



Statement of essential facts

INVESTIGATION No. AD0086

Dumping investigation into rutile titanium dioxide originating in the People's
Republic of China

6 October 2026



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Section A: Introduction

A1. Investigation

1. This investigation covers the alleged dumping of rutile titanium dioxide imported into the United Kingdom (UK) from the People's Republic of China (the PRC). A full description of the goods concerned and intended recommendation can be found in [Section D: The goods concerned and the like goods](#)
2. This section briefly summarises the legal framework for this statement of essential facts (SEF) and the Trade Remedies Authority (TRA)'s main findings. The background to and details of the investigation are explained fully in the subsequent sections.
3. This SEF sets out a summary of the facts considered by the TRA during the investigation, those facts that have formed the basis of the TRA's intended final determination and the anti-dumping measure that the TRA intends to recommend to the Secretary of State for Business, Innovation, Science and Trade (Secretary of State).
4. It should be read in conjunction with other public documents available for this case, which are available on the [public file](#).
5. This SEF also informs interested parties who have supplied information how the TRA has considered and used the information provided to it. The SEF provides details of the analysis forming the basis of the intended determination and allows interested parties to make submissions in response.
6. Interested parties, contributors and any other person who has supplied information to the TRA are invited to make submissions within **20** calendar days of the publication date of this SEF, i.e., **before 09:00 UK time on 26 October 2026**, as per [Regulation 62\(2\)](#) of The Trade Remedies (Dumping and Subsidisation) (EU Exit) Regulations 2019 (S.I. 2019/450) (as amended) (the Regulations).
7. Any submissions received after this date may not be accepted by the TRA if to do so would significantly impede the progress of this investigation. Where the TRA rejects information for any reason, it will publish the reasons for rejection in the final determination.
8. Registered interested parties to the case can make submissions on the [Trade Remedies Service online platform \(TRS\)](#). These submissions must be accompanied by a non-confidential version of the submission for the public file. Those not registered on the TRS may send submissions by email to AD0086@traderemedies.gov.uk. These submissions must also be accompanied by a non-confidential version for the public file.
9. In exceptional circumstances it may not be possible to summarise confidential information. If this is the case, interested parties must provide a 'statement of reasons' setting out the reasons why the TRA should treat the information as confidential and



why summarisation of the information is not possible, as defined under [regulation 45\(6\)\(b\)](#) of the Regulations.

10. For further information about our investigations, please see our [public guidance](#).

A2. Legal framework

11. This SEF is made pursuant to [regulation 62](#) of the Regulations. It includes:

- The recommendation that the TRA intends to make;
- a summary of the facts considered during the investigation;
- those facts referred to in the summary that formed the basis of the intended recommendation;
- details of how the TRA has used the information supplied by interested parties in making the intended final determination; and
- details of the analysis forming the basis of the intended recommendation.

A3. Period of investigation and injury period

12. The period of investigation (POI) is 1 January 2025 to 31 December 2025.

13. To assess injury, the TRA has examined the period from 1 January 2022 to 31 December 2025 as the injury period (IP).

14. The application for this investigation included a request for the IP to start in 2023, as 2022 was claimed to be an anomalous year.¹ This has been disputed by exporter associations.² The TRA has maintained the IP as the three years immediately preceding the POI. This is because to shorten the IP to two years (and so start the IP in 2023) would unduly limit the data available to the TRA with which to assess injury, and to extend it to earlier than 2022 would increase the data burden on interested parties and would extend any potential anomalies in the data.

¹ Tronox, Application, [Trade Remedies Authority | AD0086 S-0000009706-J0Q3](#) pages 48-49, accessed 3 September 2026

² CNCIA, Comments on the Application and Initiation of investigation, [Trade Remedies Authority | AD0086 S-0000011165-T4L9](#), accessed 3 September 2026



Section B: Summary and findings

B1. Dumping

16. In accordance with [paragraph 1\(1\)](#) and [8\(1\)\(a\)](#) of Schedule 4 to the Taxation (Cross-border Trade) Act 2018 (the Act) the TRA has examined whether dumping of the goods concerned (for definition see [D1. Goods concerned](#)) has occurred.
17. The TRA has concluded that the goods concerned are being dumped into the UK from the PRC (see [Section F: Dumping](#)).

B2. Injury

18. In accordance with [paragraphs 5](#) and [8\(1\)\(b\)](#) of Schedule 4 to the Act, the TRA has examined whether the dumping of the goods concerned has caused, is causing, or threatens to cause injury to a UK industry in the like goods.
19. The TRA has concluded that the UK industry is suffering from a threat of material injury (see [Section G: Injury](#)).

B3. Economic interest test (EIT)

20. The TRA has considered the evidence before it and the following factors set out under [paragraph 25](#) of Schedule 4 to the Act:
 - The injury to UK industry in the like goods caused by dumping of the goods concerned and the benefits to that UK industry in removing that injury.
 - The economic significance of affected industries and consumers in the UK.
 - The likely impact on affected industries and consumers in the UK.
 - The likely impact on particular geographic areas, or particular groups, in the UK.
 - The likely consequences for the competitive environment, and for the structure of markets for like goods, in the UK.
 - Such other matters as the TRA considered relevant.
21. The TRA has concluded that the application of the anti-dumping measures it intends to recommend to the Secretary of State meets the EIT (see [Section I: Economic interest test](#)).



B4. Intended final determination and recommended measure

22. In accordance with [regulation 62\(1\)](#) of the Regulations, before making a final affirmative determination for the purpose of [paragraph 11\(5\)](#) of Schedule 4 to the Act, the TRA must publish a SEF that sets out the intended final determination, a summary of the facts considered during the investigation, and a summary of those facts that formed the basis of the intended final determination.
23. The TRA intends to recommend that the Secretary of State impose a mixed duty for a period of five years on imports of the goods concerned.
24. The rates of anti-dumping duty the TRA intends to recommend are:

Overseas exporter/producer	Preferred option - Duty amount
Cooperating, sampled exporters: Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD.	48.29% <i>ad valorem</i> , minimum of £0.66/KG
Cooperating, non-sampled exporters: Shandong Doguide, Pangang Group, Kunming Donghao, Yibin Tianyuan Haifeng Hetai, Guangdong Huiyun Titanium Industry Corporation, Panzhuhua Darui Technology, Panzhuhua Dongfang Titanium Industry, Ningbo Xinfu Titanium Dioxide, Anhui Gold Star Titanium Dioxide (Group)	48.29% <i>ad valorem</i> , minimum of £0.66/KG
All other overseas exporters (residual amount)	63.66% <i>ad valorem</i> , Minimum of £0.87/KG

Figure 1 Recommended mixed duty rates



Section C: Background

C1. Initiation

25. On 6 January 2026, the TRA received [an application](#) lodged by Tronox Pigment UK (the applicant) alleging that rutile titanium dioxide imported into the UK from the PRC has been or is being dumped and that the dumping has caused, is causing or threatens to cause injury to the UK industry in the like goods.
26. The TRA was satisfied that the application contained sufficient evidence of dumping and injury (including a threat of material injury) to justify the initiation of the investigation, and that the requirements referred to in [paragraph 9](#) of Schedule 4 to the Act and [regulation 51](#) of the Regulations had been met.
27. The dumping investigation was initiated by the TRA on 3 March 2026, and the [Notice of Initiation](#) was published on that date.
28. The then Secretary of State for Business and Trade (now the Secretary of State for Business, Innovation, Science and Trade) (Secretary of State), the Government of China (GOC) Ministry of Commerce and other interested parties and contributors were notified accordingly and invited to register on the [Trade Remedies Service](#) to participate in the investigation.

C2. Participation in the investigation

29. The TRA invited interested parties and contributors to register in order to participate in the investigation.
30. [Annex A: Interested parties and contributors](#) contains a summary of information received from all interested parties and contributors.

C2.1 UK producers

31. The only UK producer to participate in this investigation is the applicant, Tronox Pigment UK Limited.

C2.2 Exporters/Producers from the PRC

32. 17 exporters of the goods concerned registered an interest in this investigation:

- Shandong Doguide Group Co., Ltd.
- Pangang Group Titanium Industry Co., Ltd.
- Kunming Donghao Technology Development Co., Ltd.
- Shandong Jinhai Titanium Resources Technology Co., Ltd.
- Shandong Xianghai Titanium Co., Ltd.



- Yibin Tianyuan Haifeng Hetai Co. Ltd.
- Guangdong Huiyun Titanium Industry Corporation Limited
- Panzhihua Darui Technology Co., Ltd.
- Panzhihua Dongfang Titanium Industry Co., Ltd.
- Ningbo Xinfu Titanium Dioxide Co. Ltd.
- LB Sichuan Titanium Industry Co. Ltd.
- Henan Billions Advanced Material Co. Ltd. (Henan Billions)
- LB Lufeng Titanium Industry Co., Ltd.
- LB Xiangyang Titanium Industry Co., Ltd.
- LB Group Co., Ltd.
- Anhui Gold Star Titanium Dioxide (Group) Co. Ltd.
- Inter-China Chemical Co., Ltd.

33. Owing to the number of responses received during the registration period, the TRA limited its examination of overseas exporters. The TRA published a [notice of proposed sample](#) on 27 March 2026 and a [notice of final sample](#) on 8 April 2026.

34. The final sample consisted of:

- Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., Ltd, Henan Billions Advanced Material Co., Ltd, LB Lufeng Titanium Co., Ltd, LB Xiangyang Titanium Industry Co., Ltd, LB Group Co., Ltd; and
- Lubei Group: Shandong Jinhai Titanium Resources Technology Co., Ltd, Shandong Xianghai Titanium Co., Ltd.

35. The LB Group exporters, and associated companies, submitted questionnaire responses to the investigation and cooperated with the requirements of the investigation. The Lubei Group companies did not submit questionnaire responses to the investigation and are non-cooperative sampled exporters. The Lubei Group have therefore not received an individual margin and are subject to the 'all other exporter (residual)' duty rate.

C2.3 Importers

36. Two anonymous importers, four importer/users (Megachem (UK) Ltd., IMCD UK Limited, Oxerra UK Limited and Prisma Group (Prisma Colour Ltd, Silvergate Plastics) and one exporter associated importer (Billions Europe Ltd (BEL)) registered to the investigation.

C2.4 Foreign government

37. One foreign government registered to the case:

- Ministry of Commerce of the People's Republic of China (MOFCOM)



C2.5 Contributors

38. Other interested parties / contributors are:

- 1) China National Coatings Industry Association (CNCIA)
- 2) Ineos Compounds Holdings Limited
- 3) British Coatings Federation Limited
- 4) Chemical Business Association Ltd
- 5) Chemical Industries Association Limited
- 6) Carbon International Limited
- 7) Dacrylate Paints Limited
- 8) Ineos Enterprises Holdings II Limited
- 9) Ineos Tyssedal
- 10) Inovyn Europe Limited (Inovyn)
- 11) Manor Coating Systems Limited
- 12) Rakem Group Limited
- 13) Kronos Worldwide, Inc.
- 14) TDIC REACH Consortium

C2.6 Third country producers

39. On 31 March 2026, the TRA published a [note to public file](#) requesting registration from titanium dioxide producers in Brazil, India, Malaysia, Mexico, Morocco and South Korea to register to the case if willing to cooperate as an appropriate representative third country, should it be required. Following this, the TRA received registration forms from the following interested parties:

- 1) Tronox Pigmentos Do Brazil S.A (Tronox Brazil)
- 2) The Chemours Company México, S. de R.L. de C.V.(Chemours)

40. As a result, on 8 May 2026, the TRA published a [note to the public file](#) to provisionally chose Brazil and Mexico as the representative third countries for this investigation.

41. Following this, on 29 May 2026, the TRA published Chemours [second registration form](#), withdrawing from the investigation, stating that Mexico is not an appropriate analogue country. Following Chemours withdrawal from the investigation and given that they are the only producer in Mexico, the TRA chose to use only Brazil as a representative third country.

C3. Verification of data

42. The TRA undertook verification activities in relation to the information provided by the sampled cooperating interested parties, during which the completeness, relevance, and accuracy of that information was assessed. The TRA has had regard to the information supplied by interested parties and contributors, provided that this information:

- Complied with the applicable statutory requirements and the TRA's public guidance;



- was verifiable;
 - could be used without undue difficulty; and
 - was supplied within an applicable time limit and in a form that the TRA requested.
43. From the 19 to 22 May 2026, the TRA conducted an onsite verification visit with the applicant.
44. From the 8 to 10 June 2026, the TRA conducted an onsite verification visit with BEL.
45. From the 24 August to 4 September, the TRA conducted an onsite verification visit with Henan Billions and LB Group Co., Ltd.
46. Verification reports were produced for each of the parties verified and non-confidential versions of these reports are available on the [AD0086 public file](#).
47. Secondary source information was used in accordance with the Regulations. This secondary information was treated with special circumspection and, where practicable, verified using independent sources. This included, but was not limited to, official import statistics and data pertaining to relevant markets. Where data was not considered to be verifiable, the areas have been highlighted and the TRA has drawn conclusions where possible.



Section D: The goods concerned and the like goods

D1. Goods concerned

48. The goods concerned are defined in [regulation 2](#) of the Regulations as ‘the goods described in the relevant Notice of Initiation of a dumping investigation under regulation 65(1) [of the Regulations]’.

49. The goods concerned in this investigation are rutile titanium dioxide originating in the PRC and exported to the UK, described in [the Notice of Initiation](#) as:

Rutile titanium oxides in pigments and preparations based on rutile titanium dioxide, containing a minimum of 80% by weight of titanium dioxide calculated on the dry matter and having all types of particle sizes, classified under Chemical Abstracts Service Registry Numbers 12065 65-5 and 13463-67-7.

50. The goods concerned are subject to the following commodity codes:

- | | |
|----------------|----------------|
| • 2823 0000 10 | • 3206 1100 10 |
| • 2823 0000 30 | • 3206 1100 30 |
| • 2823 0000 80 | • 3206 1100 80 |
| • 2823 0000 83 | • 3206 1100 85 |

D2. Like goods

51. In accordance with paragraph 7 of Schedule 4 to the Act, the TRA refers to ‘like goods’ as those which are like the goods concerned in all respects or, if there are no such goods, goods which, although not alike in all respects have characteristics which closely resemble them and are produced by the UK Industry.

52. The like goods are rutile titanium dioxides which are manufactured by UK industry. These goods are not like the goods concerned in all respects, as various different purities, grades and additives are included in the goods concerned when compared to the goods manufactured by UK industry. However, the goods manufactured by UK industry do have characteristics which closely resemble the goods concerned. These characteristics relate to both the physical and commercial likeness of the goods.

53. When considering physical likeness, the appearance, chemical composition, contents, grades/standards, purities, dimensions and weights of the goods manufactured by UK industry closely resemble the goods concerned.

54. The commercial likeness, including end use, distribution channels, downstream users’ views of interchangeability, identity of customers, competition on the UK market and prices, of the goods produced by UK industry closely resemble that of the goods concerned.



55. The TRA has determined that, in this case, the rutile titanium dioxide manufactured by UK industry are like goods to the goods concerned as they have characteristics that closely resemble the goods concerned.

D3.1 Ink grade rutile titanium dioxide

56. The TRA received submissions to the investigation in relation to rutile titanium dioxide that is used in the manufacture of ink.³ We [published a note](#) to the public file to request comment and evidence in relation to this point. A number of submissions were made, as set out in [Annex A: Interested parties and contributors](#).

57. UK industry have submitted that some general use rutile titanium dioxide has been used to manufacture ink in the UK.⁴ Exporters, importers and UK industry agree that there is not, and has not been during the IP, any UK production of ink specific rutile titanium dioxide.⁵ Interested parties further agree that the price of ink grade rutile titanium dioxide is generally comparable to that of the general grades of rutile titanium dioxide.⁶

58. The submissions in favour of excluding ink grade rutile titanium dioxide from the investigation, or from any resultant measure, claim that ink specific grade of rutile titanium dioxide:

- 1) Is made through a specific and specialised version of the sulphate production process;⁷
- 2) has different physical properties to general rutile titanium dioxide manufactured by UK industry;⁸
- 3) is used by a distinct group of downstream customers who are separate from those that use general rutile titanium dioxide;⁹ and
- 4) does not compete, and is not substitutable with, the general rutile titanium dioxide produced by UK industry.¹⁰

59. The submissions that support the inclusion of ink grade rutile titanium dioxide in the investigation, and any resultant measure, claim that the ink specific grade of rutile titanium dioxide:

³ [Trade Remedies Authority | AD0086](#), accessed 8 September 2026

⁴ Tronox, Comments on pre-sampling questionnaires, [Trade Remedies Authority | AD0086_S-0000010721-F9F7](#) page 6, accessed 3 September 2026

⁵ Billions Europe Ltd, Requests by Billions Europe Ltd. To Exclude or Exempt Ink-Grade Titanium Dioxide from the Scope of the Investigation, [General_SD-0000056074-D1R5.pdf](#) pages 8-9, accessed 3 September 2026

⁶ Tronox, Comments on pre-sampling questionnaires, [General_SD-0000057364-G8R6.pdf](#) page 10, accessed 4 September 2026

⁷ Billions Europe, Request to Exclude or Exempt Ink-Grade Titanium Dioxide from the Scope of the Investigation, [General_SD-0000056074-D1R5.pdf](#), pages 3-4 and 7, accessed 7 September 2026

⁸ Billions Europe, Request to Exclude or Exempt Ink-Grade Titanium Dioxide from the Scope of the Investigation, [General_SD-0000056074-D1R5.pdf](#), page 5, accessed 7 September 2026

⁹ Billions Europe, Request to Exclude or Exempt Ink-Grade Titanium Dioxide from the Scope of the Investigation, [General_SD-0000056074-D1R5.pdf](#), page 8, accessed 7 September 2026

¹⁰ Billions Europe, Request to Exclude or Exempt Ink-Grade Titanium Dioxide from the Scope of the Investigation, [General_SD-0000056074-D1R5.pdf](#), pages 6-8, accessed 7 September 2026



- 1) can be manufactured using both the chloride and sulphate production process;¹¹
- 2) has physical properties that are indistinguishable from general grades of rutile titanium dioxide;¹²
- 3) is marketed and sold with recommended uses beyond ink production;¹³ and
- 4) does compete, and is substitutable, with the general grades of rutile titanium dioxide produced by UK industry.¹⁴

60. The TRA has considered the submissions made in relation to this ink grade of rutile titanium dioxide. We have assessed physical properties, comparing ink grade rutile titanium dioxide that is imported from the PRC to the UK against the general use rutile titanium dioxide manufactured in the UK. Both are a white powder substance, with a limited variation of particle size and abrasiveness that, whilst not identical in all respects, do have a close resemblance to one another.
61. The chemical composition and content of the general rutile titanium dioxide manufactured by UK industry closely resemble those of the ink specific grade of rutile titanium dioxide imported from the PRC. We have determined that there is a physical likeness whereby the goods manufactured by UK industry closely resemble the physical characteristics of the ink specific goods concerned.
62. The TRA have further assessed the commercial properties of ink grade rutile titanium dioxide imported from the PRC to the UK and compared that to the goods manufactured by the UK industry. The majority of ink specific grade rutile titanium dioxide is sold with multiple possible uses by exporters from the PRC,¹⁵ and can be used for applications other than ink manufacturing. Limited evidence has also been submitted of some specific ink manufacturing processes having the ability to use general grades of rutile titanium dioxide.
63. The distribution channels, and some of the customers, of the general grades of rutile titanium dioxide closely resemble those of the ink specific grade of rutile titanium dioxide imported from the PRC. We have determined that there is commercial likeness whereby the goods manufactured by UK industry closely resemble the commercial characteristics of the ink specific goods concerned.
64. The TRA has therefore concluded that the rutile titanium dioxide manufactured in the UK has characteristics closely resembling the goods concerned. The rutile titanium dioxide products manufactured in the UK are like goods when compared to the whole scope of the goods concerned imported from the PRC, including the ink specific grade of rutile titanium dioxide that is included in the definition of the goods concerned.

