the results are presented and the scope of the work. The authors appear to

³ See <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/input-output--uk-national-accounts/index.html>, accessed 26 June 2014.

⁴ These tables were published in 2013.

⁵ SIC codes 50 and 52, respectively.

have included the activities of ABP's Tenants as part of ABP's direct economic impact, despite also noting that one of the two overall objectives of the report is to:

[assess] the current economic impact on the national economy of ABP's activities across its 21 UK ports⁶ [emphasis added]

A1.2.2 In one sense, this is a semantic issue. ABP itself purports to operate a 'landlord' business model⁷ and businesses operating on ABP's estates providing ancillary maritime or cargo/passenger handling services could be seen as being part of the same supply chain. However, a significant proportion of the businesses at Newport are not related to the maritime supply chain. These businesses therefore cannot be tied to the operation of the port except from their position as Tenants. Moreover, conceptually I would disagree with the notion that a landlord is in some way responsible for the economic value added of its Tenants.

A1.3 Additionality of activities at ABP-owned ports

A1.3.1 The scale of activities at ABP-owned ports does not, in itself, provide an indication of its overall implications for the economy because it does not take into account the additionality of these activities. For example, if ABP-owned ports did not exist and the resources (people, land, etc.) involved would otherwise have been deployed in other, equally productive, sectors of the economy, there would be no overall economic benefit from activities at these ports.

A1.3.2 In effect, the figures do not reflect how factors of production could otherwise be used in a productive way. I recognise the challenges in applying an assessment of additionality and that in many cases the gross figures are presented; however, if such an assessment is not

⁶ ARUP (2014), 'Economic Value of ABP to UK plc', February, p. 5.

⁷ See Abpa Holdings Limited and Subsidiaries (Company Number 07847153) (2015), 'Annual Report And Accounts' p. 1, <http://www.abports.co.uk/admin/content/files/Investor%20Relations/2015/ABPA%20Holdings%20Ltd%20-%20Annual%20Report%20and%20Accounts%202015.pdf>

performed, I would expect this important limitation of the analysis to be made clear in the report. This is not the case.

A1.4 Inclusion of induced activities

A1.4.1 The payment of wages by ABP and its Tenants—and wages paid by their suppliers to their employees—generates additional spending in the economy. This spending itself creates employment, and the effect of this demand can also be measured by the impact on GVA or employment (this is known as an induced impact of the sector).

However, when these effects are added to the direct and indirect effects of all sectors across the economy, the sum would exceed economy-wide GVA, which, economically, is not very meaningful. It is therefore important that these figures are not interpreted as the net impact of the port.

A1.4.2 These effects are not net additional to the economy, and similar effects would arise if the labour used at Newport Docks were redeployed in another sector of the economy. Such induced effects are only part of the wider process of macroeconomic adjustment that delivers total national output as measured by total GVA, the sum of its constituent sectors. That is to say, they would be crowded out as the macro-economy adjusts to the new level of output. This is an important limitation of these forms of model; they do not capture changes in the utilisation of economic capacity (and therefore the accompanying price or wage increases).⁸ I do, however, acknowledge that rigidities in labour and capital markets or the presence of spare capacity in the local economy could mean that there could be a temporary impact on the economy if the port's output were to fall.

A1.5 Spatial impact

A1.5.1 Arup's report suggests that there has been some assessment of the spatial effects of activity at ABP-owned ports:

⁸ See, for example, Grady, P. and Muller R.A. (1988), 'On the use and misuse of input-output based impact analysis in evaluation', *The Canadian Journal of Program Evaluation*, 3:2.

At a regional level, the scale of economic activity at all ABP's ports in relation to the local economy typically means that a significant demand for business services from the local economy is generated.⁹

A1.5.2 The companion document suggests that £1bn of the £1.4bn of GVA is retained within the Welsh economy. The methodology used to calculate this localised figure is not described.

A1.5.3 Similarly, Arup reports direct, indirect and induced employment by region. It is possible to estimate the implied employment multipliers from the Arup report. The table below shows the direct, indirect and induced employment estimates for ABP activities split by region. From these, it is possible to calculate the implied multipliers associated with these effects. For the South Wales ABP sites, I estimate a Type I multiplier of 1.96 and a Type II multiplier of 2.99.

Table A1.1 Implied multipliers of the Arup report

Region	Direct	Indirect	Induced	Total	Implied Type I multiplier	Implied Type II multiplier
Humber	9,610	13,363	9,963	32,937	2.39	3.43
East Anglia	1,653	1,611	1,714	4,978	1.97	3.01
Southampton	4,903	4,745	5,083	14,730	1.97	3.00
South West	515	498	534	1,548	1.97	3.01
South Wales	6,876	6,584	7,128	20,588	1.96	2.99
North West	2,553	2,440	2,646	7,639	1.96	2.99
Scotland	192	189	199	580	1.98	3.02
Nationwide ABP services	227	271	236	734	2.19	3.23
Total UK	26,529	29,701	27,503	83,734	2.12	3.16

Source: Own calculations based on Arup report.

A1.5.4 The accompanying publication implies that the indirect and induced employment estimates shown above are actually not region-specific. Instead, the total number of supported jobs in South Wales would be 15,000, of which 3,000 are associated with Newport Docks site. Taking

⁹ ARUP (2014), 'Economic Value of ABP to UK plc', February, p. 10.

the direct employment of 6,876 from Table A1.1 implies a local Type II multiplier of 2.18.