¹¹ Tronox, Comments on pre-sampling questionnaires, [General_SD-0000057364-G8R6.pdf](#) pages 4 and 9, accessed 4 September 2026

¹² Tronox, Comments on pre-sampling questionnaires, [General_SD-0000057364-G8R6.pdf](#) pages 2 and 10, accessed 4 September 2026

¹³ Tronox, Comments on pre-sampling questionnaires, [General_SD-0000057364-G8R6.pdf](#) pages 3 and 5, accessed 4 September 2026

¹⁴ Tronox, Comments on pre-sampling questionnaires, [General_SD-0000057364-G8R6.pdf](#) page 6, accessed 4 September 2026

¹⁵ Billions Europe, [Trade Remedies Authority | AD0086_S-0000010351-Y9X5](#), accessed 18 September 2026



D4. Product control numbers

65. The TRA uses product control numbers (PCNs) to define and group different types of products that fall under the goods description above.
66. PCNs are created on the basis of the main physical characteristics differentiating the types of products, providing that those characteristics have an impact on price and/or cost.
67. The PCN structure used in this investigation can be seen in the table below:

Field description	Product properties	PCN value
Production method	Produced using sulphate method	S
	Produced using chloride method	C
Rutile titanium dioxide content per weight, calculated on the dry matter	>80 to 98%	800
	>98 to 99.5%	980
	>99.5%	995

Figure 2 PCN structure

For example, a product produced using the chloride method with a 99.0% rutile titanium dioxide content per weight would have the code: C980

68. The PCN structure was provided to interested parties and contributors for comment in the registration forms following initiation of the investigation. No comments requesting changes or adjustments to the PCN structure were received.

D5. PCN analysis

69. The TRA's calculations of dumping and injury margins are based on matching PCNs, which ensures that it compares cost and price of comparable goods.
70. For dumping margin calculations, the TRA compares the PCNs produced and sold by overseas exporters in their domestic market with the PCNs produced and exported by these overseas exporters into the UK.
71. For injury margin calculations the TRA matches the PCNs produced and exported by overseas exporters into the UK with the PCNs produced by UK industry and sold on the UK market.
72. The TRA found sufficient PCN matches to complete the calculations. For the dumping margin calculation, no adjustments for characteristics or prices were necessary, as there are direct PCN matches and the goods are sold with comparable routes to market.



73. In the injury margin calculation, the PCNs that differentiated between rutile titanium dioxide produced using the sulphate process and the chloride process were collapsed, as the goods concerned use both processes and compete with the like goods produced in the UK which only use the chloride production process.



Section E: The UK industry and market

E1. UK industry

74. In accordance with paragraph 6(1) of Schedule 4 of the Act, the UK industry is defined as:
- a) all the producers in the UK of like goods, or
 - b) those of them whose collective output of like goods constitutes a major proportion of the total production of those goods in the UK.
75. Information provided in the application and obtained through research into secondary sources, such as official publications and press releases was used to establish the UK industry.
76. The TRA established that the UK industry was made up of two UK producers (the applicant and Venator Materials UK Ltd (Venator)) during the IP who accounted for an estimated average annual production of the like goods of 135-235,000 metric tonnes (MT) during that same period.¹⁶
77. The applicant produced like goods throughout the IP and continue to do so.¹⁷ Venator was a producer of like goods for all but the final 2-3 months of the IP,¹⁸ when it entered administration and ceased production.¹⁹ At the time of the application and initiation of this investigation in March 2026, Venator were not producing the like goods.
78. During the majority of the IP, all of the producers in the UK of like goods were the applicant and Venator. In the final months of the IP and at the initiation of this investigation, the applicant was only producer in the UK of like goods and so were the UK industry. Venator's UK production facility has since been purchased by LB Group (who operate the registered exporters to this investigation), they have restarted production in August 2026, as a new company, Tioxide Materials Ltd.^{20, 21}
79. The definition of UK industry that we are using for this investigation follows paragraph 6(1)(a) of Schedule 4 of the Act, which is all of the producers in the UK of like goods; the applicant and Venator (from the start of the IP until the product site was transitioned to an idle state in October 2025).²²

¹⁶ Tronox, Annex 1 of Application, [Application_SD-0000063116-R0K9.xlsx](#), accessed 4 September 2026

¹⁷ [Stallingborough Plant - Tronox](#), accessed 4 September 2026

¹⁸ Hartlepool Mail, [Former Hartlepool Venator operations sold to leading Chinese-based manufacturer LB Group](#), accessed 7 September 2026

¹⁹ [Venator Materials UK Ltd agrees sale of Greatham site and associated TiO₂ assets to LB Group – Venator](#), accessed 7 September 2026

²⁰ Companies House, [TIOXIDE MATERIALS LTD overview - Find and update company information - GOV.UK](#), accessed 4 September 2026

²¹ Tioxide, [Tioxide restarts TiO₂ plant in UK - heralding new era for pigment production at historic Greatham site - Tioxide](#), accessed 7 September 2026

²² [Venator Materials UK Ltd agrees sale of Greatham site and associated TiO₂ assets to LB Group – Venator](#), accessed 4 September 2026

E2. UK market

80. Rutile titanium dioxide is an intermediate industrial product used principally as a high-performance white pigment. It makes products white, bright and opaque. In the UK, it is used in coatings (including paints), plastics, paper, laminates, inks, fibres, and other specialist applications. Evidence provided to the TRA indicates that coatings and plastics are the largest end uses, while paper, inks, fibres, pharmaceuticals and other specialist applications each represented smaller shares.

E2.1 Production processes

81. UK producers of rutile titanium dioxide exclusively manufacture using the chloride production process, where feedstocks are chlorinated and condensed to create an intermediate product - TiCl_4 - which is then oxidized to create raw pigment. This is then finished for bespoke end use properties.

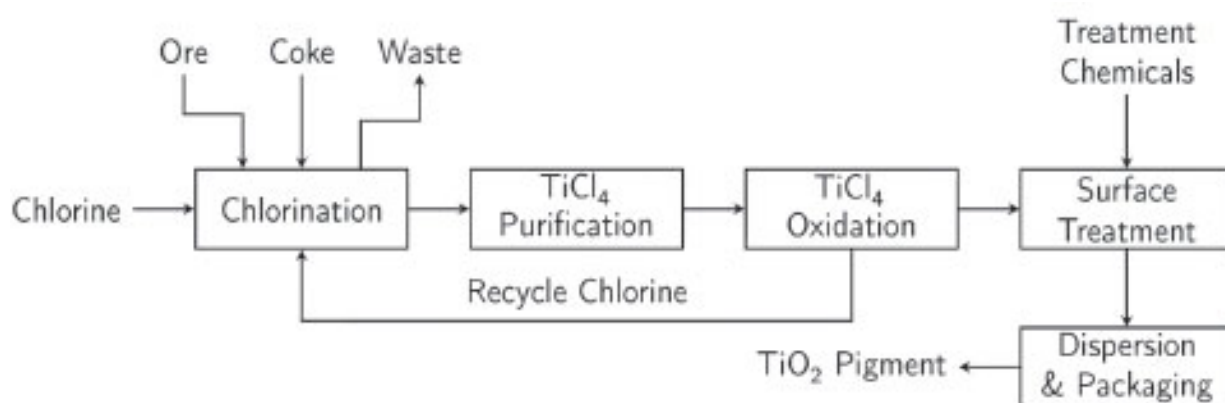


Figure 3 Titanium dioxide pigment manufacturing via the chloride process²³

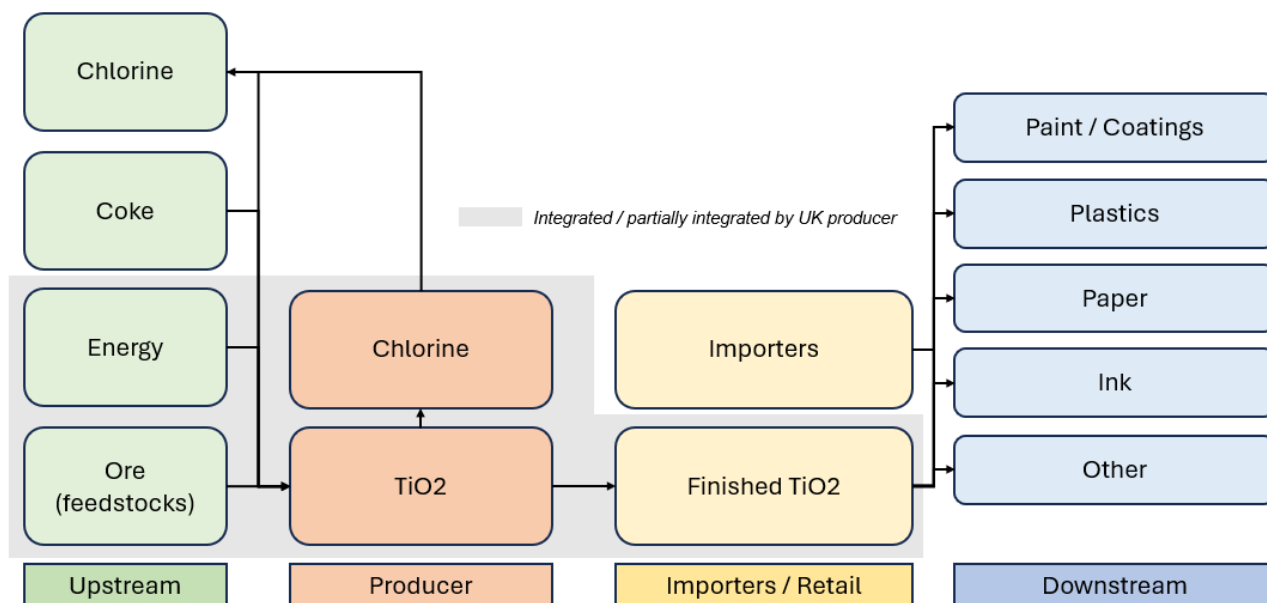
82. UK producers typically sell directly to industrial customers, while imported goods may be supplied through importer-distributors or purchased directly by downstream manufacturers. Consumers are therefore generally affected indirectly through the purchase of final goods containing rutile titanium dioxide, including paints, plastics, flooring, packaging and printed products.

83. Some inputs for UK producers are either partially or completely vertically integrated into the supply chain, with a notable exception of chlorine. UK production of rutile titanium dioxide provides significant demand for the UK's sole chlorine producer, Inovyn. Chlorine is hazardous and cannot easily be stored in large quantities. The applicant states that its demand for chlorine provides a reliable outlet which supports the efficient operation and overall economics of UK chlorine production.²⁴

²³ SciELO, Journal of the Southern African Institute of Mining and Metallurgy, [Value-in-use model for chlorination of titania feedstocks](#), accessed 7 September 2026

²⁴ Tronox, Application, [General SD-0000062484-T9D6.pdf](#), page 61, accessed 4 September 2026

84. The UK supply chain structure for rutile titanium dioxide is:



85. The market includes both standard and more specialised grades. For standard grades, suppliers compete on price, product performance and security of supply. Technical requirements are more important for some applications, particularly where a customer requires specific performance characteristics of a particular grade. Evidence gathered during this investigation indicates that dedicated rutile titanium dioxide grades for the production of white graphic inks are not manufactured in the UK, so users of those grades rely on imported supply.

E2.2 Competition

86. Competition in the UK market is provided by UK producers, PRC suppliers and suppliers from the rest of the world. The cessation of production by Venator in the final months of the POI reduced the number of active UK producers from two to one. Following LB Group's acquisition and recommissioning of the former Venator facility, Tioxide commenced production at the Greatham site on 18 August 2026. The site is currently operating on a reduced basis and undergoing a phased ramp-up, with Tioxide aiming to achieve full operational capacity by early 2027.²⁵

87. TRA market share analysis based on HM Revenue and Customs's (HMRC's) Country of Origin (COO) overseas trade in goods statistics (OTS) data, at an 8-digit level, and confidential data supplied by the applicant estimates that UK producers supply approximately 30% to 50% of the market. Approximately 20% to 30% of demand is met by imports from the PRC. And approximately 30% to 40% from the rest of the world.

²⁵ Tioxide, [Tioxide restarts TiO₂ plant in UK - heralding new era for pigment production at historic Greatham site - Tioxide](#), accessed 7 September 2026

88. Across the IP, estimated UK industry output declined overall by approximately 6% per year. [G1. Injury Analysis](#) provides the TRA's detailed assessment of import volumes, prices, market share and the effect of the dumped goods on the UK industry. [Section I: Economic interest test](#) considers the economic significance of the affected groups and the likely consequences of a measure for the competitive environment and the structure of the UK market.
89. Overseas producers, including those situated in the PRC, manufacture rutile titanium dioxide through both the chloride and sulphate production processes. In the sulphate process, the feedstocks are treated with sulfuric acid. The resulting product is then washed and dried to create an intermediate product, which is then subject to milling and finishing treatments to make the rutile titanium dioxide application specific.

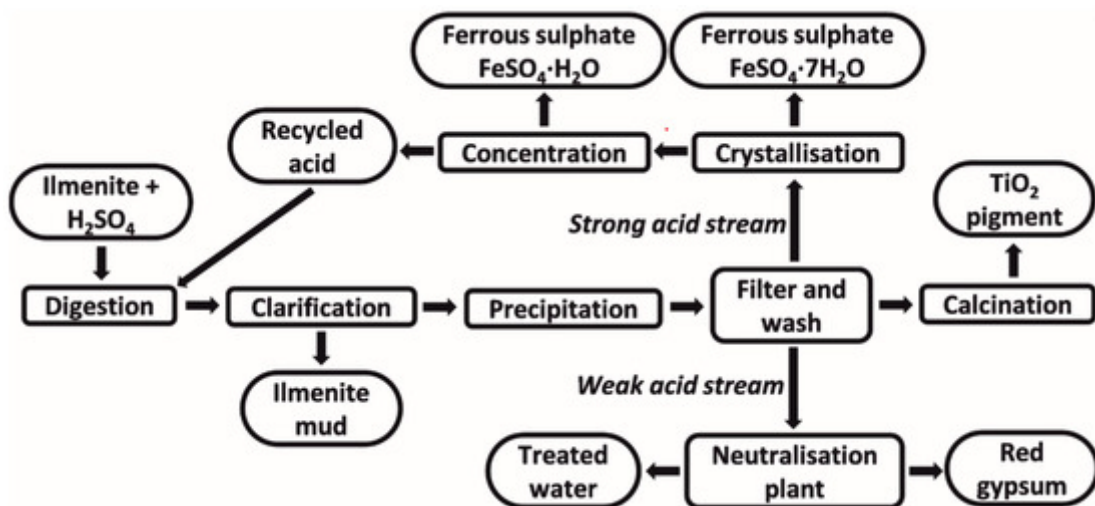


Figure 5 Titanium dioxide pigment manufacturing via the sulphate process²⁶

90. The sulphate method requires lower purity feedstocks but typically requires more energy as an input alongside generating more solid waste. Rutile titanium dioxide produced via the sulphate method may offer different benefits depending on end use, particularly in the production of graphic ink for printing.

²⁶ MDPI, [A Review of the Commercial Uses of Sulphate Minerals from the Titanium Dioxide Pigment Industry: The Case of Huelva \(Spain\)](#), accessed 7 September 2026



Section F: Dumping

91. In accordance with paragraph 1(1) of Schedule 4 to the Act, goods are ‘dumped’ in the UK when those goods are imported into the UK, and their export price is less than their normal value.
92. The TRA has assessed whether the goods concerned are being dumped in accordance with paragraphs 1(1) and 8(1)(a) of Schedule 4 to the Act.
93. Paragraph 1(2) of Schedule 4 to the Act defines the ‘normal value’ of goods as:
- a) the comparable price, in the ordinary course of trade, for like goods when destined for consumption in the exporting foreign country or territory, or
 - b) such other price or value as may be determined in accordance with provision made by regulations for specified cases where it is not appropriate to use the price in paragraph (a).
94. The TRA has calculated dumping margins in accordance with paragraph 2 of Schedule 4 to the Act and regulation 6(2) of the Regulations. Calculating the dumping margin involved the following stages:
- 1) Calculating the normal value of the goods concerned;
 - 2) determining the export price; and
 - 3) ensuring a fair comparison between the normal value and the export price.
95. The dumping amount is the difference between the export price and the normal value of the goods being dumped. The dumping margin is the amount of dumping expressed as a percentage of the export price at a level of the cost of insurance and freight (CIF).
96. One exporter, in its registration document, submitted that sulphuric acid costs had fluctuated throughout the POI.²⁷ This exporter was not selected as part of the sample of exporters to receive individual calculations, nevertheless the TRA decided to conduct the dumping calculation on a quarterly costs basis to take account of potential fluctuating costs and allow for the recovery of any resultant losses.
97. The TRA calculated the dumping margin using data provided by the LB Group companies, which were the only cooperating sampled exporters. These companies were the exporters LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD, alongside data from associated traders Billions Europe Ltd and Billions (Hong Kong) Cooperation Ltd.

²⁷ ANHUI GOLD STAR TITANIUM DIOXIDE (GROUP) CO., LTD. Registration form, [Registration-of-Interest_SD-0000059602-B3M6.pdf](#) page 7, accessed 4 September 2026



F1. Exporting country analysis

98. The TRA has established that there were more than 60 overseas producers of the goods in scope of the investigation during the POI, of which at least 17 exported the goods concerned into the UK. This is based upon information provided to the TRA in the application for this investigation, registrations to this investigation and information obtained through research using secondary sources.
99. Based on information published by the Titanium Dioxide Industrial Technology Innovation Strategic Alliance (a Chinese industry/academia research institution), the TRA established a total production of 4.72 million MT of titanium dioxide in the PRC in the POI, 86.9% (4.103 million MT) of which was rutile titanium dioxide.^{28, 29, 30}
100. During the POI, imports of the goods concerned accounted for an estimated volume of 18,542,968 MT and export value of £32,850,215 GBP.³¹ This is based on HMRC COO OTS data of UK imports reported to the 8-digit level for commodity codes 2823 0000³² and 3206 1100.³³ It includes some out of scope products, such as anatase titanium dioxide or products that are below 80% titanium dioxide by weight calculated on the dry matter. Despite these limitations, the HMRC COO OTS data is the best information available to the investigation when considering imports on a country basis.
101. The application for this investigation claims that ‘almost all’ imports under the 2823 0000 commodity code are anatase titanium dioxide, and ‘almost all’ imports under the 3206 1100 commodity code are rutile titanium dioxide (the goods concerned). The application puts the share of imports of anatase titanium dioxide at 3-10% of the volume of imports under the two commodity codes.³⁴
102. The HMRC COO OTS data shows imports from the PRC under the 2823 0000 heading account for 1,299,300 MT and £2,501,638 GBP, with commodity code 3206 1100 including imports of 17,243,668 MT and £28,680,806 GBP. This HMRC data records imports from the PRC of the 3206 1100 code as 93% by volume of total imports from the PRC under the 2823 0000 and 3206 1100 codes combined.

²⁸ SunSirs, Commodity Data Group, [SunSirs: China's Titanium Dioxide Output to Reach 4.72 Million Tons in 2025](#), accessed 8 September 2026

²⁹ SunSirs, Commodity Data Group, [SunSirs: Statistics Show China's Titanium Dioxide Production Capacity and Output Both Decline for the First Time in 2025](#), accessed 8 September 2026

³⁰ [China's Titanium Dioxide Output Declines as Capacity Surplus Grows - Blooming](#), accessed 8 September 2026

³¹ 8-digit country of origin data extracted from HMRC website, accessed 12 February 2026

³² Heading 2823 – Titanium oxides [Titanium oxides - UK Integrated Online Tariff - GOV.UK](#), accessed 1 October 2026

³³ Heading 320611 – Pigments and preparations based on titanium dioxide [Pigments and preparations based on titanium dioxide - UK Integrated Online Tariff - GOV.UK](#), accessed 1 October 2026

³⁴ Tronox, Application, [General_SD-0000062484-T9D6.pdf](#), page 43, accessed 4 September 2026



103. The Titanium Dioxide Industry Technology Innovation Strategic Alliance reports that, of all titanium dioxide manufactured in the PRC in the POI, 86.9% is rutile titanium dioxide, with anatase being 10.7% and other making up 2.4% by volume.³⁵
104. As set out above, the TRA has determined that 86.9% to 93% of imports declared under the 2823 0000 and 3206 1100 codes are rutile titanium dioxide (the goods concerned). The TRA therefore concludes that total import volumes of the goods concerned in the POI are 16,113,839 to 17,244,960 MT.
105. The TRA has estimated that imports of goods concerned from the PRC account for 33.87% of total imports of rutile titanium dioxide by volume. This is based on the 8 digit HMRC COO OTS data. The TRA does not have sufficient information with which to estimate the split for all countries between rutile and other types of titanium dioxide, and so cannot account for what it may be.
106. A comparison of the estimated production volume in the PRC with the estimated export volume to the UK shows that approximately 3.9% to 4.2% of the respective goods produced in the PRC were exported into the UK.

F2. Normal value

107. In accordance with regulation 6(1) of the Regulations, Part 2 of the Regulations applies where the TRA is required to determine whether goods have been or are being dumped into the UK in accordance with paragraph 1 of Schedule 4 to the Act. Regulation 6(2)(a) of the Regulations states that in order to make such a determination, the TRA must determine the normal value of the goods concerned.
108. In accordance with regulation 7(1) of the Regulations, the TRA must use the comparable price to determine the normal value unless it is not appropriate to use that price.
109. Regulation 7(2) of the Regulations sets out the circumstances in which it is not appropriate to use the comparable price to determine the normal value of the goods concerned. This includes where, because of a particular market situation (PMS), such sales do not permit a proper comparison between the like goods destined for consumption in the exporting country or territory and the goods concerned, in accordance with regulation 7(2)(b) of the Regulations.
110. Regulation 7(4) of the Regulations sets out that for the purposes of paragraph 7(2)(b) a PMS includes situations where prices are artificially low, there is significant barter trade, or prices reflect non-commercial factors.
111. The applicant has submitted the following allegations of a PMS in relation to the like goods produced and destined for consumption in the PRC.

³⁵ SunSirs, Commodity Data Group, [SunSirs: China's Titanium Dioxide Output to Reach 4.72 Million Tons in 2025](#), accessed 8 September 2026



State planning of the economy

112. The applicant alleges that the GOC is involved at all stages of the economy and in both private and public companies, for the purpose of facilitating the Five-Year Plan (FYP). The result of this is that strategic and tactical decisions are made on the basis of GOC planning and therefore that costs and prices within the PRC economy do not reflect market conditions.
113. The applicant has cited sources including the European Commission's (EC) investigation, the United States of America (USA) Department of Commerce's (DOC's) investigation into Aluminium Foil, TRA investigations and GOC documentation.

Energy costs

114. The applicant states that titanium dioxide production is an energy intensive industry and that GOC intervention causes prices to be artificially low using both fixed and guided prices. The applicant also states that the National Development and Reform Commission ('NDRC') has broad powers to set prices and promote price reforms for important commodities.
115. The applicant references the TRA investigation into Aluminium Extrusions, WTO China Trade policy review, NDRC documentation and the PRC Price law.

Land costs

116. The applicant alleges that GOC intervention distorts land costs. The GOC owns all land and can legally expropriate land for the public interest. Land use is determined in accordance with overall plan and land use guidance set out by the GOC favouring encouraged industries, including rutile titanium dioxide. GOC also supports National Economic and Technological Development Zones with reduced fees and taxes, and the applicant provides evidence of refunds of land use tax.
117. The applicant has referenced TRA investigations, the PRC constitution, 14th Five-Year Plan (14FYP), provincial subsidy offerings, PRC tax policies and the 2021 & 2023 accounts of LB Group, who are the sampled PRC producer/exporter group in this investigation.

Labour costs

118. The applicant alleges that labour costs are distorted by non-commercial factors. It specifies that the Hukou registration system restricts work force availability by limiting job options for certain people. It alleges that trade unions are ineffective due to the need to be government registered, effectively removing the right to strike and collective bargaining. It also alleges that a large informal economy exists, caused by employers of rural migrant workers, not paying social security and associated fees thus reducing costs.



119. The applicant references TRA investigations, the PRC constitution, various academic papers and PRC trade union law.

Finance costs

120. The applicant states that the cost of finance in the PRC is distorted by non-commercial factors. Specifically, that bonds and loans are issued based on GOC strategy which also influences interest rates.
121. References are made to the TRA Biodiesel findings, 14FYP, LB Group Accounts 2021 & 2023 and CHTi Government subsidies list 2023.

Tax costs

122. The applicant alleges that the GOC adopted policies to reduce the tax cost for certain producers, and that a range of tax incentives exists for the manufacturing industry, including reduced corporation tax for high tech industries, which extends to titanium dioxide.
123. The applicant references the TRA's findings in the Excavators investigation, and the PRC 14FYP.

Research and design (R&D) costs

124. The applicant states that the GOC is promoting and heavily investing in R&D by promoting, and negating the risks of, R&D work. The applicant alleges that the GOC's development of 'tech parks' allow for direct government grants to relevant industries. The applicant further alleges there is a tax reduction on R&D expenses.
125. The applicant has referenced the TRA Excavators findings, EC Market distortions report, 14FYP, CHTi Annual report 2023, LB Group Annual Report 2023, KPMG Tax Alert 2021 and the 20th GOC National Congress.

Distortions in the titanium dioxide sector

126. The applicant alleges that the titanium dioxide sector in the PRC is deemed strategic by the GOC and so receives more government support. They further state that pressure is exerted by the GOC on titanium dioxide companies to produce more in order to use other PRC industry's output causing an oversupply of the product. The applicant also points to GOC ownership of significant titanium dioxide producing companies as an example of the GOC's influence on the market.
127. The applicant has referenced the European Union (EU) investigation into titanium dioxide, 14FYP, the Ministry of Industry and Information Technology guiding opinion promoting the high-quality development of the petrochemical and chemical industry. It also points to the Henan Province Action Plan 2022 to 2025 as an example of local



support and numerous examples of GOC owned titanium dioxide producers shown by extracts from their accounts and media.

Distortions in titanium feedstocks

128. The applicant alleges that the GOC sufficiently controls feedstock prices causing a distortion in the market. It notes that the GOC designates the titanium industry as strategic and applies export taxes meaning the low-price production in the PRC is not passed outside PRC. It also alleges that titanium ores do not benefit from a VAT export refund further protecting the prices in the PRC. It notes subsidies to iron ore mining benefit titanium extraction, that titanium ores extraction is itself directly subsidised and that the GOC ensures production is focused on a small number of very large companies, encouraging vertical integration reducing intra-company sales costs.
129. To support its allegations the applicant has referenced the 14FYP, the Organisation for Economic Co-operation and Development (OECD) Trade in Raw Materials in China report from 2018, State Taxation Administration of the PRC Export tax refund rate documentation. The applicant has further referenced findings in the TRA's Excavators Investigation, the LB Group Annual Report 2023 and Vzkoo Analysis of titanium resource reserves.

Distortions in sulphuric acid

130. The applicant alleges that the sulphuric acid sector is subject to GOC influence and control distorting prices. It notes that increasing sulphuric acid supply is a political and economic objective of the GOC. They also note that in the PRC the titanium dioxide production is focused on the sulphate production method, alleging this is a strategic decision by the GOC as by-products are also used by PRC industry, increasing the reliance on sulphuric acid. They allege that production of sulphuric acid is controlled by GOC, and that direct subsidization by the GOC occurs as sulphuric acid is a 'chemical of importance'.
131. To support its allegations the applicant quotes the 14FYP, the EU investigation into titanium dioxide from the PRC, the TRA investigation into excavators from the PRC and the LB Group Annual Report 2023.

Distortions in chlorine and caustic soda

132. The applicant alleges that GOC intervention in these markets distorts costs. It states that the GOC controls the production volumes of caustic soda through its intervention in major producers and state aid, and that due to this production is higher than Chinese consumption, which artificially creates a lower price. The applicant also alleges that the use of these products is encouraged by the GOC through investment in other industries that use them, creating a market for the product.
133. The applicant supports its allegations by referencing the 14FYP, Istay Kimya's 'Global caustic soda market outlook' 2025–2030 and the EC Significant Distortions Report, 2024.



Distortions in coal

134. The applicant states that GOC intervention in the market distorts prices through the provision of easily available subsidies and loans, by placing an export restriction on coal keeping the low prices within the PRC, and further alleges that coal prices are set centrally by the PRC.
135. The applicant references the TRA investigation into Biodiesel from the PRC, the OECD Inventory of support measures for fossil fuels, the OECD Measuring distortions in international markets, 2023 and an article entitled 'NDRC Coal price move underway' from 2022.

Distortions in petroleum coke

136. The applicant alleges that GOC intervention distorts costs in this market due to export restrictions on crude oil, refined oil and their products locking the lower costs due to the aforementioned distortions, associated with production in the PRC. They further reference NDRC Intervention on prices.
137. The applicant references the 14FYP, EC Significant Distortions Report 2024 and WTO China trade policy review 2024.

Distortions in iron scrap

138. The applicant states that iron scrap prices are distorted on the basis of distortion to the PRC Iron and Steel sectors.
139. The applicant has relied on the aforementioned market distortions as evidence of distortions in this market.

Distortions in waste disposal

140. The applicant states that GOC intervention distorts waste disposal costs, they state that waste disposal fees are low compared to global comparators and that a lack of regulations reduces the financial burden on the producers.
141. The applicant references the cost of the applicant's Chinese sister company's waste disposal and relevant applicable regulations.



142. LB Group responded to the applicant's comments on PMS with the following points:³⁶

1) The TRA should not adjust all costs

LB Group submit that the regulations and relevant statutory guidance states that the TRA should only make adjustments to elements of cost or profit that are not substantially determined by market forces.

2) Prices of imported feedstocks

Cheaper PRC domestic feedstock prices compared to imported feedstocks does not necessarily evidence that costs of feedstock in the PRC are distorted. The LB Group make reference to the TRA's investigation that related to Tin Mill products from the PRC as precedent for this.

3) Significance of costs

The LB Group request that the TRA consider cost materiality to the specific exporting producers' costs, rather than the significance of the equivalent undistorted cost in an undistorted cost stack as has been suggested by the applicant.

4) Imported inputs

The LB Group submission states that any PMS adjustments applied to imported inputs must be on the basis of established distortions, not based on presumptions and only because of an evaluation of artificially low cost.

5) Transfer prices

The fifth point in the LB Group submission requests that the TRA examine the context of the costs, particularly as they relate to exporters with a vertically integrated structure.

6) Cost advantages in financial statements

The final PMS points submitted by LB Group states that the TRA should make cost adjustments on the basis of the costs as recorded in LB Group accounts and note that the TRA is not permitted to disregard exporting producers' costs in their entirety.

143. The TRA has considered the submissions made to this investigation when assessing the PMS allegations that have been received. We have concluded that:

³⁶ LB Group, [20260629-AD0086-Response-to-Applicant-s-comments-on-PMS-NCV.pdf_SD-0000067755-Y6T9.pdf](#), accessed 7 September 2026



- There is a PMS that impacts upon the production of the goods concerned in the PRC.
- There is a causal link between the PMS and the costs of producing the goods concerned in the PRC.
- The PMS prevents a proper comparison between the domestic prices and the export prices of PRC exporters.

144. These assessments, and conclusions, are explained in the sections below.

145. As the TRA has concluded that it is not appropriate to use the comparable price due to a PMS that prevents a proper comparison between domestic prices and the export prices of exporter we have constructed the normal value of the goods concerned in accordance with regulation 8(1)(a) of the Regulations (see [F2.2. Constructed normal value](#) below).

F2.1 Particular market situation

F2.1.1 Preliminary PMS assessment

146. The applicant has made the following specific and evidenced claims which if proven would relate to the costs of producers of rutile titanium dioxide in the PRC:

- Energy Costs
- Land Costs
- Labour Costs
- Finance Costs
- R&D Costs
- Distortions in Waste Disposal

147. Costs are also impacted by any allegation of state planning of the economy, with the applicant providing an allegation of such as set out above.

148. The applicant has made the following specific and evidenced claims which if proven would relate to the raw material costs of producers of rutile titanium dioxide in the PRC:

- Distortions in Titanium Feedstocks
- Distortions in Sulphuric Acid
- Distortions in Chlorine & Caustic Soda
- Distortions in Coal
- Distortions in Petroleum Coke
- Distortions in Iron Scrap

149. Raw material costs will also be impacted by the more general allegations, if upheld, regarding the AS&G of the companies selling raw materials to the producer.

150. The TRA conducted an initial PMS assessment as part of the decision to investigate the PMS allegations made by the applicant. The evidence used to support the claims



made in the application, and that formed the basis of the preliminary PMS assessment, are set out in the relevant headings at [F2.1.1. Preliminary PMS assessment](#). The TRA's preliminary assessment considered the allegations of PMS and found that these allegations were consistent with the findings made by the TRA and other investigative authorities.

F2.1.2 Assessing the existence of a PMS

F2.1.2.1 State planning of the economy, R&D Costs and Tax costs

151. The TRA has determined in previous investigations that the GOC exercises significant control over the economy of the PRC.^{37, 38}
152. Independent research provider, The Rhodium Group, found in its 2021 paper that whilst the GOC establishes boards of directors in its state-owned enterprises (SOEs) it also requires that all SOEs institutionalise the role of the CCP committees into their articles of association, and give the party oversight of all strategic decisions.³⁹
153. The article further states that these CCP committees consist of government officials, incentivising PRC industry to consider PRC government priorities rather than making business decisions only on the basis of business interests. The presence of state appointees on the boards of directors encourages further appointments to these boards of candidates who are also politically affiliated to the CCP.
154. The Rhodium Group article was published in the year prior to the beginning of the IP. The TRA have not identified any evidence to suggest there has been a fundamental shift in GOC policy since this date. The business structures and requirements reported by the Rhodium Group were in force in the IP, as business structures take years or decades to significantly change.
155. The GOC's FYPs set priorities and goals for the economy of the PRC. The 14FYP, which runs from 2021 to 2025, states:

'The plan sets out the binding indicators, major engineering projects, and tasks in public services, environmental protection, safety assurance, and other fields. It clarifies the responsible parties and schedule requirements, reasonably allocates public resources, guides and controls social resources, and ensures completion as scheduled. This plan proposes expected indicators and tasks in the fields of industrial development and structural adjustment and mainly relies on the role of market players to achieve these tasks. Governments at all levels must create a

³⁷ AD0058 – Biodiesel from China, Final determination, [Final-determination_SD-0000043134-W0M0.pdf](#), accessed 4 September 2026.

³⁸ AD0062 – Tin mill products from China, [Final-determination_SD-0000056924-G5C5.pdf](#), accessed 4 September 2026.

³⁹ [State-Owned Enterprise Policy Reform — The China Dashboard Winter 2021 — Asia Society Policy Institute and Rhodium Group](#), accessed 7 September 2026



*favourable policy environment, institutional environment, and legal environment.*⁴⁰

156. The TRA notes that this extract from the 14FYP states that the plan ‘mainly relies of the role of market players’ against a wider context of allocated public resources, controlled social resources, and a requirement that governments at all levels create a favourable policy, institutional and legal environment. This demonstrates how the FYP creates an incentive structure and environment whereby the behaviour of private and state-owned companies is directed towards achieving state aims.
157. The 14FYP further states that this plan explicitly focuses on expanding external trade:
*‘We will improve export policies, optimize the quality and structure of export commodities, and steadily increase the value-added of exports. We will optimize the layout of the international market, guide enterprises to cultivate traditional export markets and expand emerging markets, expand the scale of trade with neighbouring countries, and stabilize our share of the international market.’*⁴¹
158. ‘Guiding’ of the economy to ‘cultivate traditional export markets’ and to ‘stabilize our share of the international market’, is evidence of government intervention. This state intervention in relation to the export market may also influence how PRC producers of the goods concerned treat export sales compared to domestic sales and therefore impact on the TRA’s ability to perform a proper comparison between normal value and export price.
159. PRC law includes provisions for state support for certain encouraged enterprises, which including titanium dioxide in the 2025 edition (Active from 1 January 2026).⁴² Being an encouraged industry bestows a number of benefits to companies, including:
- 1) Enterprise Income Tax privileges for High and New Technology Enterprises which offers tax privileges for high and new technology enterprises with a reduced rate of 15% rather than the standard 25%;⁴³
 - 2) Enterprise Income Tax offset for research and development expenses preferential treatment in certain areas determined by the state, including ‘Rutile-

⁴⁰ Center for Security and Emerging Technology, Outline of the People's Republic of China 14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035, Etcetera Language Group (translator, Article LXV section 1, [t0284 14th Five Year Plan EN \(georgetown.edu\)](https://georgetown.edu/t0284-14th-Five-Year-Plan-EN), accessed 7 September 2026

⁴¹ Center for Security and Emerging Technology, Outline of the People's Republic of China 14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035, Etcetera Language Group (translator, Article LXV section 1, [t0284 14th Five Year Plan EN \(georgetown.edu\)](https://georgetown.edu/t0284-14th-Five-Year-Plan-EN), accessed 7 September 2026

⁴² Ministry of Commerce of the People's Republic of China, [\[Catalogue of Industries Encouraged for Foreign Investment \(2025 Edition\) Order No. 37 of 2025\] - National Development and Reform Commission](#), accessed 7 September 2026

⁴³ Ministry of Commerce of the People's Republic of China, [\[Catalogue of Industries Encouraged for Foreign Investment \(2025 Edition\) Order No. 37 of 2025\] - National Development and Reform Commission](#), accessed 7 September 2026



type titanium dioxide (TiO₂) powder (purity > 98.5%)'.⁴⁴ This is enabled by Article 30 of the Law of the People's Republic of China on Enterprise Income Tax allows for weighted deductions for 'expenses on research and development incurred for developing new technologies, products or techniques.'

- 3) Land use tax exemption with evidence that titanium dioxide producers have benefited from this directly;
- 4) VAT exemptions and import tariff rebates for use of imported equipment & tech, as well as information on the existence of a subsidy programme providing VAT exemption & tariff rebates on capital equipment used for titanium dioxide production; and
- 5) Reduced tax rates for enterprises in the Western Region which establishes a reduced tax rate of 15% in certain provinces for 'encouraged industries' (of which titanium dioxide and many of the inputs are classified in several of those provinces).

160. Additionally, in 2020, titanium dioxide was removed from the prohibited export list,⁴⁵ with potential benefits to the industry such as a potential removal of export taxes, although it is unclear if this removal occurred in practice.

161. Within the broader GOC control of the economy of the PRC, it is alleged that direct control is made through interlinked strategic subsidies to help companies in their R&D pursuits and through the removal or offsetting certain taxes.