A1.5.5 The ONS does not produce IO tables at a regional level. However, a 2010 analysis by Cardiff Business School did estimate these for Wales. The results suggested a Type II employment multiplier of 1.58. In the absence of more detailed information on the Arup analysis, it is not possible to determine the reason for the difference. However, if we were to apply the Cardiff Business School employment multiplier, the number of jobs supported by Newport Docks site would be considerably lower; 2,173 compared with the Arup reported figure of 3,000.

A2. Appendix 2: Response to Other Objections

A2.1 Overview

A2.1.1 In this appendix, I summarise the statement of objections to the Scheme given in relation to its impact on Newport Docks and my response to it. In particular, I outline company-level analysis of the companies affected. I understand that the Welsh Government is in discussions with the objectors to the Scheme. My conclusions on the impact of the Scheme are therefore subject to change.

A2.2 The Newport Harbour Commissioners (objection number OBJ0071)

A2.2.1 The Newport Harbour Commissioners object to the Scheme on the grounds of a negative effect on the local economy, which could be alleviated by the alternative route put forward by ABP. As an example of such a negative effect, the Commissioners state that their costs ‘would have to be covered by the remaining stakeholders [...] lead[ing] to higher harbour dues per vessel.’¹⁰

A2.2.2 The Commissioners do not have premises at the port and are not directly included in the CPO.

A2.2.3 The extent of the shipping restriction imposed by the Scheme is covered by the Proof of Evidence of Mr Jonathan Vine, as well as section 3 of my Proof of Evidence.

A2.2.4 The impact on the local economy is covered by the Proof of Evidence of Mr Stephen Bussell. I also commented on a specific study commissioned by ABP on the economic contribution of Newport Docks in the previous section A1.

A2.3 T U Agencies Ltd (objection number OBJ0147)

A2.3.1 T U Agencies, which specialises in port agency and shipbroking, and has offices at Newport Docks,¹¹ objects to the Scheme on the basis of

¹⁰ Newport Harbour Commissioners (2016), statement of objections, 22 April.

¹¹ <http://www.tuagencies.co.uk/about>

operational restraints harmful to its business, the port and the local economy. The Scheme would separate North and South Dock and hinder the transfer of harbour mobile cranes between the docks.¹²

A2.4 WE Dowds Shipping Ltd (objection number OBJ0302)

A2.4.1 The objections raised by Dowds are as follows.

- a) Parts of Shed 10 would be demolished and an entrance to the shed would be lost. Since Shed 10 is currently ‘just large enough to accommodate the larger vessels serviced by [Dowds]’; it could no longer be used for that purpose.
- b) Dowds’ operations cause road traffic that relies on the weighbridge adjoining Shed 1/2, but roadworks would disrupt this and incur additional cost for Dowds.
- c) Dowds operates via a wireless stock control system that would be permanently disrupted by the bridge and ‘would have a catastrophic impact upon [Dowds’s] ability to undertake its operations’.
- d) The bridge height would restrict some of the larger vessels serviced today, a development that would deteriorate further in the future as it would impede ABP’s prospects of enlarging the junction cut.

A2.4.2 Ultimately, Dowds claims that ‘[the] current Scheme design and route has a substantial impact upon the Company, with the potential to degrade its operations within the docks.’ Dowds emphasises that it would be in a position to explain the effects more specifically once more detailed information becomes available.

A2.4.3 Dowds also highlights that the footprint of its operations, listed below, is not fully captured in the CPO:

¹² TU Agencies Ltd., statement of objections, email of 14 April 2016.

¹³ WE Dowds Shipping Ltd, statement of objections, email of 26 April.

- a) Part of Shed 10 and storage land to the north of that (plots 7/3ac, 7/3ad, 7/3af, 7/3ag);
- b) Part of Westway Road and the internal east west dock road connection (Plots 7/3ak, 7/3aj, 7/3am, 7/3au, 7/3ba);
- c) Road and rail links on the east side of the docks (7/3cq, 7/3da, 7/3dc, 7/3dd, 7/3de, 7/3df);
- d) The entrance to North Dock and the surrounding area of impounded water (7/3cc, 7/3cd, 7/3ce, 7/3dg, 7/3dk).

A2.4.4 I have reviewed the CPO and confirm that it covers only the first bullet point above (plots 7/3ac, 7/3ad, 7/3af, 7/3ag). In the updated CPO (MOD2), Dowds is classified under 7/3ev, 7/3ew, 7/3ex, 7/3ey, 7/3jr, 7/3kh and 7/3gz.

A2.5 Jewson Ltd and Saint-Gobain Distribution Limited (objection number OBJ0313)

A2.5.1 In its statement of objection, Saint-Gobain Distribution Ltd (also known as International Timber) and Jewson Ltd state that ‘the impact will in reality include the closure of the International Timber (and so the Saint-Gobain and Jewson) operation at Newport Docks and consequently the inability of Jewson to operate, and therefore the likely closure, of all of Jewson’s branches throughout the west of England and Wales.’¹⁴ The letter highlights the port as being critical to the import of timber and subsequent distribution at local branches; the loss of external storage at the port; restrictions to ships being able to access the docks; and the contribution of Saint-Gobain to the local economy.