162. In a report published in 2025 Rhodium Group state:

*'China's budgetary support takes two main forms: direct transfers of funds (such as research grants, operating grants, and other cash transfers) and foregone tax revenue (including preferential tax rates, tax credits and rebates, whether they are for investment, R&D, or other purposes).'*⁴⁶

163. Further information is given within the report regarding preferential tax concessions specifically for R&D showing the interlinking of these two forms of government control and planning. Examples of this are provided at table 3 of the report:

⁴⁴ Law of the People's Republic of China on Enterprise Income Tax, [Order of the President of the People's Republic of China](#), accessed 7 September 2026

⁴⁵ Echemi, [From now! The titanium dioxide industry gets rid of 'prohibition'!](#), accessed 7 September 2026

⁴⁶ [Far From Normal: An Augmented Assessment of China's State Support – Rhodium Group](#), accessed 7 September 2026



Tax policy	Description	Eligibility	Time
Pre-tax super deduction of R&D expenses	If R&D expenses of eligible enterprises do not form intangible assets, they can be deducted at 100% from the taxable income amount, in addition to the pre-tax deduction of 100% already granted by law. If the R&D expenses have formed intangible assets, they can be amortized at 200% of the actual cost of intangible assets. The pre-tax super deduction of R&D expenses was first implemented in 2008 and has been progressively increased, with previous iterations including an increase of the rate from 50% to 75% for SMEs in 2017, an extension of the 75% rate to large firms in 2019, and an increase to a 100% rate for manufacturing firms in 2021.	Any China-based enterprise that is not on the negative list of sectors	January 1, 2023
Tax incentives for R&D capital assets	Accelerated depreciation of machinery and equipment used in R&D (immediate write-off up to a limit of RMB 1 million and shortening of the depreciation period by no less than 60% of the period stipulated in the Enterprise Income Tax Law, if above this limit).	Taxpaying companies	2014
Corporate income tax (CIT) benefits	Exemption or rate reduction for a certain number of years depending on the industry	Qualified new and high-tech enterprises, designated integrated circuits or software production enterprises	Various years
Value-added tax (VAT) benefits	Taxpayers providing technology transfer, technology development, and related technical consulting and technical services are exempt from VAT	VAT taxpayers engaging in technology transfer	2016
Customs duty exemptions	Customs duty exemptions for purchases of R&D equipment	A list of authorized small and medium-sized enterprises, as well as public research institutions	2021
VAT exemptions	Domestic equipment purchased by domestic R&D institutions and foreign R&D centres	National Engineering Research Centres, Enterprise technology centres approved by the NDRC, National key laboratories, and other institutions mainly engaged in scientific research	2016

Figure 6 Selection of tax concession policies for R&D



164. These tax concessions cover a wide range of years, industries and accessibility criteria, showing the GOC's targeted approach to maximising the benefit of PRC companies that are strategically aligned.
165. It is further reported by the Rhodium Group that at the provincial level local government will enact schemes that further benefit the taxation and R&D spending of PRC firms in line with the relevant FYP. This state support can be provided through various means, including subsidised industrial parks offering lower valued land and tax incentives.
166. It is reported that a company in the right circumstances could reduce its corporation tax burden from 25% to 5%.⁴⁷ The TRA assesses that this level of reduction is unlikely to apply to producers of the goods concerned as they would not qualify for small business incentives; despite this producers of the goods concerned are still likely to benefit from a reduction of corporation tax from 25% to 15% as a high technology industry. Indeed, confirmation of this can be found in the LB Group's 2024 financial statements:

'(II) Tax preferential policies

*According to the Certificate of High-tech Enterprise (No.: GR202341003190) jointly issued by the Henan Provincial Department of Science and Technology, Henan Provincial Department of Finance and Henan Provincial Tax Service, STA on November 22, 2023. The Company was recognized as a high-tech company for 2023, and allowed to enjoy related preferential policies for high-tech companies for three consecutive years from 2023 to 2025. Therefore, it paid the corporate income tax at a rate of 15% this year.'*⁴⁸

167. A deduction for R&D can also be seen within the LB Group company accounts within the adjustment for income tax expenses, which in the 2024 accounts include a line 'Effect of the additional deductions of R&D expenses'⁴⁹ and the 2025 accounts have a deduction for R&D expenses.⁵⁰
168. Further evidence of R&D grants can be seen through the government subsidies section of the 2024 LB Group accounts. This includes allowances for income from the '2022 Special Government Subsidies for Enterprises' R&D activities No 2022-413'.⁵¹

⁴⁷ Sinoservices, [Tax Incentives for Business in China: SLPE, HNTE, R&D and VAT Refund](#), accessed 7 September 2026

⁴⁸ LB Group Co., Ltd., Auditors Report and Financial Statements Year 2025, <https://www.moomoo.com/news/notice/307093071/longbai-group-2025-annual-report>, page 221, accessed 21 September 2026

⁴⁹ LB Group Co., Ltd., Auditors Report and Financial Statements Year 2024, [Longbai Group \(002601\) Company Announcement Longbai Group: 2024 Annual Report Sina Finance Sina.com](#), page 307, accessed 21 September 2026

⁵⁰ LB Group Co., Ltd., Auditors Report and Financial Statements Year 2025, <https://www.moomoo.com/news/notice/307093071/longbai-group-2025-annual-report>, page 100, accessed 21 September 2026

⁵¹ LB Group Co., Ltd., Auditors Report and Financial Statements Year 2024, [Longbai Group \(002601\) Company Announcement Longbai Group: 2024 Annual Report Sina Finance Sina.com](#), page 324, accessed 21 September 2026



169. The TRA has assessed this evidence and determined that the GOC takes an active role in the wider PRC economy distorting market conditions in the PRC to align with GOC policy. The titanium dioxide industry, which includes producers of the goods concerned, is an encouraged industry that is impacted by this situation.

F2.1.2.2 Energy costs

170. The TRA has determined in previous investigations that energy costs in the PRC reflect non-commercial factors, most recently in the TRA's investigation regarding Biodiesel from the PRC determining that energy costs in the broader chemical sector were distorted.⁵²

171. Electricity in the PRC is distributed and sold by two organisations dependant on region; either the State Grid Corporation of China (SGCC) or the China Southern Power Grid (CSPG).^{53, 54} The CSPG operates in Guangdong, Guangxi, Yunnan, Guizhou, Hainan, Hong Kong, and Macao, and the SGCC operates in all other provinces and municipalities in the PRC.

172. Both the SGCC and the CSPG are under the sole ownership of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC).⁵⁵ They have corporate objectives that the organisations should implement state industrial policy and conform to the party line and principals of the CCP.^{56, 57} This demonstrates that the distribution and sale of electricity to companies in the PRC is significantly influenced by government policy and political objectives as opposed to purely commercial factors.

173. The WTO has found that price controls in the PRC take two forms; 'government-set prices' or 'government-guided prices'.⁵⁸ Government-set prices are fixed prices set by the competent authorities, while government-guided prices are prices set by business operators within a range of prices set by the competent pricing departments or other related government departments, within which the actual price is allowed to fluctuate. Both forms of price control are indicative of non-commercial factors influencing the price of energy in the PRC.

174. The WTO considers electricity transmission and distribution to be a product subject to pricing controls set by the government.⁵⁹ Price controls are administered in the PRC by the Department of Pricing, which is part of the NDRC and its function is to 'monitor, forecast and give warning of price changes, and propose price control targets and policy

⁵² Biodiesel AD0058, Final Determination, [Final-determination_SD-0000043134-WOM0.pdf](#), pages 64-66, accessed 7 September 2026

⁵³ [Company Introduction - State Grid Corporation of China](#), accessed 8 September 2026

⁵⁴ [Company Basic Information – China Southern Power Grid](#), accessed 8 September 2026

⁵⁵ State-owned Assets Supervision and Administration Commission of the State Council, [List of Central enterprises – SASAC](#), accessed 8 September 2026

⁵⁶ [Party Building – State Grid Corporation of China](#), accessed 8 September 2026

⁵⁷ [Discipline inspection and Supervision – China Southern Power Grid](#), accessed 8 September 2026

⁵⁸ [WTO Trade Policy Review China: Report by the Secretariat - Sept 2021](#), accessed 8 September 2026

⁵⁹ [WTO Trade Policy Review China: Report by the Secretariat - Nov 2024](#), accessed 8 September 2026



recommendations'.⁶⁰ The products and services that are subject to price controls are listed in a Central Government Pricing Catalogue.⁶¹ The current Central Government Pricing Catalogue was issued by the NDRC on 13 March 2020 (NDRC Order No. 31, 2020) and came into effect on 1 May 2020. The list includes 'provincial and above provincial power grid transmission and distribution prices'.

175. The relevant legislation that regulates price controls is the Pricing Law of the PRC.⁶² Articles of the pricing law that demonstrate the non-commercial determination of energy prices include:

- Article 1 *'This Law is enacted in order to standardize pricing, give play to the role of pricing in rationally allocating resources, stabilize the general level of market price, protect the lawful rights and interests of consumers and managers and promote the sound development of a socialist market economy'.*
- Article 6 *'Commodity prices and service prices, with the exception of those whose prices shall be guided or fixed by the government under Article 18 of this Law, shall be regulated by the market, that is, fixed by the manager on his own in accordance with this Law'.*
- Article 7 *'The manager shall follow the principles of fairness, lawfulness and good faith in fixing prices'.*
- Article 18 *'When necessary, the government may guide or fix the prices for the following commodities and services:*
 - *a very small number of commodities that have a vital bearing on the development of the national economy and the well-being of the people;*
 - *a small number of commodities for which resources are scarce;*
 - *commodities placed under natural monopoly;*
 - *important public utilities; and*
 - *important public welfare services'*
- Article 23 *'For the setting of government guidance prices and government fixed prices for public utilities, public welfare services and commodities under natural monopoly that have a bearing on the immediate interests of the masses, a system for evidentiary hearing shall be established which shall be presided over by the government departments in charge of pricing and at which suggestions of consumers, managers and the other parties concerned shall be solicited and expounded as to their necessity and feasibility'.*

176. The NDRC has issued a notice in 2025 stating that 'the mechanism price [for new energy] shall be implemented in accordance with the current price policy and shall not

⁶⁰ [National Development and Reform Commission \(NDRC\): About](#), accessed 8 September 2026

⁶¹ [NDRC: Order of the National Development and Reform Commission of the People's Republic of China](#), accessed 8 September 2026

⁶² The State Council, The People's Republic of China, [Pricing Law of the People's Republic of China](#), accessed 8 September 2026



be higher than the local coal-fired power benchmark price'.⁶³ This shows that energy remains subject to the pricing law, and that energy is subject to maximum pricing policies, indicating that prices are still significantly influenced by non-commercial factors.

177. The same NDRC notice from 2025 states that energy pricing should 'adhere to classified measures, [...] maintain policy connection to existing projects, and stabilise the expected benefits of incremental projects' and 'adhere to overall coordination, and make concerted efforts in policies such as industry management, price mechanisms, [...] and better support the realisation of the goals of the new energy development plan'. This further demonstrates that energy pricing policy remains subject to national and industrial planning and remains a tool of the GOC to achieve its policy objectives.
178. In 2022, the NDRC released a press notice stating that 20% of electricity prices were not set by the market.⁶⁴ This demonstrates that even according to NDRC public statements there are large sections of the PRC economy that receive energy at non-market prices, and this is likely to indirectly affect the prices of all other energy users in a non-commercial way.
179. The 2023 OECD report 'Measuring distortions in international markets: Below-market energy inputs' found that below-market energy in certain economies (e.g. the PRC) is not widespread but rather specific to certain companies, sectors, or regions.⁶⁵
180. The 2023 OECD report 'Government support in industrial sectors, a synthesis report' found that in relation to the PRC, 'It is especially problematic for trade in the context of industries for which energy constitutes an essential input, such as aluminium smelting, steel, cement, fertilisers, and chemicals.'⁶⁶ In this context 'chemicals' includes the production of titanium dioxide.
181. Distortions are also seen at a provincial level, in Henan province, where many titanium dioxide producers are based, there is a state level financial support to assist companies with transitioning to green energy.⁶⁷ This financial support reimburses up to 12% of cost/20 million yuan on the installation of solar panels and associated systems, substantially lowering the costs of energy microgrids.
182. The TRA has assessed this evidence and determined that the GOC takes an active role in energy pricing, distorting market conditions in line with GOC policies. There are

⁶³ National Development and Reform Commission, [Notice on Deepening the Market-oriented Reform of New Energy Grid-connected Electricity Prices and Promoting the High-quality Development of New Energy](#), accessed 8 September 2026

⁶⁴ [China's pricing mechanism highly market-based: National Development and Reform Commission \(NDRC\) People's Republic of China](#), accessed 8 September 2026

⁶⁵ OECD, Measuring distortions in international markets: Below-market energy inputs, https://www.oecd-ilibrary.org/trade/measuring-distortions-in-international-markets-below-market-energy-inputs_b26140ff-en, accessed 7 September 2026

⁶⁶ OECD, Government support in industrial sectors, https://www.oecd-ilibrary.org/trade/government-support-in-industrial-sectors_1d28d299-en, accessed 7 September 2026

⁶⁷ [With a maximum subsidy of 20 million yuan, Zhengzhou, Henan Province continues to increase support for the construction of industrial green microgrids and source-grid-load-storage projects-EEWORLD](#), accessed 7 September 2026



distortions in the PRC in relation to energy, and the titanium dioxide industry, which includes producers of the goods concerned, is an industry that is impacted by this situation.

F2.1.2.3 Land costs

183. The applicant claims that property rights are regularly not respected in relation to ownership of land and land-use rights in the PRC, which has resulted in distorted land costs for producers of the goods concerned in the PRC.
184. The TRA has determined in previous investigations that land prices in the PRC reflect non-commercial factors. The TRA's investigation regarding Biodiesel from the PRC determined that land costs in the PRC chemical sector were distorted.⁶⁸
185. There are several relevant articles and laws that relate to land use rights ownership and allocation in the PRC.
186. Article 10 of the Constitution of the PRC states that 'The land in cities belongs to the State', and that 'except for land that is owned by the state as stipulated by law, land in rural areas and urban suburbs is collectively owned'. Article 10 continues with the requirement that 'for the needs of public interest, the state may expropriate or requisition land and provide compensation in accordance with the law', and that 'the right to use land may be transferred in accordance with the provisions of the law'.⁶⁹
187. The Ministry of Natural Resources states in Article 5 of the Provisions on the Transfer of State-owned Construction Land Use Rights through Bidding, Auction and Listing that land allocation will be done 'based on economic and social development plans, industrial policies, overall land use plans, annual land use plans, urban planning, and land market conditions. After approval by the people's government at the same level, the plans shall be promptly released to the public'.⁷⁰
188. The Land Administration Law of the PRC states in article 2 that the State Council of the PRC owns all state land, that no individuals may own land and the right to use land is transferred according to law, that it may expropriate or requisition land in accordance with the law, and that it implements paid use of state-owned land except where the state allocates land use rights.⁷¹ Article 4 requires that those given land use rights 'must use the land strictly in accordance with the purpose determined by the overall land use plan', article 15 stipulates that 'People's governments at all levels shall organize the preparation of overall land use plans based on the national economic and social development plans, [...]', and article 23 instructs that 'the annual land use plan shall be prepared based on the national economic and social development plan, national

⁶⁸ Biodiesel AD0058, Final Determination, [Final-determination_SD-0000043134-WOM0.pdf](#), pages 67-68, accessed 7 September 2026

⁶⁹ [Constitution of the People's Republic of China](#), accessed 8 September 2026

⁷⁰ Government of China, [Provisions on the Transfer of State-owned Construction Land Use Rights through Bidding, Auction and Listing](#), accessed 8 September 2026

⁷¹ Ministry of Ecology and Environment of the People's Republic of China, [\[I7\]\[I7rd Law of the People's Republic of China - General Provisions \(2019\)\]](#), third amendment (2019), accessed 8 September 2026



industrial policy, overall land use plan and the actual situation of construction land and land use'. These articles demonstrate that land use rights must be allocated in accordance with state industrial and social planning, and that all levels of government are required to coordinate the allocation of land-use rights.

189. The Civil Code of the PRC includes property rights regulations in the PRC, superseding the previous Property Law of the PRC when it entered into force in 2021.⁷² It states in article 347 that 'Commercial land such as industrial, commercial, tourism, entertainment and commercial residential land, as well as land with more than two potential users, shall be sold through public bidding such as tendering and auction'. This is expanded on in the Urban Real Estate Management Law of the PRC, article 13 of which requires that 'for commercial, tourism, entertainment and luxury residential land, [...] if conditions do not permit and auction or bidding is not an option, bilateral agreement may be used. The transfer fee for land use rights transferred by way of bilateral agreement shall not be lower than the minimum price determined in accordance with national regulations'.⁷³ This law therefore allows land to be transferred via closed bilateral agreements and introduces price fixing based on national regulations rather than the commercial value of the land.
190. The Civil Code further requires that in accordance with article 354 where construction land is 'transferred, exchanged, contributed, donated or mortgaged, the parties shall enter into a corresponding contract in written form'. This shows that there are additional ways to subvert the process of acquiring land use rights via tendering and auctions in the PRC.
191. These legal requirements demonstrate that the GOC strictly controls what land can be used for based on factors such as development plans and industrial policy. The GOC has significant influence over access to land before and after it has been allocated to organisations. This control and influence over the market for land use rights results in the price of land being significantly determined by the industrial planning and political decision-making of the GOC, rather than commercial factors such as the demand and supply of land within the PRC.
192. Land is preferentially priced based on certain state industrial policies. For instance, encouraged foreign-funded projects with intensive land use can be priced at 70% of the national minimum price for the transfer of industrial land.⁷⁴ The Ministry of Natural Resources also limits the price of long term leases based on what it determines the land value to be and strictly limits rent price increases to less than 10%.⁸ This shows how state industrial planning influences the price of land in the PRC depending on state priorities.

⁷² Government of China, [Civil Code of the People's Republic of China – part II Property Rights](#), accessed 8 September 2026

⁷³ People's Government of Guangdong, [Urban Real Estate Management Law of the People's Republic of China - Chapter II Land for Real Estate Development](#), accessed 8 September 2026

⁷⁴ [China Released Draft Encouraged Catalogue to Boost Foreign Investment, China Briefing \(2024\)](#), accessed 8 September 2026



193. A strong indication that the price of land use rights for industrial use reflect non-commercial factors is that industrial land in the PRC is routinely priced at a significantly lower price than residential land. Research by the University of Chicago in 2022 reported that, between 2007 and 2019, the average land price of residential land in the PRC rose significantly whereas the price of industrial land rose only marginally, resulting in the average price of residential land being over 10 times higher than industrial land in 2019.⁷⁵ The research proposes that residential land rates are primarily in place to raise local government revenue and reflect market realities to maximise revenue, whereas industrial land prices reflect subsidised industrial policies and is not representative of commercial reality.
194. A more recent study, using data from 2010 to 2023, 'presents empirical evidence demonstrating how housing market policy interventions influence local governments' land supply strategies in China [...] The policy-induced contraction in residential land leads to increased allocations for industrial use, particularly in cities that enforced the regulation more stringently.'⁷⁶
195. Favourable land treatment is in place for industries listed in the PRC's Catalogue of Encouraged Industries for Foreign Investment. Land can be preferentially supplied for encouraged foreign-invested projects with intensive land use; and the minimum price of land transfer can be set at 70% of the national minimum price for industrial land in the specific locations where the transfer occurs.⁷⁷
196. The latest 'Catalogue of Encouraged Industries for Foreign Investment' was released in December 2025 and entered into force on 1 January 2026.⁷⁸ In this catalogue 'Production of Precision High-Performance Ceramic Raw Materials', specifically including 'Rutile TiO₂ powder', is listed as an encouraged industry. This is a continuation of the previous edition, in which TiO₂ also appeared, and covers the POI and IP.⁷⁹
197. In addition, favourable land treatment is also in place for those titanium dioxide producers with High-Tech Enterprise status. The Shanghai municipal people's government reports that companies with High-Tech Enterprise status are granted 'priority access to office and industrial land.'⁸⁰

⁷⁵ The University of Chicago, Becker Friedman Institute for Economics, [Is There an Industrial Land Discount in China? A Public Finance Perspective \(Beckler Friedman Institute for Economics\)](#), accessed 7 September 2026

⁷⁶ MDPI, [Industrial Land Expansion as an Unintended Consequence of Housing Market Regulation: Evidence from China](#), accessed 7 September 2026

⁷⁷ Ministry of Commerce of the People's Republic of China, National Development and Reform Commission, https://www.ndrc.gov.cn/xxgk/zcfb/fzggwl/202210/t20221028_1339662.html?code=&state=123, accessed 7 September 2026

⁷⁸ Ministry of Commerce of the People's Republic of China, [\[Order No. 52 of 2022 on the Publication of the "Catalogue of Industries Encouraged for Foreign Investment \(2022 Edition\)"\] - National Development and Reform Commission](#), accessed 7 September 2026

⁷⁹ Ministry of Commerce of the People's Republic of China, [\[Catalogue of Industries Encouraged for Foreign Investment \(2020 Edition\) Order No. 38 of 2020\] - National Development and Reform Commission](#), accessed 7 September 2026

⁸⁰ International Services Shanghai, [What benefits are available to accredited high-tech enterprises? A Comprehensive Guide to High-Tech Enterprise Accreditation](#), accessed 7 September 2026.



198. The TRA has assessed the evidence and determined that the GOC takes an active role in land pricing, distorting market conditions in line with GOC policies. There are distortions in the PRC in relation to land, and the titanium dioxide industry, which includes producers of the goods concerned, is an industry that is impacted by this situation.

F2.1.2.4 Labour costs

199. The TRA has determined in previous investigations that labour costs in the PRC reflect non-commercial factors. Most pertinently the TRA's investigation into Biodiesel from the PRC shows that labour costs in the broader chemical sector were distorted.⁸¹

200. Labour costs within the PRC are shown to be distorted by two main factors, the effectiveness of trade unions and the Hukou system.