A2.5.2 I understand from the Welsh Government that mitigation measures have been discussed with International Timber—e.g. solutions to reductions in temporary storage areas are being considered, and that

¹⁴ Jewson Ltd and Saint-Gobain Distribution Limited, Statement of objections, 4 May 2016.

the possibility of storage beneath the bridge in the long term has been highlighted.¹⁵

A2.6 CJN Engineering Limited (objection number OBJ0312)

A2.6.1 In its statement of objection, CJN Engineering Limited states that ‘it is very difficult to find premises suitable for [its] industry as [it needs] a large workshop, offices and plenty of outside area to store goods and equipment.’¹⁶

A2.6.2 CJN has suggested that it does not need to operate at or close by a port,¹⁷ and I have classified its port-dependency as ‘not required’ in Table A3.1

A2.7 Port Security Authority (objection number OBJ0095)

A2.7.1 The objection letter of the Port Security Authority states that ‘the Welsh Government appears to have given no consideration to the security requirements under Statutory Instrument 2013 No. 3180 relating to the construction and operation of the motorway over the operational Port. This is likely to give rise to serious security concerns.’¹⁸ As an expert in the economics of transport, I cannot and do not respond to this objection as part of this Proof of Evidence.

¹⁵ Minute of meeting between Jewsons/International Timber and Welsh Government dated 15 August 2016.

¹⁶ CJN Engineering Limited, objection letter.

¹⁷ CJN response to letter from Martin Bates of 22 July 2016 on 25 July 2016.

¹⁸ Port Security Authority, statement of objections, 27 April 2016.

A3. Appendix 3: Tenants' Activities, Location Dependency and Operational Constraints**Table A3.1 Tenants' activities and location-dependency inside the port**

Tenant	Activity	Location-dependency inside port
Origin UK Operations Limited	Manufacture, blending and sale of fertiliser products	Required
Dowds, W E Special Agreement	Cargoer (shipping and storage operations)	Required
Jewson Limited and Saint-Gobain Building Distribution Ltd	Timber (generalist builders merchant, plumbing and heating, insulation and dry lining)	Required
Ronnie S Evans Transport	Haulage, logistics	Not required
Road Maintenance Services Ltd	Construction (specialist surface treatment contractors)	Required
Hill & Smith t/a Asset International	Construction (manufacture and distribution of infrastructure projects, notably steel-fabricated products including road safety barriers, and technological safety solutions such as variable message signs)	Not required
Scott Timber Limited	Timber	Not required
Owens (Road Services) Limited	Provision of road haulage, vehicle hire, warehousing services, property investment	Not required
New Adventure Travel Ltd	Private coach hire	Not required
N R Evans & Son Ltd	Road haulage and warehouse services	Not required
Reginald Roderick t/a A1 Skips	Waste management and/or skip hire	Not required
Sims Group UK Limited	Scrap metal	Required
R Williams Transport	Haulage and logistics services	Not required
Bridge Time Transport Ltd.	Transport, storage	Not required
Givvons, Lynette t/a Ma's Ba	Café	Not required
Laidlaw (2010) Ltd	Haulage and logistics services	Not required
Baldwins Crane Hire Ltd	Supply of mobile cranes	Not required
CJN Engineering Limited	Sheet metal fabricator	Not required
Hedland Civil Engineering Ltd	Construction	Not required
Svitzer Marine Ltd	Ship towage	Required
Newport City Council	Unknown	Not required
J E D Crushing & Screening Limited	Support activities for mining and quarrying	Required
LDH Plant Ltd	Sale of plant and machinery, and repair services	Not required
ABP	Port operator	Required
South Wales Wood Recycling Limited	Wood recycling	Not required

Notes: The precise activity of Newport City Council is unknown to me. However, I exclude Newport City Council from my land loss analysis. The table does not contain the explosive licence operated by ABP, which is not mapped in the plan (Figure 4.1 of my main report). The explosives business will not likely remain at Newport Docks if the Scheme proceeds.

Source: Tenants based on the Land Reference Sheet. Activities based on online search and company statutory accounts from Companies House (<https://www.gov.uk/government/organisations/companies-house>). Location dependency at Newport Docks based on own judgement, taking into account the Tenants' activities and further materials such as objection letters.

A3.1 Operational constraints of Tenants at Newport Docks

A3.1.1 In addition, I discuss below the required demolition of buildings¹⁹ and other factors mentioned in various documents (e.g. Welsh Government meeting notes, and the safeguard zone document). However, they do not directly feed into my 5–50% analysis from section 4 of my main report; rather, they set the rationale for testing a non-linear impact of land loss on rental income.²⁰

A3.1.2 WE Dowds Shipping Ltd claims that the 'current Scheme design and route has a substantial impact upon the Company, with the potential degrade its operations within the docks.'²¹ Among other potential detriments, it views the demolition of the north section of Shed 10 as a 'disproportionate effect upon its ability to handle existing or potential traffic'. However, I note that this demolition relates to 35 meters, or approximately 20% (based on visual inspection), of the Shed's total size, and that the north entrance would still be accessible through a permanent diversion road.²² It is nevertheless understood that this warehouse storage loss cannot be compensated through extension of the Shed at the south end, where another building is currently being erected.²³ Based on this Proof of Evidence, I take the view that Dowds is likely to be able to continue operation at the Port.

¹⁹ Building demolition plan at Port, M4CaN-CJV-GEN-Z3_GEN-FN-WX-0002.xlsx, 6 June 2016.

²⁰ This excludes the discussion on the junction cut.

²¹ WE Dowds Shipping Ltd, Statement of objections, 26 April 2016.

²² Drawing number (extract): M4CaN-DJV-GEN-Z3_GEN-DR-WX-0001, 13 November 2015.

²³ Welsh Government meetings.