Trade Unions

201. The Trade Union Law of the PRC governs establishment and operation of labour unions, which significantly affects the ability of organised labour to demand higher wages.⁸² Article 3 of the Trade Union Law states that all workers have the right to organise or join trade unions according to law, and that no organisations or individuals should obstruct or restrict them. However, article 2 states that '*Trade unions are mass organizations of the working class under the leadership of the CCP*', article 4 states how all trade unions must align ideologically and politically with the CCP, and article 32 states that trade unions should '*strengthen ideological and political guidance for employees*'. Article 32 of the CCP constitution states that it '*exercises leadership over the trade unions*' within non-public sector entities in order to implement government policy.⁸³ These articles show that all trade unions must be politically and ideologically aligned with the CCP, reducing the ability of workers to advocate for higher wages as it requires the support of the CCP.

202. PRC workers do not have the right to establish independent trade unions to organise wage negotiations because all unions are required to be organised under the oversight of the All-China Federation of Trade Unions (ACFTU).⁸⁴ The ACFTU consists of many local and grassroots trade unions, but all unions are subject to oversight by the ACFTU.

203. The ACFTU's history of supporting labour and providing suitable and competitive advocacy on behalf of workers is controversial. The China Labour Bulletin, a Hong Kong based advocacy group, issued a report calling into question the independence of the

⁸¹ Biodiesel AD0058, Final Determination, [Final-determination_SD-0000043134-WOM0.pdf](#), pages 68-70, accessed 7 September 2026

⁸² Ministry of Human Resources and Social Security, [Trade Union Law of the People's Republic of China](#), Article 3, accessed 7 September 2026

⁸³ The State Council, The People's Republic of China, [Constitution of the Communist Party of China, Article 32](#), accessed 7 September 2026

⁸⁴ Ministry of Human Resources and Social Security, [Trade Union Law of the People's Republic of China](#), Chapter II Trade Union Organisation, accessed 7 September 2026



ACFTU from CCP political influence,⁸⁵ highlighting that *‘because the ACFTU’s focus has been on its local unions, the numerous enterprise unions that it has set up have, more often than not, become mere empty shells, controlled or dominated by managements and unable to represent workers’ interests.’*

204. There are strong ties between ACFTU, the CCP, and company management. The Global Labour University (GLU), part of the International Labour Office, found that of the 1,811 union presidents surveyed within ACFTU companies:⁸⁶

- 90.3% were CCP members (National Bureau of Statistics data show 7.12% of the PRC population were CCP members in December 2024).^{87, 88}
- 40.6% were middle-level managers.
- 17.9%% were CCP committee directors or deputy-director of CCP committees.
- 13.3% were retired factory heads or managers.
- 4.2% were ordinary employees before becoming union presidents.
- 23.3% were directly appointed by higher-level unions or CCP branches.
- 51.7% of union president elections had only one candidate selected by the CCP or higher-level unions.
- 2.6% were elected through open, competitive screening tests.

205. These findings by the GLU show that despite the requirement in Articles 6 and 10 of the Trade Union Law of the PRC which mandate elections and democratic consultation,⁸⁹ most union presidents of the ACFTU were CCP members who were part of company management and most gained their positions through undemocratic election processes. This indicates that the leadership of ACFTU members is highly likely to align with the goals of the CCP and company management to the detriment of worker demands for improved wages and working conditions.

206. In 1982, the official recognition of the right to strike was removed from the constitution of the PRC,^{90, 91} which removed a key element of workers’ collective bargaining power on wages. Article 290 of the Criminal Law of the PRC also states that:

‘Where people are gathered to disturb public order to such a serious extent that work in general, production, business operation, teaching or scientific research cannot go on and heavy losses are caused, the ringleaders shall be sentenced to fixed-term imprisonment’ and that ‘active participants shall be sentenced to fixed-term

⁸⁵ WayBack Machine, China Labour Bulletin, Protecting Workers’ Rights or Serving the Party, [The way forward for China’s trade unions](#), accessed 7 September 2026

⁸⁶ Global Labour University, [All China Federation of Trade Unions: Structure, Functions and the Challenge of Collective Bargaining](#), accessed 7 September 2026

⁸⁷ Communist Party of China, Organization Department of the CPC Central Committee, [Statistical Bulletin of the Communist Party of China \[CCP membership\]](#), accessed 7 September 2026

⁸⁸ [Statistical Communiqué of the People’s Republic of China on National Economic and Social Development in 2024 \[Population of the PRC\]](#), accessed 7 September 2026

⁸⁹ Ministry of Human Resources and Social Security, [Trade Union Law of the People’s Republic of China](#), Articles 6 and 10, accessed 7 September 2026

⁹⁰ [2024 ITUC GLOBAL RIGHTS INDEX](#), accessed 7 September 2026

⁹¹ [Human Rights Council Universal Periodic Review on People’s Republic of China](#), accessed 7 September 2026



imprisonment [...], criminal detention, public surveillance or deprivation of political rights'.⁹²

207. Several news outlets and research groups have reported on the arrest of labour activists in the PRC for labour protests and advocacy.^{93, 94, 95} This shows that strikes in the PRC can result in criminal prosecution, reducing industrial action and limiting the ability of workers to make demands of their employers.

208. The Trade Union Law states in article 23 that:

'if an [organisation] violates labour laws and regulations and infringes upon the labour rights and interests of employees [...], the trade union shall represent the employees in negotiations with the [organisation] and demand that the [organisation] take corrective measures' and article 28 states that 'When a work stoppage or slowdown occurs [...] trade unions shall assist [organisations] in their efforts to restore production and work as quickly as possible'.⁹⁶

209. This shows that negotiations during labour disputes must use trade unions as employee representatives and that trade unions can be legally compelled to end industrial action, which further limits the ability of workers to demand higher wages and improved working conditions using industrial action.

210. The union for chemical workers (which includes employees that produce the goods concerned), the National Committee of China Energy, Chemistry[sic] and Geology Trade Union, is itself a member of the All-China Federation of Trade Unions,⁹⁷ demonstrating that the manufacture of the goods concerned is subject to the distortions relating to labour that are present in the PRC and set out above.

Hukou System

211. The household registration system, sometimes known as the Hukou system, is a legal registration system that records basic information about workers and registers every PRC citizen either a rural or urban hukou. PRC citizens working outside the township of their household registration are often referred to as 'migrant workers' and systematically have lower average wages than non-migrant workers employed in the same areas.⁹⁸ Migrant workers can apply for permanent residence registration for themselves and their family if they acquire enough points which can be earned by '*legal and stable employment and legal and stable residence (including rentals), years of participation in*

⁹² [Criminal Law of the People's Republic of China, Article 290](#), accessed 7 September 2026

⁹³ Financial Times, [Wu Guijun trial tests China's tolerance of workers' strikes](#), accessed 7 September 2026

⁹⁴ Congressional Executive Commission on China, [Prosecution of Labor Advocates Has Chilling Effect on Labor NGOs, Strikes Continue](#), accessed 7 September 2026

⁹⁵ Radio Free Asia, [China Arrests At Least Three Labor Activists in Shenzhen](#), accessed 7 September 2026

⁹⁶ Ministry of Human Resources and Social Security, [Trade Union Law of the People's Republic of China](#), Articles 23 and 28, accessed 7 September 2026

⁹⁷ All-China Federation of Trade Unions, [National Committee of China Energy, Chemistry and Geology Trade Union](#), accessed 7 September 2026

⁹⁸ National Bureau of Statistics, [2024 Migrant Workers Monitoring Survey Report](#), accessed 7 September 2026



urban social insurance, and years of continuous residence',⁹⁹ which encourages migrant workers to work in urban areas even if it is for comparatively lower wages so they can improve their chances of applying for an urban hukou.

212. Employees are motivated to work outside their township due to access to better public services such as improved education access, subsidised medical insurance and pensions, and widespread access to affordable housing with fixed standards and prices. The NDRC has stated that additional investment is needed to allow 'migrant populations to live and work in a city and enjoy the same public services as local residents with urban household registration', that liberalising the system (i.e., increasing the amount of citizens with an urban status) is desirable but it would increase costs for businesses and government spending in both the short and the long term, and that 'completely liberalizing it in the short term is unrealistic' so 'restrictions on household registration should be relaxed in an orderly and measured manner'.¹⁰⁰ This demonstrates that migrant workers have access to inferior public services relative to local urban workers and that the GOC intends to continue to liberalise the system rather than abolish the hukou system altogether.
213. Several liberalisations of the household registration system have increased the number of urban hukou holders, but there continues to be a large migrant population. 63.9% of the population of the PRC resided in urban areas in 2020, compared to 45.4% of the population of the PRC that had an urban hukou registration in 2020.¹⁰¹ Research published by the world bank estimates that 300 to 400 million migrants live in urban areas,¹⁰² and the National Bureau of Statistics reported in 2021 that approximately 500 million people had household registrations separate from their current residence.¹⁰³
214. Reforms to the system in 2022 removed hukou restrictions in cities with a population of less than 3 million, relaxed restrictions in cities with a population of less than 5 million and introduced minor reforms to restrictions in cities with over 5 million residents.¹⁰⁴ This means that the effect of migrant workers on wages is concentrated in large cities although the impact of the hukou system on wages is not strictly limited to large urban areas. The Centre for Strategic & International Studies states that 'centrally directed hukou reforms have largely been watered down by local governments and

⁹⁹ [Opinions of the State Council on Further Promoting the Reform of the Household Registration System](#), accessed 8 September 2026

¹⁰⁰ National Development and Reform Commission, [Zhao Junjie: Review of the Reform Process of China's Household Registration System, Reform Evaluation and Trend Judgment](#), accessed 7 September 2026

¹⁰¹ National Bureau of Statistics of China, [Communiqué of the Seventh National Population Census \(No. 7\)](#), accessed 7 September 2026

¹⁰² World Bank Group, [Internal Migration in China : Integrating Migration with Urbanization Policies and Hukou Reform](#), accessed 7 September 2026

¹⁰³ National Bureau of Statistics, [Communiqué of the Seventh National Population Census \(No. 7\)](#), accessed 7 September 2026

¹⁰⁴ Government of China, [Notice of the National Development and Reform Commission on Issuing the Implementation Plan for New Urbanization in the 14th Five-Year](#), accessed 7 September 2026



offset by more migration, suggesting that recently announced hukou reforms will have little effect on the millions of rural migrants in major cities.’¹⁰⁵

215. China Briefing researched the impact of the household registration system on the PRC’s economy, and reports that ‘since hukou restricts the free mobility of Chinese workers, it strains overall economic growth. These effects are exacerbated because the PRC has a shrinking workforce that peaked in 2011 and has decreased every year since then, leading to double-digit growth in labour costs.’
216. Employers do not have to pay social protection insurance for migrant workers if they have no contract of employment.¹⁰⁶ The National Bureau of Statistics reported that only 35.1% of migrant workers had a signed labour contract with their employer in 2016,¹⁰⁷ and the International Journal of Environmental research and Public Health indicates this number has increased to 47.7% in 2022.¹⁰⁸ This confers an advantage to the employer of reduced labour costs.
217. The hukou system consistently results in lower wages paid to migrant workers within professions.¹⁰⁹ The GLU found that migrant workers earned 20% to 50% less than urban workers in the same area of employment, and the Hong Kong University of Science and Technology found that migrant workers had a negative pay differential of between 8% and 36% relative to urban workers.¹¹⁰
218. The effect of the hukou system is that the labour markets which determined wages are affected by the non-commercial factor of the legal registration status of individuals in the PRC. The system either limits employment exclusively to workers with the correct hukou registration or introduces a tiered wage system for migrant and non-migrant workers.
219. The hukou system is a PMS that is endemic across all PRC industry. It impacts the chemical industry and the production of the goods concerned.

Conclusion on Labour Distortions

220. The TRA has assessed the evidence and determined that the GOC takes an active role in labour costs, distorting prices and market conditions in line with GOC policies. There are distortions in the PRC in relation to labour, and the titanium dioxide industry, which includes producers of the goods concerned, is an industry that is impacted by this situation.

¹⁰⁵ Center for Strategic and International Studies, [China’s Hukou Reform in 2022: Do They Mean it this Time?](#), accessed 7 September 2026

¹⁰⁶ International Labour Organisation, [Improving social protection for internal migrant workers in China](#), accessed 7 September 2026

¹⁰⁷ Sixth Tone, [Fewer of China’s Migrant Workers Have Labor Contracts](#), accessed 7 September 2026

¹⁰⁸ National Library of Medicine, [Research on the Influence of Labor Contract on the Urban Integration of Migrant Workers: Empirical Analysis Based on China’s Micro Data](#), accessed 7 September 2026

¹⁰⁹ International Labour Office, [All China Federation of Trade Unions: Structure, Functions and the Challenge of Collective Bargaining](#), accessed 7 September 2026

¹¹⁰ [Wage Discrimination in Urban China: How Hukou Status Affects Migrant Pay | Thought Leadership Briefs | Publications | HKUST Institute for Emerging Market Studies](#), accessed 7 September 2026



F2.1.2.5 Finance costs

221. The current central banking system in the PRC was established in 2017 following the merger of the China Banking Regulatory Commission and the China Insurance Regulatory commission into the China Banking and Insurance Regulatory Commission ('CBIRC') and the formation of the Financial Stability and Development Committee ('FSDC').

222. In 2023 the FSDC was itself absorbed into the Central Financial Commission ('CFC') as part of President Xi Jinping's plan on reforming the party and state institutions. The reported reason by the Ministry of Civil Affairs of the PRC in the creation of the CFC is to:

*'[...] Strengthen the centralized and unified leadership of the Party Central Committee over financial work, be responsible for top-level design, overall coordination, overall advancement, and supervision of financial stability and development, study and review major policies and issues in the financial field, and serve as the decision-making and coordination body of the Party Central Committee. The Office of the Central Financial Commission was established as an administrative body of the Central Financial Commission and included in the organizational structure of the Party Central Committee.'*¹¹¹

223. The CFC is headed, at the time of writing, by Li Qiang, who holds a governmental position of 'Premier of China', the highest ranking member of the Politburo.¹¹² The appointment of such a high ranking member of the GOC to the role of overseeing the CFC demonstrates its importance to the GOC and is evidence of the GOC's influence on PRC financial markets.

224. Another department that controls the financial markets in the PRC is The State Administration of Foreign Exchange ('SAFE'). The stated functions of this department include:

*'[...] To be responsible for the supervision and management of the foreign exchange market of the state; to undertake supervision and management of the settlement and sale of foreign exchange; to cultivate and develop the foreign exchange market. [...] To undertake operations and management of foreign exchange reserves, gold reserves, and other foreign exchange assets of the state. [...] To take part in relevant international financial activities. To undertake other matters as assigned by the State Council and the People's Bank of China.'*¹¹³

¹¹¹ WayBack Machine, [The CPC Central Committee and the State Council issued the "Plan for Reforming Party and State Institutions" - Ministry of Civil Affairs of the People's Republic of China](#), accessed 15 June 2026

¹¹² The State Council, The People's Republic of China, [Brief introduction of Li Qiang -- Premier of China's State Council](#), accessed 7 September 2026

¹¹³ Government of China, [Major Functions State Administration of Foreign Exchange](#), accessed 7 September 2026



225. The functions outlined above show that SAFE has its objectives directly set by the GOC through the state council and the central bank. The previous functions confirm that SAFE is active in managing the value of PRC currency against international currencies.
226. Distortions caused by the manipulation of currency markets by the GOC directly impact on the comparability of prices in the PRC and international markets, as it is possible for the GOC to influence prices to raise or lower the exchange rates in a way that is beneficial to PRC industries at that time.
227. The Chinese financial system is dominated by the banking sector, as found by the EC in 2021 over 60% of financing was in bank loans with 22% in government bonds, 10% in corporate bonds and 4% in domestic equity.¹¹⁴
228. The Bank of China states, in its 2025 annual report:
- ‘China’s banking sector steadily advanced the ‘five major tasks’ of the financial sector, continuously increased financial supply for major national strategies, key areas and weak links, and served domestic demand expansion and high-quality social and economic development.’¹¹⁵*
229. This demonstrates that not only is the bank system prevalent in PRC domestic finance, but it is also actively encouraging PRC industries in line with the GOC’s strategies, providing easier access to finance for those businesses the GOC deems strategic (which includes the manufacture of the goods concerned).
230. There are three broad categories of bank in the PRC; policy banks, state owned commercial banks and commercial banks. The 6 state-owned commercial banks account for the largest share of business activity among China’s banking institutions. A KPMG Report into PRC banking in 2024 shows that for commercial loans and advances large state-owned commercial banks represented over half the market.¹¹⁶ The same report shows the discrepancy to be further exaggerated in personal banking.
231. The KPMG report also shows that yields earned by large state-owned commercial banks are significantly below those of other commercial banks, showing that those banks most aligned to the GOC’s strategies and influences are providing loans at heavily distorted values when compared to banks with greater commercial interests.
232. As an encouraged industry titanium dioxide producers in the PRC benefit from these lower rates on their day-to-day banking and borrowing expenses. Additionally, within the Chinese banking system are three ‘policy banks’. In a now removed overview of policy banking the People’s Bank of China states that:

¹¹⁴ European Commission, [Commission Staff Working Document On Significant Distortions in the Economy of The People’s Republic of China for the Purposes Of Trade Defence Investigations](#), page 138, accessed 7 September 2026

¹¹⁵ Bank of China, 2025 Annual Report, [P020260429600361167232.pdf](#), page 23, accessed 7 September 2026

¹¹⁶ KPMG, Moving in sync: the key to success, [Chinese Mainland Banking Survey 2025 Summary](#), accessed 7 September 2026



*'Policy banks mainly refer to financial institutions established or guaranteed by the government, aimed at implementing national industrial and regional development policies, with special financing principles, and not aiming for profit. The financial business of China's policy banks is guided and supervised by the People's Bank of China. [...] Compared with commercial banks and other non-bank financial institutions, policy-based banks share similarities, such as strict loan review, principal and interest repayment, and turnover usage. However, as policy financial institutions, they also have their own characteristics: first, the capital of policy banks is mostly allocated by government finances; Second, policy banks mainly consider the overall interests of the country and social benefits when operating, not aiming for profit.'*¹¹⁷

233. As can be understood these banks operate not primarily to make profit, but to further the GOC's political policies, granting access to funding that would not otherwise be available, or would be prohibitively expensive due to high levels of risk where the GOC deems it desirable.
234. For example, investment overseas in relation to the GOC's ongoing Belt and Road initiative is supported by Chinese policy banks.¹¹⁸ With direct relevance to the goods concerned, it is reported that among the most prominent investments by PRC policy banks is the mining sector.¹¹⁹
235. Reporting shows that it is GOC policy to secure upstream materials for the benefit of PRC producers through the subsidised purchase of mines and other sources of materials in non-PRC territories,¹²⁰ thus securing PRC access to global supplies of critical raw materials at advantageous prices and availability.
236. The TRA has assessed the evidence and determined that the GOC takes an active role in financial markets, distorting market conditions in line with GOC policies. There are distortions in the PRC in relation to finance, and the titanium dioxide industry, which includes producers of the goods concerned, is an industry that is impacted by this situation.

F2.1.2.6 Titanium Feedstocks

237. The PRC controls much of the world's reserves and production of ilmenite and rutile,¹²¹ the two major sources of feedstock for titanium dioxide, and the origin material

¹¹⁷ WayBack Machine, [Overview of Policy Banking](#), accessed 7 September 2026

¹¹⁸ Wiley, Online Library, [Does Chinese policy banks' overseas lending favor Belt Road Initiative countries? - Chen - 2022 - International Studies of Economics - Wiley Online Library](#), accessed 7 September 2026, and, [China's metals financing soars in record year for Belt and Road programme | Global Trade Review \(GTR\)](#), accessed 7 September 2026

¹¹⁹ [China's Evolving Footprint in the Western Balkans: Navigating Between the Belt and Road Initiative and the Covid-19 Pandemic - Tirana Observatory](#), accessed 7 September 2026

¹²⁰ [Power Playbook: Beijing's Bid to Secure Overseas Transition Minerals](#), accessed 7 September 2026

¹²¹ [China's titanium dominance: vertical supply chain, cost edge, and global ripple effects - The Oregon Group - Critical Minerals and Energy Intelligence](#), accessed 7 September 2026



from which other feedstocks are produced.¹²² Approximately 95% of all titanium feedstock globally becomes titanium dioxide.¹²³

238. The titanium mines themselves benefit from all the cross-cutting advantages, as outlined above, such as easier access to low price finance, lower wages, research grants and perhaps most crucially lower land costs, due to land in the PRC being allocated by the government, rather than purchased.
239. The 14FYP, which covers 2025, gave the mining sector a clear direction in securing supply.¹²⁴ The more specific '5 year plan for the development of the raw materials industry' adds to this by reclassifying raw materials as national security assets.¹²⁵ The 14FYP for the development of the raw materials industry further includes an instruction to decarbonise and 'accelerate the greening of industrial development'.¹²⁶
240. Other relevant stated goals within the FYP for the development of the raw materials industry include:
- 1) Increasing the share of new materials in the raw-materials sector.
 - 2) Establishing a stable resource supply system.
 - 3) Developing;
 - Safe and efficient mining of complex ore deposits.
 - Deep shaft Mining technology.
 - Advanced extraction and beneficiation technologies.
 - 4) Establishing large-scale manufactured sand and aggregates production bases.
 - 5) Creating leading industrial chains enterprises in non-ferrous metals.
241. All of these are supported by 'financial institutions being encouraged to provide financing for ... industrial upgrading projects' The FYPs are more than guidance, they are an expectation of industry and state interference distorting the market.
242. Titanium sponge is an intermediary product between the raw mined ilmenite or rutile and titanium dioxide among other titanium products. As titanium sponge is also a feedstock in the process of making titanium metal, which is considered a strategic product due to its use in defence and aerospace, it is subject to strict export control from the PRC,¹²⁷ meaning much of the lower cost caused by state intervention in the feedstock does not flow through to international markets.
243. The TRA has assessed the evidence and determined that the GOC takes an active role in the titanium feedstock market, distorting market conditions in line with GOC

¹²² [The Titanium Market | SFA \(Oxford\)](#), accessed 17 September 2026

¹²³ [Titanium Statistics and Information | U.S. Geological Survey](#), accessed 17 September 2026

¹²⁴ [Policy shift raises cost floor for China's nonferrous metals - MMTA](#), accessed 7 September 2026

¹²⁵ Ministry of Industry and Information Technology, [Notice from three ministries on issuing the "14th Five-Year Plan" for the development of the raw materials industry](#), accessed 7 September 2026

¹²⁶ HC Chemical, [14th Five-Year Plan for the Development of Raw Materials Industry - Suzhou Hechuang Chemical Co., Ltd.](#), accessed 7 September 2026

¹²⁷ [Recent China Export Control Actions Signal Active Enforcement for Rare Earths and Strategic Minerals | Morgan Lewis - JDSupra](#), accessed 7 September 2026



policies. There are distortions in the PRC in relation to mineral feedstocks, and the titanium dioxide industry, which includes producers of the goods concerned, is an industry that is impacted by this situation.

F2.1.2.7 Sulphuric acid

244. The PRC is the world's largest producer of sulphuric acid, accounting for over 40% of the global output.¹²⁸ Titanium dioxide production in the PRC mostly uses the sulphate method, which accounts for roughly 83.4% of annual output.¹²⁹

245. Sulphuric acid is produced as a byproduct of the copper and zinc industries and as such derives production cost benefits of copper and zinc being encouraged industries.^{130, 131} The advantages bestowed on these industries as part of the GOC's circular economy ambitions further distort the production of sulphuric acid.¹³²

246. The PRC imports comparatively low volumes of sulphuric acid, data from Global Trade Tracker (GTT) shows that 127MT was imported in 2025, whereas PRC production capacity is noted to exceed 177 Million MT.¹³³ The distortions caused by the lower production costs of sulphuric acid within the PRC are applicable to significant production volumes when compared to imports, and therefore impact the entire PRC market.

F2.1.2.8 Chlorine and caustic soda

247. Chlorine and caustic soda are created using a similar process, known as the chlor-alkali process. 60% of global production takes place in the Asia Pacific region, with further capacity being brought online.¹³⁴

248. The process is energy intensive and market reports state that productivity of producers in many jurisdictions is heavily impacted by energy price rises which can account for over 30% of the cost of production, which flows through to the sales price of the product.¹³⁵ The energy levels required for the chlor-alkali process means the GOC's distortion of energy prices (set out above) has an impact on the cost of producing chlorine and caustic soda in the PRC.

¹²⁸ [China to fully restrict sulfuric acid exports starting in May; global supply-chain restructuring accelerates - ChemNet](#), accessed 7 September 2026

¹²⁹ Leal Chemical, [China's titanium dioxide production capacity leads the ...](#), accessed 7 September 2026

¹³⁰ Catalogue of Industries Encouraged for Foreign Investment, [P020221028505148430874.pdf](#), accessed 7 September 2026

¹³¹ [Worldwide food supply chain to take a hit by China's sulphuric acid ban - CILT](#), accessed 7 September 2026

¹³² [China's circular economy development plan for the 15th five-year period: Signals of a more systemic transition | Ellen MacArthur Foundation](#), accessed 7 September 2026

¹³³ [China to fully restrict sulfuric acid exports starting in May; global supply-chain restructuring accelerates - ChemNet](#), accessed 7 September 2026

¹³⁴ Market Reports World, [Chlor Alkali Market Size, Report, Trends By 2035](#), accessed 7 September 2026

¹³⁵ Sahi, [Energy Crisis Ignites 20% Surge in Caustic Soda Prices: Impact on Indian Chemical Giants](#), accessed 7 September 2026



249. An Asia Chemical article from March 2024 states:

*'In order to improve the overall competitiveness of the chlor-alkali industry, reduce energy and raw material consumption, and achieve sustainable development, the country has continuously introduced industrial policies to guide the healthy and stable development of the industry.'*¹³⁶

250. The outputs from the chlor-alkali process are ingredients that are themselves used in a large number of other products, most notably in paper and the growing PVC industry.¹³⁷

251. Many of these industries that use outputs of the chlor-alkali process are themselves encouraged by the GOC, which causes associated benefits to pass onto the chlor-alkali process. For example, the GOC circular economy policies require firms to seek to reuse or find other uses for what would otherwise be considered a waste product,¹³⁸ in tandem with the 'Made in China 2025' policy, has encouraged PRC PVC manufacturers who are experiencing increased demand from construction work to source their chlorine from Chinese producers.¹³⁹

252. The PRC's green aspirations, as set out in the 14FYP for the Development of Raw Materials Industry, encourages moves towards less environmentally damaging industries. This is relevant to producers of the goods concerned as the chloride production method is more environmentally friendly than the sulphate method.

253. Zhongtai securities, a major wealth management company in the PRC, stated in 2020 that they consider that *'Sulfate-process capacity will gradually be eliminated under environmental pressure [...] Future new TiO₂ capacity in China will primarily adopt the chloride process.'*¹⁴⁰ These comments demonstrate the expectation that exists within the PRC banking system that the chloride method is the growth area of titanium dioxide. As set out above, much of the bank system in the PRC is controlled either directly or indirectly by the GOC.

254. The TRA has therefore determined that there are distortions in the production of chlorine and caustic soda due to GOC encouragement of the industry, and the aforementioned benefits derived from GOC intervention. This is further evidenced by both chlorine and caustic soda production, and the chlorine production process of the goods concerned being encouraged industries.

¹³⁶ Asia Chemical, [China's chlor-alkali industry prospects from 2024 to 2029 - Blog](#), accessed 7 September 2026

¹³⁷ Fortune Business Insights, Chemical and Materials, [Chlorine Market Size, Share | Industry Report, 2034](#), accessed 7 September 2026

¹³⁸ ResearchGate, [\(PDF\) "Made in China 2025 Initiative" and Dual Circulation Economy: Reducing Dependence on U.S. Technology](#), accessed 7 September 2026

¹³⁹ Global Newswire, [China Plastic Pipes Market, Competition, Forecast & Opportunities Report 2025](#), accessed 7 September 2026

¹⁴⁰ Titanium Dioxide Industry Review: Post-Real Estate Cycle Recovery and Technological Transformation, [华泰证券-化工周期巡礼之钛白粉：地产后周期,技术领变革-200705.pdf](#), accessed 7 September 2026



F2.1.2.9 Coal

255. The GOC has a policy of command and control over coal production in the PRC in an effort to meet climate goals while providing energy security.¹⁴¹

256. To facilitate this direct management, the GOC has ownership of the largest coal mines in the PRC.¹⁴² Of the top 5 mines in the PRC, four are run by state owned companies (China Shenhua [operating 3 of the 5] and Inner Mongolia Dian Tou Energy,^{143, 144} the fifth is operated by the Shaanxi Coal and Chemical Industry Group, an SOE of the Shaanxi state).¹⁴⁵

257. The widespread manipulation by the GOC in the output of coal from mining is further reflected in the primary use of coal in the PRC, power generation. GOC policy is to provide guaranteed operating hours for coal power plants constructed since 2010.¹⁴⁶ This is an artificially created market with guaranteed demand for the coal produced in the PRC, removing market forces.

258. The EU's market distortion report further highlights the impact of over capacity on coal prices in the PRC,¹⁴⁷ as well as noting the GOC intervened directly in the price of coal in February 2022:

'[...] asking the major state-owned miners, China Shenhua Energy Co. and China Coal Energy Co. among them, to cap their prices once more below RMB 700 a ton to keep pushing the prices down'.¹⁴⁸

259. The EU further notes the large array of subsidies available to coal producers in the PRC, stating that in 2020 the subsidies for coal were estimated at \$1.55 Billion,¹⁴⁹ and that in 2022 there was a further announcement of an additional injection of RMB 10 billion into coal fired power plants.¹⁵⁰

260. Much of the state support for the coal industry is in reference to power generation, however this state support also distorts the price of coal on the PRC markets, meaning that relatively smaller users, such as the producers of the goods concerned, benefit from these controlled prices.

¹⁴¹ [The Carbon Brief Profile: China](#), accessed 7 September 2026

¹⁴² Mining Technology, [The five largest coal mines in China](#), accessed 7 September 2026

¹⁴³ 69.5% owned by CHN Energy ([Organizational Structure](#)) which is itself fully state owned ([Profile](#)), accessed 7 September 2026

¹⁴⁴ Subsidiary of CPI Mendong ([Inner Mongolia Dian Tou Energy Corporation Limited \(002128.SZ\) company profile and facts - Yahoo Finance](#)) itself a subsidiary of China Power Investment Corporation ([China Power Investment Corporation - Global Energy Monitor](#)), a SOE, accessed 7 September 2026

¹⁴⁵ [Shaanxi Coal and Chemical Industry Group Co., Ltd. - BNamericas](#), accessed 7 September 2026

¹⁴⁶ [China overinvested in coal power: Here's why | CEPR](#), accessed 7 September 2026

¹⁴⁷ European Commission, [SWD\(2024\)91 - Register of Commission Documents](#), accessed 7 September 2026

¹⁴⁸ Bloomberg UK, [China Stops Coal Price Reporting to Crack Down on Rally - Bloomberg](#), accessed 7 September 2026

¹⁴⁹ Climate Transparency, China, [CT2022-China-Web.pdf](#), accessed 7 September 2026

¹⁵⁰ [China to inject \\$1.5 bln to help state coal-fired power firms | Reuters](#), accessed 7 September 2026



F2.1.2.10 Petroleum coke

261. Petroleum coke is a carbon-rich, solid byproduct of crude oil refining; it is used in the production of the goods concerned. It comes in high and low purity; high purity is required for titanium dioxide production.¹⁵¹
262. The PRC imports a large amount of the crude oil it uses from countries subject to international sanctions. These imports from Venezuela, Iran and Russia allow the PRC to sustain comparatively lower prices.¹⁵² The GOC has also intervened to restrict the use of high sulphur (low purity) coke in most industrial processes.¹⁵³
263. The PRC is an importer of petroleum coke, importing approximately 15,000,000 tons in 2025. This in addition to the estimated 31,000,000 tons produced in the PRC reflects an estimated consumption of 45,770,000 tons. An estimated 230,000 tons were exported from the PRC in 2025.¹⁵⁴
264. The reliance on international markets to meet the PRC's domestic needs, means that the TRA cannot conclusively determine whether prices are subject to distortions in the current investigation.

F2.1.2.11 Iron scrap

265. Iron scrap is directly linked to the production of steel and the cost of iron ore. When iron ore prices are comparatively low, PRC steel producers will shift their focus from using iron scrap to iron ore.¹⁵⁵ This is also affected by environmental measures to cease the importation of scrap materials from abroad.¹⁵⁶
266. The price of scrap iron in the PRC is therefore dictated only by domestic production, which itself is dictated by demand in the steel industry and iron ore production. The steel industry in the PRC is significantly distorted through GOC interventions,¹⁵⁷ as is the production of iron ore in the PRC.¹⁵⁸
267. The TRA has therefore determined that the price of scrap iron is distorted by the control of the relevant markets by the GOC.

¹⁵¹ WOTAchem, [Titanium Dioxide Pigment Manufacturer | Complete 10-Series Portfolio](#), accessed 7 September 2026

¹⁵² [Where China Gets Its Oil: Crude Imports in 2025 Reveal Stockpiling and Changing Fortunes of Certain Suppliers, Including Those Sanctioned - Center on Global Energy Policy at Columbia University SIPA | CGEP](#), accessed 7 September 2026

¹⁵³ Argus, [China seeks to curb high-sulphur fuel coke | Latest Market News](#), accessed 7 September 2026

¹⁵⁴ Echemi, [Oil Coke to Rise Sharply in 2025, Likely to Experience Relatively Strong Volatility in 2026](#), accessed 7 September 2026

¹⁵⁵ GMK Center, [Scrap usage in China's steel industry lags behind expectations – Morgan Stanley](#), accessed 7 September 2026

¹⁵⁶ [China bans foreign scrap metal from Jan 2021, abolishes scrap import quota - Fastmarkets](#), accessed 7 September 2026

¹⁵⁷ Tin Mill AD0062, Statement of Essential Facts, [The-Statement-of-Essential-Facts_SD-0000050623-J7M0.pdf](#), accessed 7 September 2026

¹⁵⁸ [Lessons from China's latest iron ore price muscling | Article | Hinrich Foundation](#), accessed 7 September 2026



F2.1.2.12 Waste disposal

268. The waste management sector in the PRC is an encouraged industry.¹⁵⁹ This means that there is a wide range of government support available for businesses active in this sector, as set out above.
269. In addition to being an encouraged industry, the 14FYP on the circular economy includes specific goals and targets for the economy to achieve by reducing and reusing waste.¹⁶⁰
270. A circular economy seeks to use resources for their maximum utility throughout their life cycle and regenerated in a cyclical pattern minimizing waste. It was formally adopted by the GOC in 2002 by the 16th National congress of the Chinese Communist Party.¹⁶¹
271. This can be seen in the questionnaire response of LB Group, who state that one of its waste products, ferrous sulphate, is sold as an additional product that can be used in a number of ways.¹⁶² The 2023 annual accounts of LB Group emphasises the importance of the circular economy to the company, stating:

*'In addition, the current raw materials supply system in the Company suffice its strategy to develop new energy, and its waste byproduct - ferrous sulphate as well as surplus capacity in caustic soda, sulfuric acid, steam and hydrogen can be directly or indirectly harnessed to produce anode/cathode materials for lithium batteries at lower costs. The Company fully harnesses its advantages in management, research and development, technology and supply chain to research and develop ferric phosphate, lithium ferric phosphate, graphite cathode and other battery materials, with the objective of cultivating a secondary growth curve.'*¹⁶³

272. The GOC objective of creating a circular economy in the PRC, combined with the cost benefits of being an encouraged industry (research and development, lower taxes, subsidies,¹⁶⁴ lower cost of borrowing etc.) create a distorted, particular market relating to the cost of waste disposal for producers of the goods concerned.

F2.1.3 Assessing against comparator values

273. The TRA initially considered whether there are any undistorted domestic PRC values with which costs could be compared. Having considered that the distortions shown cover all aspects of the PRC economy and would be equally true of any companies operating in the PRC, the TRA considered that it was unable to source undistorted data for comparison from the PRC.

¹⁵⁹ [Report-Hazardous-Waste-Sector-China-2024-EU-SME-Centre.pdf](#), accessed 7 September 2026

¹⁶⁰ [14th Five Year Plan on circular economy – Policies - IEA](#), accessed 7 September 2026

¹⁶¹ [The development of Circular Economy in China as a national strategy](#), accessed 17 September 2026

¹⁶² [Industrial Uses of Ferrous Sulfate - Rech Chemical Co.Ltd](#), accessed 7 September 2026

¹⁶³ [LB-GROUP-2023-ANNUAL-REPORT.pdf](#), page 29, accessed 7 September 2026

¹⁶⁴ Proactive, [China Industrial Waste Management receives RMB10m of subsidy for new facility | OTC:CIWT](#), accessed 7 September 2026



274. The TRA has selected the most appropriate comparator value on a cost-by-cost basis, considering the availability of undistorted data and economic factors where appropriate.

F2.1.3.1 Electricity

275. We have compared electricity prices in Brazil to the confidential electricity costs provided by the LB Group of cooperating, sampled exporters who are representative of the costs of production for the goods concerned. The result of this comparison is that the electricity costs for producers of the goods concerned is significantly below the benchmark electricity prices from Brazil.

276. This difference is also visible on a countrywide basis. Industrial electricity prices in the PRC throughout the POI peak at approximately 0.66 CNY/KWH, with a low of approximately 0.63 CNY/KWH.¹⁶⁵ Electricity prices in Brazil throughout the POI peak at approximately 1.25 BRL/KWH, with a low of approximately 0.9 BRL/KWH.¹⁶⁶ The exchange rate of CNY to BRL during the POI was an average of 1.2863.¹⁶⁷

	Low	High	Average (Estimate)
China	0.63	0.66	0.65
Brazil	1.16	1.61	1.299
Difference	85%	144%	100%

Figure 7 A comparison of industrial electricity prices during the POI in CNY

277. The differences in electricity pricing between the PRC and Brazil is also evident over a longer period from a different data source, which shows a 22.3% price difference between 2023 and 2026.

278. Finally, the Brazilian government published monthly electricity prices up to December 2024, which are consistent with the prices provided from other sources.¹⁶⁸ This serves to verify the electricity pricing data from secondary sources, as there are three independent sources that are consistent with each other, one of which is an official government statistic.

279. The TRA has therefore determined that the PMS that relates to electricity prices in the PRC has caused distortions in the cost of energy in the PRC of which producers of titanium dioxide would benefit.

¹⁶⁵ [Electricity Price in China | Intratec.us](#), accessed 7 September 2026

¹⁶⁶ [Electricity Price in Brazil | Intratec.us](#), accessed 7 September 2026

¹⁶⁷ Exchange Rates, [Brazilian Real to Chinese Yuan History: 2025](#), accessed 7 September 2026

¹⁶⁸ Government of Brazil, [12 - Brazilian Monthly Energy Bulletin - December 2024 — Ministry of Mines and Energy](#), accessed 7 September 2026



F2.1.3.2 Natural gas

280. We have compared natural gas prices in Brazil to the confidential natural gas costs provided by the LB Group of cooperating, sampled exporters who are representative of the costs of production for the goods concerned.
281. The TRA has been unable to access reliable, market price data that relates only to the POI, and so has used a secondary source for 2023 to 2026 industrial natural gas pricing data, which is the best fact available to the TRA.¹⁶⁹
282. The natural gas costs that were submitted in the questionnaire responses of the cooperating exporters to this investigation were provided in cubic meters for the POI, whereas the benchmark data is in KWH. We used a conversion rate of 1m³ is equivalent to 10.55 KWH,¹⁷⁰ and an exchange rate of 7.19 for USD to CNY to facilitate the comparison.¹⁷¹
283. The result of this comparison is that the natural gas costs for producers of the goods concerned is significantly below the benchmark electricity prices from Brazil. The same source shows that, on a countrywide basis, natural gas pricing is higher in Brazil than in the PRC from 2023 to 2026 by 14.49%.
284. Based on these comparisons, the TRA has determined that the PMS that relates to industrial natural gas prices in the PRC has caused distortions in the cost of industrial natural gas in the PRC.