A3.1.3 Saint-Gobain Distribution Ltd (also known as International Timber) and Jewson Ltd object to the Scheme. They state that ‘the impact will in reality include the closure of the International Timber (and so the Saint-Gobain and Jewson) operation at Newport Docks and consequently the inability of Jewson to operate, and therefore the likely closure, of all of Jewson’s branches throughout the west of England and Wales.’²⁴ Saint-Gobain does not elaborate to what extent its business depends on timber import specifically from Newport Docks. It is likely that not all branches are currently serviced by the Port, and, where they are, could be substituted by other ports. However, this may not even be necessary. I understand from the Welsh Government discussions that solutions to reductions in temporary storage areas are being considered, and that the possibility of storage beneath the bridge in the long term has been highlighted. It is my view that continued operation is likely in light of the primarily unaffected large plots 4aq and 4af (March CPO). The smaller plots (4p, 4ad, 4ae; March CPO) would become temporarily unusable but may only partly be affected on a permanent basis due to the possibility of using the land following the construction. This corresponds to my understanding of the discussions from the Welsh Government meetings, which suggest that there might also be a temporary solution to this. Based on this Proof of Evidence, I consider that Saint-Gobain is likely to continue operation, although not necessarily at all its sites.

A3.1.4 CJN Engineering Limited states that ‘it is very difficult to find premises suitable for [its] industry as [it needs] a large workshop, offices and plenty of outside area to store goods and equipment.’²⁵ However, CJN does not need to operate at or close by a port.²⁶ If the workshops are able to relocate back under the bridge after completion, there may not be a permanent impact on CJN if it can continue operation in the meantime. However, as part of this Proof of Evidence, I do not seek to

²⁴ Jewson Ltd and Saint-Gobain Distribution Limited, Statement of objections, 4 May 2016.

²⁵ CJN Engineering Limited, objection letter.

²⁶ CJN response to letter from Martin Bates of 22 July 2016 on 25 July 2016.

quantify any compensation arising from relocation (e.g. the cost of erecting new buildings), nor do I give a view on who is liable for such compensation, if any.

A3.1.5 In addition to these Tenants' statement of objections, there may be operational restraints not directly observable from the land loss analysis. Origin UK Operations Limited, which is active in the fertiliser business (compare Table A3.1 above), may have an uncertain future at the port if the Scheme proceeds.²⁷ It is understood that the north façade of Shed 9—occupied by Origin, among others—would be closed.²⁸ In addition, the fertiliser business requires a COMAH licence.

A3.1.6 The explosives handling activity at the port—which I understand to be operated by ABP itself at Shed 9 (west of junction cut), Shed 8 (west of junction cut) and Shed 5 (south-east corner of South Dock; not on the map in Figure 4.1 of my main report)—may need to cease all operations due to an extensive safeguard zone around the Scheme.²⁹ In this respect, it is irrelevant that the Scheme would not span Shed 5 in the South Dock. I therefore assume full closure of the explosives business at the port, but cannot quantify this in terms of land loss. However, I understand from the Welsh Government that the explosives licence would be revoked if the Scheme were to go ahead.³⁰

A3.1.7 The Scheme can potentially impose operational restraints on ABP's ability to operate any of its currently three mobile cranes. I understand that the Welsh Government accepts that there could be a need for additional craneage if the Scheme proceeds. As part of this Statement, I do not address the question of how many additional cranes would be needed given the bridge's height over the port.

A3.1.8 Table A3.2 lists the Tenants and the temporary and permanent impact levels.

²⁷ WAG meetings, 7 June 2016; and email from Simon Lewis to Oxera, 23 June 2016.

²⁸ WAG meetings and buildings demolition file.

²⁹ Consultation zones, Drawing number: M4CaN-DJV-EGT-ZG_GEN-DR-EN-0048, Revision: P01.5.

³⁰ Email from Simon Lewis to Oxera, 23 June 2016.

Table A3.2 Temporary and permanent land loss for ABP's Tenants

Tenant	Comments	Temporary impact	Permanent impact	Location dependency inside port
Origin UK Operations Limited	Closure of north façade of building A9; continuation of fertiliser licence (COMAH licence) unclear	Medium	Medium	Required
Dowds, W E Special Agreement	Demolition of parts of a building (north section of building A8); submitted a statement of objections	Low	Low	Required
Jewson Limited and Saint-Gobain Building Distribution Ltd	Submitted a statement of objections	Medium	Medium	Required
Ronnie S Evans Transport	Demolition of buildings A6, A7, A11 (allocation among Tenants unclear)	High	Medium	Not required
Road Maintenance Services Ltd	Possible demolition of building A10	High	High	Required
Hill & Smith t/a Asset International		High	Medium	Not required
Scott Timber Limited		High	High	Not required
Owens (Road Services) Limited		Medium	Medium	Not required
New Adventure Travel Ltd	Possible demolition of building A4	Medium	Medium	Not required
N R Evans & Son Ltd		Medium	Medium	Not required
Reginald Roderick t/a A1 Skips	Possible demolition of building A1 and demolition of building A2	High	High	Not required
Sims Group UK Limited		Low	Low	Required
R Williams Transport	See comment for Ronnie S Evans Transport	High	Low	Not required
Bridge Time Transport Ltd.	See comment for Ronnie S Evans Transport	High	Low	Not required
Givvons, Lynette t/a Ma's Ba	See comment for Ronnie S Evans Transport	High	Low	Not required
Laidlaw (2010) Ltd	See comment for Ronnie S Evans Transport	High	Low	Not required
Baldwins Crane Hire Ltd	Demolition of parts of the smaller building at the site (west extension of building A3)	Medium	Medium	Not required

Tenant	Comments	Temporary impact	Permanent impact	Location dependency inside port
CJN Engineering Limited	Demolition of building A14; submitted a statement of objections	High	High	Not required
Hedland Civil Engineering Ltd		High	Low	Not required
Svitzer Marine Ltd	Demolition of building B8 and others	High	High	Required
Newport City Council	Not an ABP Tenant	High	Medium	Not required
J E D Crushing & Screening Limited	See comment for Ronnie S Evans Transport	High	Low	Required
LDH Plant Ltd	Demolition of parts of a building (west extension of building A5)	Medium	Medium	Not required
ABP	Demolition of various buildings	Medium	Medium	Required

Notes: The impact level on Newport City Council does not ultimately matter as it is excluded from the analysis in section 4 of my main Proof of Evidence

Source: Own calculations based on sources referenced in the main text.

A4. Appendix 4: Future Activities at the North Dock

A4.1.1 In this Appendix I assess future activities at the North Dock based on ABP's Master Plan 2016 (consultation draft), and the 2010 draft. I do so in addressing a potential objection to my analysis; namely, that the port's spare capacity would diminish following the implementation of various projects and the settlement of additional tenants at the port, thereby reducing the rental income if the Scheme proceeds. As I explain below, the Master Plan 2016 (consultation draft) is not a detailed business plan—indeed, it appears rather aspirational than definitive. I conclude that the information provided does not allow me to amend my analysis or my conclusions about the potential rental income detriment to ABP due to the Scheme.

A4.1.2 ABP's Master Plan 2016 (consultation draft) highlights sites that the operator is intending to develop during the periods 2015–20, 2020–25 and 2025–35 (see Table A4.1).³¹

Table A4.1 Sites to be developed according to ABP's Master Plan 2016 (consultation draft)

Period	Section in ABP Master Plan 2016 (consultation draft)	Content	Description (quote in quotation marks; emphasis added)
2015–20	5.11-5.12	Power generation	'ABP has set aside a 12 acre (4.9 hectare) site for the development of a biomass power generation facility. (...) In addition, a potential tenant has secured planning permission for a four acre (1.6 hectare) gas power station on the West side terminal.'
	5.13	Bulk cargo	'ABP has planned investment to increase bulk cargo storage and handling facilities in the West side terminal. This is in the form of two additional warehouses adjacent to 11 Shed and the installation of a new weigh-bridge facility to enhance productivity for bulk vessels, which are serviced via the North and South Docks.'
	5.14	Forestry products	'ABP will invest in additional warehousing adjacent to the North Dock.'
	5.15	Rail	'ABP has maintained a protected rail corridor running from the timber terminal down to the South Western end of South Dock. This will

³¹ Associated British Ports (2016), 'The Port of Newport Draft Consultation Master Plan 2015–2035', 016 chapter 5.

Period	Section in ABP Master Plan 2016 (consultation draft)	Content	Description (quote in quotation marks; emphasis added)
			continue to be protected in order to be able to service the eventual development of this part of the port.'
	5.16	Recyclables	'ABP is already utilising the paved, open storage area at the coal terminal for project cargo and is actively seeking additional opportunities for the handling and export of waste products.'
	5.17	Reserved development land	'ABP has specifically identified an area of land of some 60 acres (24.3 hectares), which has direct access to South Dock and is served by road and rail infrastructure, for a major port-related occupier with on-site value-added processing or manufacturing requirements.'
	5.18-5.21	Port infrastructure	'As the economy and overall demand on the port grows, and ship sizes continue to increase, the widening of junction cut is an infrastructural improvement that has become a critical commercial priority for ABP. Depending on the outcome of the M4 relief road proposals (...), ABP expects to take this improvement forward within the next five years.'
2020–25	5.22	Biomass power station	'ABP expects the construction of a biomass powers station within the Port of Newport to have been completed and the station to be fully operational in the early 2020s.'
	5.23	Rail	'ABP intends to take the development of a new rail line forward during this period to help service the needs of the new power station operator and the increased capacity at the bulk terminal after the development of additional warehousing facilities.'
	5.24	Coal terminal	'When the anticipated cessation of coal handling eventually occurs at the Port of Newport, ABP intends to complete the repurposing of the coal terminal as part of its investment in additional bulk handling capabilities, including increasing storage facilities through the development of new warehousing.'
	5.25	Steel	'Steel imports and exports are continuing to grow at the port, which means that the redevelopment of the steel terminal at North Dock will be taken forward to include a new rail connection and a reconfiguration of existing covered warehousing. Upgrading steel shed facilities (particularly 5 Shed in the South Eastern corner of the port estate) to new modern warehouses fitted with mechanised gantry cranes will also be completed during this period to increase steel storage capacity and to ensure that customers can handle cargo as efficiently as possible.'

Period	Section in ABP Master Plan 2016 (consultation draft)	Content	Description (quote in quotation marks; emphasis added)
	5.26	Dry dock	'ABP intends to explore market demand for re-establishing it for operation during this phase of development to be used for the repair and maintenance of vessels up to 8,000 tonnes.'
	5.27	Reserved development land	'Development of the 60 acre (24.3 hectare) site in the South Eastern corner of the port will be taken forward in line with the requirements of the new customers.'
2025–35	5.28	Warehousing	'ABP has identified a series of strategic development plots.'
	5.29	North Dock, new berth and storage area	'ABP intends to infill this area to create a new berth and 10 - 12 acres of accompanying prime quayside for storage or warehousing for new or expanding customers.'
	5.30	Reserved development land	As above
	5.31-5.32	South Dock, new berths	'ABP may also consider the construction of two further berths with deep sea capabilities on the North Western side of South Dock. If taken forward, these new berths and quayside would also have to be serviced with additional cranes and facilities to accommodate expanding or new cargo types.'
	5.33	New lock	'ABP may also consider investing in a new larger entrance lock running parallel to the existing lock entrance to the port.'