F2.1.3.3 Steam

285. Several cooperating exporters of the goods concerned have submitted that steam forms part of their energy inputs when manufacturing the goods concerned. This is common practice in the PRC with industrial parks often having a central hub that provides steam.^{172, 173}
286. These hubs are encouraged by the 14FYP on the circular economy lowering costs considerably.¹⁷⁴

¹⁶⁹ [Compare energy prices in Brazil and China | GlobalPetrolPrices.com](#), accessed 7 September 2026

¹⁷⁰ [Gas consumption calculator: conversion of m³, kWh, MWh, ft³, Btu](#), accessed 7 September 2026

¹⁷¹ [Dollar Yuan Exchange Rate \(1981-2026\)](#), accessed 7 September 2026

²⁰²⁶ <https://www.macrotrends.net/2575/us-dollar-yuan-exchange-rate-historical-chart>

¹⁷² [81 companies supplied with steam and power | Veolia](#), accessed 7 September 2026

¹⁷³ [In Shanghai Chemical Industry Park \(SCIP\), we generate steam for reuse while removing pollution | SUEZ in Asia](#), accessed 7 September 2026

¹⁷⁴ [14th Five Year Plan on circular economy – Policies - IEA](#), accessed 7 September 2026



287. Each industrial park has its own system based on local availability of fuel.^{175, 176} For this reason, it is not possible for the TRA to accurately compare PRC costs to benchmark prices.

288. Steam is generated by a mixture of gas and electricity it is subject to the same distortions, set out above, that are present in those markets in the PRC. The TRA has therefore treated the distortions in steam generation as being equal to the wider distortions in the energy and applied the mix of electricity and gas as appropriate.

F2.1.3.4 Land costs

289. The exporter questionnaire responses contain the cost of land per square meter for every participating exporter. To obtain benchmark prices in Brazil, we assessed the cost of land in the Bahia region in the city of Camacari, where Tronox Brazil, the only Brazilian producer of titanium dioxide, is located.

290. The TRA found the price of a parcel of land in Bahia reported as a lease of 17,500BRL per month on an area of 16,000 m²,¹⁷⁷ this results in a m² cost per month of 1.094BRL or 1.407CNY per m². Further to this there is an initial fee for the land in Brazil of 1,500,000 BRL, or 93 BRL per m². To fairly compare the Brazilian and PRC land costs we amortized the initial fee over the standard 50-year leasing period to add an additional 0.155 BRL (0.199CNY) to the monthly cost of land in Brazil, raising it to 1.606 CNY per m².

291. A comparison to the land costs of the exporters of the goods concerned shows that the land costs in the PRC are significantly lower than the benchmark prices in Brazil.

292. For a countrywide PRC comparison, land prices in the PRC are determined by the location, for example land costs in major hubs such as Shanghai and Beijing are significantly higher than those in rural areas.¹⁷⁸

293. Land in the PRC cannot be bought and sold, it is owned by the GOC and leased for defined periods, normally of 50 years. Based upon the locations of the sampled exporters to this investigation, titanium dioxide facilities in the PRC are located in 2nd tier PRC cities rather than major hubs.

294. The location that we will use for comparison is China's southwestern region, which includes the city of Panzhihua, which is a major centre of titanium dioxide manufacture and ore extraction.¹⁷⁹ The available data records the lease price for a m² of land as

¹⁷⁵ [Cities in China and Germany taking bold circular development as daring climate action – ICLEI East Asia](#), accessed 7 September 2026

¹⁷⁶ Youtube, CGTN, [How a waste-to-energy plant powers Guangzhou's circular economy](#), accessed 7 September 2026

¹⁷⁷ Myimmoblie, [Polo Industrial Camaçari| Terreno Plano 16.000m²| Próximo BYD](#), accessed 7 September 2026

¹⁷⁸ Savills, Leveling up, China Industrial Market, <https://pdf.savills.asia/selected-international-research/221110-china-industrial-public-en-0112.pdf>, accessed 7 September 2026

¹⁷⁹ [China Land Price: 36 City: Southwest Area: Industrial | Economic Indicators | CEIC](#), accessed 7 September 2026



653.774CNY in September 2021. This is then amortized over the 50 year period to provide a monthly cost per m² of 1.090CNY per m² per month.

295. A comparison between a square meterage cost of 1.090 CNY per month in the PRC, and 1.606 CNY per month in Brazil, shows a comparable increase of 47.4% from the PRC price to the Brazilian price.
296. The comparison between the land costs of the exporters of the goods concerned and the benchmark land costs, as well as the countrywide comparison demonstrates that the PMS in relation to industrial land prices in the PRC distorts the cost of land for exporters of the goods concerned.

F2.1.3.5 Labour costs

297. We have been provided with data by one of the sampled exporters, the TRA considers that as all sampled exporters are from the same group of companies it is reasonable to conclude that costs that apply to this company will be representative of the costs in the rest of the companies in the group.
298. The TRA has also sourced PRC benchmark data for the entirety of the PRC and has therefore compared labour costs to Brazilian benchmark costs, and the exporters costs.
299. The Brazilian government publishes a dataset of employment figures across all industrial sectors.¹⁸⁰ To establish a benchmark, we have used the employment data for companies in the inorganic chemical production sector. This data is available until the end of December 2024. We have applied the consumer price index to bring the prices up to date for 2025,¹⁸¹ and then applied the average exchange rate of 1.2862 for 2025 to construct a CNY equivalent.¹⁸²
300. The average number of annual working hours in Brazil is 1,994.¹⁸³ We used this to calculate an hourly rate for the benchmark figure. For the PRC average labour costs we used data from the National Bureau of Statistic of China for 2025.¹⁸⁴ This data is presented broken down by grade. Production has its own category and so has been compared directly. For the non-production categories of employment, the TRA has constructed a weighted average based on the number of employees in each assigned role from the information provided by the exporting company.
301. Having ascertained average salary data, the TRA compared this on an hour-to-hour basis. The standard contractual hours in the PRC are 1,984, being 261 working days,

¹⁸⁰ IBGE, Annual Industrial Survey – Company, [Table 10473: General data of industrial enterprises with 30 or more employed persons, according to divisions, groups and classes of activities \(CNAE 2.0\)](#), accessed 7 September 2026

¹⁸¹ World Bank Group, [Inflation, consumer prices \(annual %\) - Brazil | Data](#), accessed 7 September 2026

¹⁸² Exchange Rates, [Brazilian Real to Chinese Yuan History: 2025](#), accessed 7 September 2026

¹⁸³ Federal Reserve Bank of St. Louis, [Average Annual Hours Worked by Persons Engaged for Brazil \(AVHWPEBRA065NRUG\) | FRED | St. Louis Fed](#), accessed 7 September 2026

¹⁸⁴ National Bureau of Statistics of China, [Average Annual Wages of Employees in Urban Units in 2025](#), Table 7, accessed 7 September 2026



less 13 statutory holidays¹⁸⁵ multiplied by 8 working hours a day.¹⁸⁶ We then compared these PRC labour costs, as a total, to those of Brazil to determine whether distortions are present in the PRC market for labour. Nationally this shows a discrepancy of 147% for direct and 80% for indirect labour.

302. We have determined that the cost of both direct and indirect labour is significantly cheaper in the PRC than it is in the benchmark data from Brazil. The TRA have therefore concluded that the cost of labour is impacted by the PMS that is present in the PRC.

F2.1.3.6 Finance costs

303. The exporter questionnaire responses submitted to this investigation contain sufficient information with which to calculate the average cost of borrowing for each company in the PRC.

304. Due to the global nature of financial markets the TRA considered that it would be most appropriate to compare the PRC with the average values of its economic peers, the TRA concluded that the other G20 nations, of which the PRC is a member would make a suitable analogue in this instance.

305. Lending agencies in the PRC are reported to inflate the credit ratings provided to PRC companies, which set the cost of finance offered by the banking system.¹⁸⁷ There is evidence that credit ratings are requested, and controlled, by the GOC.^{188, 189} The artificial credit ratings reported in the source material, and the lower borrowing costs that result from these ratings, were in place during the POI.

306. Researchers have established that companies with ratings both in the PRC and globally are rated as AAA in the PRC which is equivalent to a BBB+ internationally.¹⁹⁰ A BBB+ rating (equivalent to a Moodys Baa1 rating) is 8 grades away from an AAA rating.¹⁹¹ The Federal bank of St Louis' records of the corporate bond yields throughout 2025 for Moody's (a large global credit agency).

¹⁸⁵ China Briefing, [China National Holidays 2025 Schedule and Adjusted Working Days](#), accessed 7 September 2026

¹⁸⁶ [Working time in the People's Republic of China](#) Simmons & Simmons, accessed 7 September 2026

¹⁸⁷ Bank For International Settlements, [Credit ratings of domestic and global agencies: What drives the differences in China and how are they priced?](#), accessed 7 September 2026

¹⁸⁸ The Times of India, [Why Chinese investors are reviewing bond portfolios as AAA ratings come under scrutiny - The Times of India](#), accessed 7 September 2026

¹⁸⁹ The Standard, [China asset managers review bond holdings as regulators curb AAA rating glut](#), accessed 7 September 2026

¹⁹⁰ VoxChina, [Chinese Corporate Credit Ratings: Comparing Global and Domestic Agencies](#), accessed 7 September 2026

¹⁹¹ [Corporate Bond Credit Ratings Scales: Moody's, S&P, Fitch | Wolf Street](#), accessed 7 September 2026



307. During 2025 the average yield for a AAA rated company was 5.353 whilst for a BAA company it's 5.998, a difference of 0.646.^{192, 193} Taking this figure as a percentage of the undistorted AAA rating shows us that the average bond yield of a BAA company is 12% higher than those of a AAA company.
308. In addition to the advantageous credit ratings that PRC companies are able to access domestically, the cost of credit itself in the PRC is significantly lower than in other countries.
309. The average central bank rate in the PRC in 2025 was 3.03%. This compares to international peer countries in the G20, who (when the PRC is excluded from the figures) on average return a base rate of 9%.¹⁹⁴
310. This is a difference of 197%, demonstrating that lending in the PRC is substantially lower than in other countries. An examination of the exporter questionnaires submitted to this investigation has shown that this distortion of the cost of finance is present in the finances of the exporters of the goods concerned.
311. Combining the distortions for overstated credit ratings and low central bank rates there is a difference of 221% to benchmark data.
312. The TRA have concluded that both the interest being charged on loans, and the advantageous access PRC companies have to lower rates, have distorted the cost of finance for PRC producers of the goods concerned.

F2.1.3.7 R&D costs

313. The TRA has determined that there is a PMS in existence in the PRC that relates to R&D costs. However, the TRA has not been able to source verifiable benchmark data with which to adequately compare costs.

F2.1.3.8 Waste disposal

314. The TRA have determined that there is a PMS in existence in the PRC that relates to waste disposal costs. However, the nature of the circular economy in the PRC means that outputs from titanium dioxide production that might require waste disposal in other jurisdictions are often resold as byproducts in the PRC. This discrepancy between the treatment of waste products in the PRC and globally has prevented the TRA from locating a suitable benchmark for price comparison.

¹⁹² Federal Reserve Bank of St. Louis, [Moody's Seasoned Aaa Corporate Bond Yield \(DAAA\) | FRED | St. Louis Fed](#), accessed 7 September 2026

¹⁹³ Federal Reserve Bank of St. Louis, [Moody's Seasoned Baa Corporate Bond Yield \(DBAA\) | FRED | St. Louis Fed](#), accessed 7 September 2026

¹⁹⁴ The Global Economy, China: policy rate, https://www.theglobaleconomy.com/China/policy_rate/, accessed 7 September 2026



F2.1.3.9 Titanium feedstocks

315. Titanium feedstocks are traded globally under a small number of commodity codes. However, within those commodity codes there is a range of different products with a wide discrepancy in pricing, making comparisons at that level unreliable. The TRA therefore made use of granular analysis documents provided by interested parties.
316. The TRA has been able to ascertain global average prices for each category of feedstock used by every registered exporter. In some instances, the exporters have provided sufficiently granular detail that the TRA has also been able to compare data at a company level.
317. The TRA has found there to be distortions in the following categories of feedstock compared to global benchmark costs; sulphate ilmenite; chloride slag; chloride fines; heavy mineral concentrate; synthetic rutile/calcliner discharge; upgraded titanium slag ('UGS') and sulphate slag.
318. The TRA notes that whilst there are some categories of feedstock where individual registered exporters may show costs above the global benchmark, the PRC market when assessed as a whole demonstrates that costs are lower than the global average.
319. The TRA has therefore concluded that the cost of purchasing titanium feedstock is distorted in the PRC in comparison to global benchmarks.

F2.1.3.10 Sulphuric acid

320. Sulphuric acid is traded as a commodity internationally under HS code 28 07 00, we have therefore made comparison to a global average benchmark. In 2025 (the POI), the average price for this HS code was 953.2 CNY/MT.¹⁹⁵ We have compared this to the unit prices of sulphuric acid that were submitted to this investigation by the two exporters who use the sulphuric production process – LB Group Co., LTD and LB Xiangyang. This showed that the exporters of the goods concerned were subject to significantly lower costs than the international benchmark.
321. The average price for imports of sulphuric acid into the PRC was 880.82CNY/MT in the POI,¹⁹⁶ again this is substantially lower than the international benchmark price of 953.2CNY/MT.
322. The TRA have therefore concluded that the average price of sulphuric acid in the PRC is distorted to by 8.2% when compared to global benchmark prices.

F2.1.3.11 Caustic soda

323. The TRA has not received company level purchase prices for caustic soda, we have therefore compared the average cost of caustic soda in the PRC with a benchmark

¹⁹⁵ Global Trade Tracker

¹⁹⁶ Global Trade Tracker



price. Caustic soda is traded as a commodity internationally under HS code 28 15, we have therefore made comparison to a global average benchmark.

324. This data records, for the POI, that the average price of caustic soda in the PRC was 2,542.86CNY/MT and the average price globally was 2,650.53 CNY/MT.
325. Caustic soda prices are therefore 4.23% higher globally than they are in the PRC, which demonstrates that the distortions in the PRC have distorted prices for PRC industry.

F2.1.3.12 Chlorine

326. The TRA has not received company level purchase prices for chlorine, we have therefore compared the average cost of chlorine in the PRC with a global benchmark cost.
327. We have established an international benchmark for chlorine prices from GTT data.¹⁹⁷ We have removed sales that are linked to the PRC from this data to ensure that the benchmark price does not include distortions, and the resultant international benchmark price that we have established is 4,594.56 CNY/MT.
328. To establish a price for chlorine on the PRC domestic market, we have obtained price data for January 2025 and July to December 2025, which is the best information available to us.¹⁹⁸ This shows an average price of 2,372 CNY/MT.
329. A comparison of these two prices shows that the global benchmark price is 93.7% higher than the price in the PRC, demonstrating that the market for chlorine in the PRC is subject to distorted prices.

F2.1.3.13 Coal

330. The TRA has not received company level purchase prices for coal, we have therefore compared the average cost of coal in the PRC with a benchmark price. Coal is traded as a commodity internationally under HS code 27 01, we have therefore made comparison to relevant global benchmarks.
331. GTT records coal prices on the global market and for imports into the PRC. To establish a global market price, we removed imports to the PRC from the data with a resultant global benchmark price for coal of 855.85 CNY/MT. The price of coal imported into the PRC is 625 CNY/MT.
332. The price of coal in the PRC is therefore 36.8% lower than the globally traded coal price for the POI, which demonstrates that coal prices in the PRC are subject to market distortions.

¹⁹⁷ Global Trade Tracker

¹⁹⁸ IMARC, [Chlorine Price Index 2026 | Trend, Chart & Forecast](#), accessed 7 September 2026



F2.1.3.14 Iron scrap

333. The TRA has ascertained that iron powder is the correct form of iron to be comparing.
334. The TRA has not received company level purchase prices for iron powder, we have therefore compared the average cost of iron powder in the PRC with a benchmark price. Iron powder is traded as a commodity internationally under HS code 72 05 09, we have therefore made comparison to relevant global average benchmarks.
335. GTT provides prices for powdered iron (the type of iron used to produce the goods concerned), for both the international market and for imports into the PRC. This data records the global price of powdered iron to be 11,674.94 CNY/MT, and the price of imports into the PRC as 13.083.98 CNY/MT.¹⁹⁹
336. The price of iron scrap in the PRC is therefore 12.1% lower than the globally traded iron scrap for the POI, which demonstrates that iron scrap prices in the PRC are subject to market distortions.

F2.1.4. Causation

337. The TRA has considered whether advances in technology, productivity of workers, vertical integration or economies of scale could have caused the distorted input prices in the PRC.
338. Producers of the goods concerned, and titanium dioxide manufacturers internationally, research better ways to manufacture as a matter of routine. Exporters of the goods concerned,²⁰⁰ producers of the like goods in the UK and producers of like goods in third countries all claim to have proprietary production processes which are continually tweaked for efficiencies.^{201, 202} To the extent that we are able to, the TRA has reviewed the production processes of the exporters of the goods concerned and compared them to producers of the like goods, and have established that the general production processes share the same essential characteristics. Whilst there are minor differences in some production steps between producers, these differences are not exclusive to the producers of the goods concerned, and nor are they significant enough to explain the extent of the distortions set out in the above section.
339. Data shows that the productivity of workers in the PRC is comparable to international productivity levels and not a cause of distortions in the PRC market. Modelled estimates by the International Labour Organisation (ILO) show labour productivity in the PRC at \$20.6 USD GDP per hour worked is comparable to that of Brazil at \$21.2 USD GDP per hour worked, the world upper middle-income figure of \$22.1 USD GDP per hour worked and the world average of \$23.27 USD GBP per hour worked. The PRC ranks 150th out

¹⁹⁹ Global Trade Tracker

²⁰⁰ [LB-GROUP-2023-ANNUAL-REPORT.pdf](#), accessed 7 September 2026

²⁰¹ Companies House, Tronox Pigment UK Limited, [Annual Report and Financial Statements, For the Year Ended 31 December 2024](#), accessed 7 September 2026

²⁰² [Annual Reports - KRONOS Worldwide, Inc.](#), accessed 7 September 2026



of the 273 modelled productivity estimates of the ILO, Brazil ranks 143rd and the world average rank is 127th.²⁰³

340. Producers of the goods concerned in the PRC are generally vertically integrated to some extent, and the larger producers such as the LB Group of sampled exporters in this investigation are highly vertically integrated. This is also true of international producers, with the applicant, also being a vertically integrated group of companies. Producers of like goods in third countries, such as Chemours Group, are also vertically integrated. Vertical integration is a feature of titanium dioxide producers both within the PRC and internationally, and it is therefore not a factor that has affected the PRC market differently from any other market, and so it does not explain the cost distortions that are present in the production of the goods concerned.
341. LB Group have raised a specific point in regard to vertically integrated costs for energy in one of its PMS submissions, stating that; *'Captively produced electricity would, by definition, not be subject to those alleged distortions'*.²⁰⁴
342. The TRA understands that the electricity produced in this manner by LB Group is done so using natural gas and is therefore subject to any distortions found in that regard.
343. The titanium dioxide industry in the PRC is the largest in the world, and it is likely that there are advantages to PRC producers of the goods concerned due to the scale of titanium dioxide production in the PRC. This may allow for producers of the goods concerned to influence the entire value chain.²⁰⁵
344. However, the industry has only reached this scale through the centralised planning of government. The tax breaks and easy access to financing previously set out above allowing companies to grow quickly. This is coupled with easy access to raw materials controlled by state owned mining companies and the requirements of the GOC's FYP, which encourages state institutions to support the production of the goods concerned.
345. These factors show that the economies of scale are not derived from market forces, but are created, influenced and maintained by the GOC's intervention in the titanium dioxide production industry.