Source: ABP's Master Plan 2016 (consultation draft), section 5.

A4.1.3 Based on the above table, I make the following observations. My first observation is that most sites would be developed on land unclaimed under the CPO, with only a few built on land required by the Scheme. I understand these sites could be the recyclables plot (5.16), the junction cut (5.18–5.21), and the strategic development plots at the west side of the North Dock (5.28), which would partly be affected. I understand from Mr Ben Sibert's Proof of Evidence that the CPO has been amended to facilitate the construction of the protected rail corridor (5.15), which would hence remain operational beneath the bridge and unaffected by the Scheme. I do not have data to calculate the potential land loss for these development plots if they were indeed implemented. However, their footprint appears rather small, and the implementation

of these projects, if at all, would partly happen after 2025, at a time when the Scheme is finished—so only the permanent footprint would be relevant.

A4.1.4 In summary, the development plan can, at most, have a small impact on my assessment of the loss of land due to the Scheme. This means that most works could in principle be carried out anyway, and that, for these, the Scheme would not have a direct negative impact. There may be indirect negative effects such as adjustments to planning and management, etc.

A4.1.5 My second observation is that ABP's Master Plan 2016 (consultation draft) reveals a significant share of currently unused land. A prominent example is the reserved development plot in section 5.17 of ABP's Master Plan 2016 (consultation draft): 'an area of land of some 60 acres (24.3 hectares), which has direct access to South Dock and is served by road and rail infrastructure' (see above). This appears to be a premium site as it provides excellent infrastructure with access to quayside and road and rail transport. Another example is the new berth and storage area at the North Dock (section 5.29), which would create an additional 10–12 acres of land. In principle, these two plots alone (70–72 acres) would have the potential to offset most of the lost land (33.7 hectares, compare Table 4.4 of my main Proof of Evidence, or 83.4 acres) that the Scheme would claim during the build time. I understand that ABP may have different views since the 2010 plan mentions that the reserved development plot of 60 acres 'should not be leased to customers in a piecemeal fashion but rather it should be retained for major port related development'. After the build time, the land loss would reduce significantly (17.9 hectares, compare Table 4.4 of my main Proof of Evidence, or 44.1 acres) and the two plots could more than compensate for the land loss in the long run, provided that ABP finds no additional demand for its land in the meantime. This assumption for no additional demand also requires that ABP does indeed not progress with the development of the reserved plot.

A4.1.6 My third observation is that many plans are phrased tentatively, not definitively. Most development plans are phrased with ‘may also consider’ (5.31–5.32, 5.33), ‘intends’ (5.23, 5.24, 5.26, 5.29), ‘expects’ (5.18–5.21, 5.22), ‘has set aside’ / ‘has planned’ / ‘has specifically identified’ / ‘has identified’ (5.11–5.12, 5.13, 5.17, 5.28) or ‘is actively seeking’ (5.16). In particular, the two large sites above are merely ‘identified’ or ‘intend[ed]’. This observation is relevant because the extent to which the sites to be developed can offset any land loss due to the Scheme (observation 2 above), although this depends critically on ABP not occupying this land with other Tenants. I do not have access to ABP’s internal planning of the port, nor am I involved in any discussions that it might have with potential Tenants. As such, I cannot accurately project the probability with which ABP would have implemented its Master Plan 2016 (consultation draft) if the Scheme were not taken forward, and cannot quantify any consequent effect on rental income.

A4.1.7 Similar observations apply to the when comparing the current Master Plan 2016 (consultation draft) with the preliminary draft of 2010.³² Although this 2010 plan is a preliminary draft rather an official document, I do consider it relevant for discussing the likelihood with which ABP would proceed with its Master Plan 2016 (consultation draft) if the Scheme were not to be implemented.

A4.1.8 Some of the sites mentioned in the 2010 plan have apparently not yet been implemented as they continue to be considered in the Master Plan 2016 (consultation draft). These sites include the new berth and storage area at the North Dock of 10–12 acres (5.29)³³ and the large reserved development plot of 60 acres at the South Dock (5.17).³⁴ The

³² ABP Preliminary Draft Master Plan- Port of Newport.

³³ ABP Preliminary Draft Master Plan- Port of Newport, section 5.2, ‘Plans are being reviewed to consider the (...) [i]n fill of the Northern Section of North Dock to create a strategic land bank of 10-12 acres’.

³⁴ ABP Preliminary Draft Master Plan- Port of Newport, section 5.3, the ‘southern area [that] offers the potential to assemble a substantial development site of around 40-50 acres with excellent access to the National Rail network and the South Dock Side cargo handling facilities.’ I do note that this site is slightly smaller than the 60 acres specified in the 2016 plan, but is consistent in terms of location (south-east side of South Dock) and infrastructure (rail, road, quayside); see also the figure under section 5.3 in the 2010 Master Plan.

latter site was explicitly expected to be developed in the ‘medium term (next 5 years)’,³⁵ but has not yet materialised. In contrast, ABP seems to have undertaken some of the projects mentioned in the Master Plan 2010 (preliminary draft). For example, the Master Plan 2010 (preliminary draft) mentioned the installation of at least five wind turbines,³⁶ and I understand that at least one of these has been installed to date.³⁷

A4.1.9 In addition, the Master Plan 2016 (consultation draft) discusses two major developments not mentioned in the Master Plan 2010 (preliminary draft): rail (section 5.23) and a new lock (section 5.33). The Master Plan 2010 (preliminary draft) does not highlight the same level of concern regarding the Scheme as the Master Plan 2016 (consultation draft), noting that the Scheme plans would put constraints ‘on the ability to move the port mobile harbour cranes to the three distinct operational zones that would be created by the presence of the bridge’.³⁸

A4.1.10 While it is not unreasonable for the Master Plan 2016 (consultation draft) to be aspirational or a target, my analysis highlights that not all of it may be deliverable. For example, ABP’s projection that the amount of coal handled by the port would remain stable or even increase was shown to be incorrect as it has reduced from 1.204m tonnes (2008) to 0.149m tonnes (2014)—a loss of almost 90% of coal tonnage within six years.³⁹ While I recognise that the coal market is rapidly changing in South Wales, this optimism bias seems to be present in the Master Plan 2016 (consultation draft) as well, where the tonnage forecast of

³⁵ ABP Preliminary Draft Master Plan- Port of Newport, section 5.3.

³⁶ ABP Preliminary Draft Master Plan- Port of Newport 2010, preliminary draft, section 5.1.

³⁷ ABP Master Plan 2016 (consultation draft), p. 4 (figure).

³⁸ ABP Preliminary Draft Master Plan- Port of Newport, section 5.9.

³⁹ ABP Preliminary Draft Master Plan- Port of Newport t, section 4.3, ‘The DfT’s forecasts that the total volume of coal handled by UK ports will fall through to 2030. However, the above factors mean that, over the same period, coal volumes in Newport are likely to remain stable or even grow.’ The 1.204m tonnes is taken from the figure in section 3.4. The 0.148m tonnes is calculated from the Master Plan 2016 (consultation draft), p. 19, as 8.08% multiplied by 1.85m tonnes.

3.5% per annum is significantly higher than the historical growth rate of 1.8% between 1995 and 2014.⁴⁰

A4.1.11 In summary, ABP's Master Plan 2016 (consultation draft) suggests that many projects may eventually not be carried out, or later than the proposed timeline. As a consequence, the potential land is unlikely to be significantly reduced, and any loss of rental income due to Scheme impeding the implementation of future projects would probably be small.

⁴⁰ Own calculations based on ABP Master Plan 2016 (consultation draft), p. 12.

A5. Appendix 5: The Weighted Average Cost of Capital

A5.1.1 The WACC is the rate of return required by investors to make a given investment rather than investing in other opportunities. It can also be interpreted as the cost at which a company can raise finance from its investors. The capital base of a company generally consist of two parts: debt and equity. Therefore, the cost of capital is often estimated as the average of the cost of debt and the cost of equity, weighted by the relative sizes of debt and equity in the firm's capital structure.

A5.1.2 In its use as a theoretically appropriate discount rate, the WACC reflects the time of value of money, as well as the uncertainty of the stream of expected cash flows.

A5.1.3 The cost of equity (CoE) captures the returns required by equity investors, and has been calculated using the capital asset pricing model (CAPM), which is widely used by industry practitioners. The CAPM relates the cost of equity of a company to its exposure to systematic or non-diversifiable equity market risk. The model is described by the following equation:

$$\text{CoE} = \text{RfR} + \beta * \text{ERP}$$

where:

CoE= cost of equity

RfR= risk-free rate

β = the sensitivity of the stock price in relation to the market index

ERP= equity risk premium

A5.1.4 Here (i) the risk-free rate represents the return on a risk-free asset; (ii) the equity risk premium reflects the additional return over the risk-free rate demanded by investors for investing in the entire market; and (iii) the beta measures the sensitivity of the returns of a specific company to the market.

A5.1.5 The cost of debt (CoD) represents the return required by debt investors. It is generally lower than the CoE since creditors are paid before equity investors, and therefore face lower risk. In this note, the CoD is estimated as:

$$\text{CoD} = \text{RfR} + \text{debt premium}$$

where:

CoD= cost of debt

RfR= risk-free rate

A5.1.6 Here (i) the risk-free rate is the same as in the CoE; and (ii) the debt premium represents the additional return required by investors to hold debt over risk-free assets. The debt premium is higher for companies that are considered by investors to be more risky.

A5.1.7 The WACC is then calculated as a weighted average of the two, with the weights representing the proportion of each type of financing in the company's capital structure.

$$\text{WACC} = g * \text{CoD} + (1 - g) * \text{CoE}$$

where:

g = gearing, i.e. the ratio of debt to the total capital base (debt + equity)

A5.1.8 I have estimated the individual parameters of the WACC for ABP as owner of Newport Docks.

A5.1.9 The risk-free rate measures the expected return on an investment free of default and systematic risk—i.e. where the realised return on the investment will be equal to the expected return. It reflects the time value of money, given that it represents the compensation that investors require in order to forgo current consumption in favour of future consumption.

A5.1.10 The risk-free rate has been estimated from data on the nominal yields for ten-year UK government bonds. In economies with minimal sovereign default risk, the yield on government-issued bonds represents a good proxy of the risk-free rate. The estimates of the risk-free rate are shown in Table A5.1 below. I have considered that the nominal risk-free rate ranges between 1.21% and 1.95%.

Table A5.1 Nominal yields on 10-year UK government bonds

	Yield
Six-month average	1.01%
One-year average	1.21%
Two-year average	1.52%
Five-year average	1.95%

Source: Oxera analysis, based on data from Datastream. The cut-off date for the analysis is 9 January 2017.

A5.1.11 The equity risk premium is not directly observable from market data, and must be inferred. The historical equity risk premium is the approach preferred by UK regulator, and can be estimated using long-run averages of realised equity returns over bond returns.

A5.1.12 The most widely cited source of historical evidence on the equity risk premium is the annual publication by Dimson, Marsh and Staunton (DMS), which estimates the historical ERP for 19 countries. Based on data between 1900 and 2014, and using the arithmetic average of returns, DMS estimates the equity risk premium of the UK to be 5.0%.

A5.1.13 Under the CAPM framework, the equity beta represents the extent to which the shareholders of the company are subject to ‘systematic risk’—i.e. risk arising as a result of correlation with the returns of the market as a whole.

A5.1.14 For privately held companies, the equity beta is usually estimated from that of comparable publicly listed businesses. A strictly comparable set would consist of other ports owners and operators in the UK for ABP. However, few of these companies are publicly listed, making them

ineligible for equity beta estimation. Extending the geographic scope to companies with the largest revenue area being Europe, Middle East and North Africa (EMEA) allows for a sufficient number of relevant comparators.

A5.1.15 Therefore, the equity beta for ABP has been estimated from the equity betas of publicly listed companies in the EMEA region falling under the sector classification categories of 'port and harbour operations' as defined by Bloomberg classification system.

A5.1.16 For the purpose of the WACC estimation, other idiosyncratic risks that ABP faces are not very relevant because they are not priced by investors, who assume that such risks can be diversified away.

A5.1.17 For the purpose of the equity beta estimation, it is also necessary to account for differences in capital structures across firms. This is done by using the asset betas, or unlevered betas, of the comparator firms as a benchmark. The resulting equity betas for ABP are then derived by 'levering' up the benchmark asset beta, using the financial leverage specific to these companies.

A5.1.18 For the purpose of levering the comparator asset beta to obtain the equity betas specific to these companies, it is often assumed that the debt beta is zero. There is no strong consensus on how the debt beta should be estimated, it is typically assumed to be zero for companies with investment-grade credit rating, and 0.1 for companies with a non-investment-grade credit rating. For example, UK regulators often use a debt beta of 0.1 for non-investment-grade companies.

A5.1.19 ABP has a limited amount of debt, with a net debt to equity ratio of around 0.13x. Therefore, its debt beta has been assumed to be zero. Table A5.2 shows the resulting equity beta estimates for ABP, derived from the comparator asset betas and the companies' leverage and debt beta estimates.

Table A5.2 Equity beta estimation

Comparator company	Equity beta	Gearing (%)	Asset beta
DP World Ltd	0.42	40.8	0.25
Eurokai GmbH & Co KGaA	0.26	4.4	0.25
Global Ports Investments plc	0.61	167.9	-0.42
Gold Bond Group Ltd/The	0.52	-0.07	0.53
Hamburger Hafen und Logistik AG	0.61	28.4	0.44
Luka Dunav AD Pančevo	-0.36	-44.2	-0.52
Luka Koper	1.18	30.1	0.82
Luka Ploce DD	0.61	-3.6	0.63
Novorossiysk Commercial Sea Port PJSC	0.56	1.5	0.55
Piraeus Port Authority SA	0.63	6.8	0.59
Salalah Port Services	0.03	9.8	0.03
Saudi Industrial Services CO	1.28	71.8	0.36
Sutton Harbour Holdings PLC	-0.11	80.2	-0.02
Thessaloniki Port Authority	0.39	-33.8	0.53
United Arab Shipping CO SAG	1.25	-15.4	1.45
Average			0.44
ABP gearing			11.8%
ABP debt beta			0
ABP equity beta			0.50

Note: Equity betas have been estimated using five-year weekly data.

Source: Oxera analysis, based on data from Bloomberg, financial accounts of ABP.

A5.1.20 The debt premium represents the additional return, over the risk-free rate, required by a company's debt holders.

A5.1.21 The overall CoD has been estimated using two approaches to define a range of plausible value. For the lower bound, I estimated the existing borrowing costs of the companies' embedded debt, as this represents the actual cost at which the companies are able to raise debt financing in the market. The one-year average yield of ABP's traded debt has been 2.7% for the period running between the 9 January 2016 and the 9 January 2017. I have also considered yields on corporate bond indices as a good proxy of ABP's CoD. Because ABP has a low gearing, the one-year average yields for A rated and BBB rated companies (3.8%) has been selected.

A5.1.22 Based on the individual parameter estimations described above, Table A5.3 shows the overall WACC for ABP.

Table A5.3 WACC estimation

Parameter	Unit	Low	High
Real risk-free rate	%	-0.8	0.0
Inflation	%	2.0	2.0
Nominal risk-free rate	%	1.2	2.0
Tax rate	%	20.0	20.0
Gearing	%	11.8	11.8
Cost of equity			
Equity risk premium	%	5.0	5.0
Equity beta	n/a	0.50	0.50
Nominal post-tax cost of equity	%	3.7	4.4
Cost of debt			
Debt premium	%	1.4	1.9
Nominal post-tax cost of debt	%	2.1	3.1
Nominal post-tax WACC	%	3.5	4.3

Source: Oxera analysis based on data from Bloomberg, financial accounts of ABP, Datastream, OECD statistics, Dimson-Marsh-Staunton database and HM Treasury.

A5.1.23 Therefore, based on the evidence presented in this appendix, the nominal post-tax WACC for ABP can be estimated to lie in a range between 3.5% and 4.3%. I have therefore considered the average WACC to be 3.9%.

IMPACT OF THE SCHEME THE PORT OF NEWPORT AND TENANTS