F2.1.5 Conclusion on existence of a PMS

346. The costs of producing the goods concerned in the PRC are distorted as a result of GOC intervention. We have found this to be the case for costs relating to electricity, natural gas, steam, land, labour, finance, titanium feedstocks, sulphuric acid, caustic soda, chlorine, coal, and iron scrap. We conclude that these distortions contribute to a

²⁰³ International Labour Organization, [Statistics on labour productivity - ILOSTAT](#), accessed 7 September 2026

²⁰⁴ LB Group, Response to the Applicant's submission on representative country and particular market situation, [20260629-AD0086-Response-to-Applicant-s-comments-on-PMS-NCV.pdf_SD-0000067755-Y6T9.pdf](#) page 6, accessed 7 September 2026

²⁰⁵ [China's titanium dominance: vertical supply chain, cost edge, and global ripple effects - The Oregon Group](#), accessed 7 September 2026



PMS in the titanium dioxide market in the PRC and cause the prices to reflect non-commercial factors.

F2.1.6 Proper comparison assessment

347. Where a PMS is ascertained, the TRA assess whether the distortions prevent a proper comparison between normal value and export price. To make this assessment the TRA first considers whether the distorted costs impact equally on both export and domestic prices to the same degree. Where no difference is found the TRA will consider the relative impact of the PMS on export and domestic sales prices.
348. Where the TRA finds that the PMS does not equally affect domestic sales and export sales to the same degree, the TRA may find that the use of comparable price is not possible appropriate for the purposes of regulation 7(1) of the Regulations.

Whether the effect of the PMS on the cost/price flows through to both the export price and domestic price to the same degree

349. In the PRC, producers of the goods concerned operate under market conditions which differ from those of exporters in other countries, including that of the UK industry. Specifically, the PMS in the PRC reduces the costs across all production of the goods concerned and the like goods by domestic companies. This is due to lower raw material costs and associated sales costs, allowing for lower sales prices to remain profitable.
350. Statements provided by the exporters that are cooperating with this investigation indicate there is no difference in the production process between domestically sold and exported goods. This is agreed by all parties in this investigation and reflects that rutile titanium dioxide is a commodity product. There is therefore no price difference derived from any necessary adjustment to the production of titanium dioxide for sale on domestic and international markets.

Relative effect of the PMS on both the export price and the domestic price

351. The TRA has considered both the UK and PRC markets for structure, raw material sources and import penetration to make a comparison on the impacts of the PMS in the PRC.
352. As noted in [E2.2. Competition](#), the UK market is served by a mixture of domestic producers and imports. The raw materials used in UK production are for the most part imported to the UK, with no domestic production of titanium feedstock in the UK.
353. Imports of titanium dioxide into the UK account for approximately 60% of the UK's market share. GTT data shows that during this period there were recorded imports from 35 countries, although over 78% came from 4 countries, Belgium (31%), the PRC (23%), the Netherlands (14%) and Germany (10%).
354. The high proportion of imports in comparison to market share from a number of different countries is evidence of a high level of import penetration into the UK, leading



to an open and competitive market. We have established that during the POI there were more than 60 producers of titanium dioxide in the PRC, with a total production of 4.72million MT.^{206, 207, 208} The questionnaires received from the sampled exporters show there is a considerable number of resellers in the market, although the total number is unknown, and large number of sales are also made directly from the producers to the end users.

355. The Titanium Dioxide Industry Technology Innovation Strategic Alliance reports that, of all titanium dioxide manufactured in the PRC in the POI, 86.9% is rutile titanium dioxide, with anatase being 10.7% and other making up 2.4% by volume.
356. GTT reports that 443,852 MT of titanium dioxide was exported from the PRC in the POI, from this it can be concluded that the remaining PRC production was used domestically. A further 3,058 MT is reported as having been imported to the PRC giving a total market size for titanium dioxide of approximately 4,279,206 MT.
357. The import penetration of titanium dioxide into the PRC is therefore 0.071%, meaning that within the PRC domestic producers of titanium dioxide compete almost entirely amongst themselves.
358. The questionnaires submitted to the TRA for this investigation indicate that the majority of raw materials used by producers of the goods concerned are purchased domestically and are subject to the price distortions as set out above. The exception to this is the exporters who use the chloride method of production. The TRA is aware of six producers of rutile titanium dioxide in the PRC who use this method of production. The questionnaire responses submitted by the two chloride producers who are registered to this investigation (Henan Billions and LB Lufeng titanium) show that they source a proportion of their feedstocks from imports. These imports are mostly from African countries with whom the PRC has commercial links. The TRA has been unable to confirm whether the imported feedstock is itself distorted and will not consider it as a PMS for this investigation.
359. As noted previously, titanium dioxide is considered a commodity product, meaning that there is nothing a company would need to change regarding its products to allow importation to the PRC. The PRC is also not known to have implemented import restrictions on titanium dioxide.
360. The TRA therefore considers that the market distortions in the PRC provide domestic companies with access to raw materials and costs at below comparable international prices. This makes competing on price difficult for companies looking to import profitably into the PRC, accounting for the low import penetration on the PRC domestic market of 0.071%.

²⁰⁶ SunSirs, Commodity Data Group, [SunSirs: China's Titanium Dioxide Output to Reach 4.72 Million Tons in 2025](#), accessed 8 September 2026

²⁰⁷ SunSirs, Commodity Data Group, [SunSirs: Statistics Show China's Titanium Dioxide Production Capacity and Output Both Decline for the First Time in 2025](#), accessed 8 September 2026

²⁰⁸ [China's Titanium Dioxide Output Declines as Capacity Surplus Grows - Blooming](#), accessed 8 September 2026



361. We have been unable to compare domestic selling prices for the goods across different Chinese manufacturers, due to a lack of cooperating responses from manufacturers except the LB Group. Nonetheless, based on the evidence presented to us by the applicant showing the number of titanium dioxide manufacturers in the PRC, we are satisfied that the Chinese domestic market for titanium dioxide is competitive.
362. As set out above, the relationship between price and cost allows for lower domestic sales prices in the PRC to remain profitable. The combination of a competitive market, and a commodity product, will lead to lower prices for titanium dioxide, as there are limited other competitive advantages that can be leveraged. The TRA have therefore assessed that the private commercial decisions of producers and exporters will be to sell their products at the lowest price with which they can remain profitable to secure the largest market share.
363. The lower production costs in the PRC, which are derived from the presence of a PMS, directly affect prices of the like goods made and sold domestically in the PRC. The distorted production costs result in a much lower price floor than there otherwise would be in an undistorted market.
364. All PRC producers of titanium dioxide are impacted equally by the nationwide distortions in costs, which gives each producer the same competitive advantages. This maintains competition between PRC producers for domestic market share. The main point of competition between companies is price, which drives PRC domestic market prices down. The lower costs of production that PRC producers of titanium dioxide have precludes any entry into the PRC domestic market by producers outside the PRC.
365. When exporting, the PRC producers retain the same benefits they hold in the domestic market, with the addition of the benefit of a grant from the subsidy for companies that perform well in export sales. These grants are recorded in LB Group accounts.²⁰⁹
366. Grants encouraging export sales, including sales to the UK, allow PRC companies to export at prices that are lower than on their domestic market and still retain the same overall level of profitability, whilst further undercutting UK prices.

F2.1.7 Proper comparison conclusion

367. The TRA's analysis shows that the conditions of competition and the relationship between price and cost in the PRC are different in comparison to the conditions of competition and the relationship between price and cost for exports to the UK.
368. We have determined that, whilst the titanium dioxide market in the PRC is competitive, the negligible level of import penetration shows that the sales prices in the PRC market are prohibitively low for non-PRC companies to be profitable.

²⁰⁹ LB Group, [Financial Information - 2023 annual report](#), page 293, accessed 7 September 2026



369. Conversely, the significant import penetration into the UK market shows that the market is competitive to producers globally. It is also a good indicator of fair competition. The TRA's analysis of imports from countries other than the PRC shows that the pricing is broadly similar to that of the UK industry, showing that these companies are competing under similar operating conditions.
370. Prices of titanium dioxide imports originating in countries other than the PRC were approximately 50% to 60% higher than those originating in the PRC during the POI. The TRA has concluded that these comparatively low sales prices of PRC companies in the UK are driven by the PMS in the PRC.
371. The effect of the PMS in the PRC decreases input costs across all production, resulting in a lower level of competitive pricing throughout the market. This, and the interchangeability of titanium dioxide between different producers limits the main competition in the market for domestic producers to price.
372. Whilst the effect of the PMS on the domestic sales prices in the PRC does not result in any competitive advantages or disadvantages between PRC producers, it does provide exporters of the goods concerned with an advantage on export markets.
373. In the UK, no PMS or input cost distortions exist in respect of titanium dioxide production, resulting in competitive pricing at a higher level, demonstrated by the significant import penetration from a range of countries that compete with UK produced like goods.
374. The higher production costs for producers of titanium dioxide who cannot access the distorted costs within the PRC result in higher minimum competitive prices, on a par with the UK domestic prices. Whereas, the distortions caused by a PMS in the PRC, results in low input costs and means the goods concerned have a competitive price advantage compared to other imports to the UK. This is evident in the import statistics, which record import prices of titanium dioxide from third countries as 50% to 60% higher than the import prices of titanium dioxide from the PRC.
375. This competitive advantage held by exporters of the goods concerned is further increased by the GOC offering subsidies for those exporters that perform well. This incentivises exporters of the goods concerned to lower their export prices, as any shortfall in profit from sales is artificially accounted for in government subsidies.
376. The TRA has therefore concluded that the existence of a PMS in the PRC prevents a proper comparison between the domestic price of the like goods produced and sold in the PRC and the export price of the goods concerned.
377. As the existence of a PMS prevents a proper comparison, it is not appropriate to use the comparable price for the purposes of determining normal value, in accordance with regulation 7(1) of the Regulations. Therefore, the TRA must determine the normal value of the goods in accordance with regulation 8 of the Regulations.



F2.2 Constructed normal value

378. As set out above, the TRA has determined that it is not appropriate to use the comparable price of the like goods in the PRC to calculate the normal value, in accordance with regulation 7(2) of the Regulations. Consequently, the TRA has used an alternative method to calculate the normal value.
379. The TRA has constructed the normal value of the goods in accordance with regulation 8(1)(a) of the Regulations, which sets out that the TRA must determine the costs of production plus a reasonable amount for administrative, selling and general costs and for profits, in accordance regulations 11 and 12 of the Regulations.
380. In accordance with Regulation 8(1)(c), an alternative methodology would be to construct normal value using Regulation 14, as requested by the applicant. However, internationally, there are differing views on whether the PRC can be treated as a Non-Market Economy and what approach authorities should take to it in trade remedies investigations. We will determine the normal value for Chinese exporters based on the facts of the case before us. In accordance with regulations 11(6) and 12(4) of the Regulations, where there are government interventions or other market distortions, we will construct the normal value by adjusting any cost or profit elements where they do not reasonably reflect what they would be in their domestic market if they were substantially determined by market forces under regulation 13(2).

F2.2.1 Costs of production

381. Where the TRA determines the costs of production for the purposes of regulation 8(1)(a) of the Regulations, it will do so in accordance with regulation 11 of the Regulations.
382. Regulation 11(2) of the Regulations sets out that where regulation 11(3) of the Regulations applies, the TRA will normally calculate the costs of production of the like goods on the basis of records kept by the overseas exporter.
383. This applies where the records of the overseas exporter of the goods:
- a) are in accordance with generally accepted accounting principles of the exporting country or territory; and
 - b) reasonably reflect the costs associated with the production and sale of the like goods in the exporting country or territory.
384. The verification process provided assurance that the records of the LB Group are in accordance with the GAAP of the PRC and reasonably reflect the costs associated with the production and sale of the like goods in the PRC. We have therefore calculated the costs of production on the basis of the records kept by LB Group / the overseas exporter of the goods concerned.



385. The TRA have assessed that the cost of production reflects non-commercial factors, which is reflected in a PMS in the market for titanium dioxide. As these are not considered normal circumstances, the exporter's costs of production have been adjusted in accordance with regulations 11(6) and 13 of the Regulations.

386. [F2.1. Particular market situation](#) has identified that there is a PMS affecting the following costs of production:

- 1) Energy
- 2) Land
- 3) Direct and indirect labour.
- 4) Finance
- 5) Raw materials, specifically:
 - Domestically sourced titanium feedstock
 - Sulphuric acid
 - Chlorine & Caustic Soda
 - Coal
 - Iron Scrap

387. Upon initiation the TRA received evidence that sulphuric acid, a key ingredient in the sulphate production process experienced significant fluctuations to costs during the POI.²¹⁰ On this basis we decided to calculate quarterly costs of production for the exporters. We requested that all costs be provided on a quarterly basis as we assessed that the request to exporters would be more easily understood in its totality, with relatively minimal additional work, rather than trying to request different treatments for different costs.

388. The TRA decided to compare the LB Group's products (the only sampled, cooperating exporters to this investigation) based on model numbers within the dumping calculation. This is due to the information being available at this level and allowing a greater level of accuracy than could be achieved by comparing at PCN level.

F2.2.2 Administrative, selling and general costs

389. Where the TRA determines a reasonable amount for administrative, selling, and general (AS&G) costs for the purposes of regulation 8(1)(a) of the Regulations, it will do so in accordance with regulation 12 of the Regulations.

390. Regulation 12(2) of the Regulations sets out that, subject to regulation 12(3) of the Regulations, the TRA must determine reasonable amounts for the AS&G costs on the basis of the actual data pertaining to the production and sales by the overseas exporter of the like goods, in the ordinary course of trade, in the domestic market of the exporting country or territory.

²¹⁰ ANHUI GOLD STAR TITANIUM DIOXIDE (GROUP) CO., LTD. Registration form, [Registration-of-Interest_SD-0000059602-B3M6.pdf](#) page 7, accessed 4 September 2026



391. The verification process provided assurance that the records of the LB Group are in accordance with the GAAP of the PRC and reasonably reflect the costs associated with the AS&G costs of the like goods in the PRC. We are therefore satisfied that we are able to determine reasonable amounts for the AS&G costs on the basis of the LB Group's actual data in accordance with regulation 12(2) of the Regulations.
392. The TRA has determined that all companies in the LB Group had sales in their domestic market that were made in the ordinary course of trade. We have therefore used the per unit AS&G costs reported to determine the AS&G cost for all sales of the goods concerned to the UK during the POI.
393. We have determined in the relevant sections above that the price of energy, land, labour and finance in the PRC reflects non-commercial factors. We have assessed whether these costs are artificially low relative to an international benchmark, where we have decided that it is appropriate to make adjustments, they have been made in accordance with regulations 12(4) and 13.

F2.2.3 Reasonable level of profit

394. Where the TRA determines a reasonable amount for profits for the purposes of regulation 8(1)(a) of the Regulations, it will do so in accordance with regulation 12 of the Regulations.
395. Regulation 12(2) of the Regulations sets out that, subject to regulation 12(3) of the Regulations, the TRA must determine a reasonable amount for profits on the basis of the actual data pertaining to the production and sales by the overseas exporter of the like goods, in the ordinary course of trade, in the domestic market of the exporting country or territory.
396. The verification process provided assurance that the records of the LB Group are in accordance with the GAAP of the PRC and reasonably reflect the costs associated with the prices and costs of the like goods in the PRC. We are therefore satisfied that we are able to determine reasonable profit levels on the basis of the LB Group's actual data in accordance with regulation 12(2) of the Regulations.
397. The TRA has determined that some domestic sales of the like goods made by all of the exporters in the LB Group were in the ordinary course of trade in the domestic market of the exporting country or territory on the basis of costs incurred within the year or quarter of the sale being made.
398. Noting that constructed normal value is calculated on an annualised basis, the TRA has compared the average annual sales price of each PCN for each company with the sum of the weighted average cost to make and sell (CTM + AS&G).
399. The TRA has thus determined a reasonable level of profit for each PCN sold on an exporter-by-exporter basis, this is in accordance with regulation 12(2).



400. The TRA has considered whether the distortions caused by PMS would impact on the profit margins and has determined that they would not be impacted. As noted above, the PRC market is highly competitive but only for domestic companies. Therefore, were distortions to cease to have an effect, all domestic companies would be impacted equally, and the competitive nature of the market would remain. The TRA has therefore determined that under such circumstances, sales of the like goods in the PRC domestic market would continue to operate as they currently do, just at a higher price point, meaning that profitability would remain unchanged.
401. The TRA therefore does not consider that the PMS on the titanium dioxide industry in the PRC impacts on the domestic profit margins of the sales of like goods made by the LB Group.

F2.3 PMS adjustments

402. In accordance with regulations 11(6) and 12(4) of the Regulations, the TRA may make adjustments to costs of production or AS&G costs in accordance with regulation 13 of the Regulations.
403. The TRA may make adjustments where regulation 13(3) of the Regulations applies, and for the purpose of regulation 13(2) of the Regulations.
404. Following an assessment of initial claims regarding the presence of a PMS and the receipt of questionnaire responses from interested parties and contributors, the TRA considered an appropriate representative country that could be used if it was determined that a PMS existed in the PRC that prevented a proper comparison between the domestic and export prices of the goods.
405. The TRA published a note to the public file indicating that we were considering Brazil, India, Malaysia, Mexico, Morocco and South Korea as a potentially appropriate benchmark countries.
406. Following the window for interested parties to comment on the proposed benchmark country selection, and having reviewed submissions, the TRA determined that Brazil was the most suitable benchmark country due to the availability of data and the similarity of economic development with the PRC (see [C2.6. Third country producers](#)).
407. When making adjustments the TRA has had regard to corresponding costs of production, administrative, selling, general costs and profits in an appropriate representative third country or territory and international prices, costs or benchmarks in accordance with regulations 13(4)(a) and 13(4)(b) of the Regulations.



408. As detailed in [F2.1.3. Assessing against comparator values](#), the following costs in respect of the production and sale of the like goods in the PRC require adjustment to determine the normal value for the like goods in the PRC:

- 1) Energy
- 2) Land
- 3) Direct and indirect labour.
- 4) Finance
- 5) Raw materials specifically:
 - Domestically sourced titanium feedstock
 - Sulphuric acid
 - Chlorine & Caustic Soda
 - Coal
 - Iron Scrap

409. Benchmark adjustments have been made based on the values calculated in section [F2.1.3. Assessing against comparator values](#), and have been applied on a percentage basis to the costs to make and sell provided by individual exporters.

F2.3.1 Exporter adjustments

410. To calculate suitable adjustments for each exporter we have first adjusted for the difference between the PRC average and the benchmark cost under regulation 13(4) of the Regulations.

411. The TRA has made a secondary adjustment to this figure to represent the company's costs in relation to the PRC average costs for the same input. This has been based on a comparison between the exporter's unit purchase costs and the PRC average unit costs. This methodology first removes distortions from the PRC market, and then restores the exporters cost position in the undistorted market to match that of its position in the PRC market. A company with comparatively high costs in the PRC will continue to have high costs in the undistorted market, and a company with lower costs in the PRC will still have comparably lower costs in the undistorted market.

412. These adjustments have been applied to the relevant cost to make, per MT of titanium dioxide for each exporter, to establish undistorted production costs for each exporter. We then used the undistorted production costs to construct normal value in accordance with regulation 13(4) of the Regulations. The relevant adjustments are outlined below.

F2.3.1.1 Energy

413. To calculate a suitable adjustment for energy costs for each company within the LB Group we have made two separate calculations for electricity and gas. Where a company declared its use of steam, we have calculated the weighted cost of the two, based on cost, to assign an adjustment value.



414. We have then calculated the proportion of cost each form of energy represents and used this weighting to produce a single energy adjustment for each company. The energy adjustments are as follows:

Exporter	Adjustment
Henan Billions	70.73%
Lufeng	61.81%
LB Group	78.35%
Sichuan	55.34%
Xiangyang	88.29%

Figure 8 Exporter energy adjustments

F2.3.1.2 Land

415. To calculate the cost of land for each exporting company we have first calculated the total expenditure on land acquisition that has been submitted to us and divided this by the area in square meters of that same land. We then divided this by the number of months the land is owned by the company to produce a cost per month.

416. Where the exporter has reported annual costs associated with the land, we have totalled these costs, divided them by the area of land and then divided again by 12 to reach a monthly cost. This cost has then been added to the cost as calculated above. The land adjustments are as follows:

Exporter	Adjustment
Henan Billions	60.77%
Lufeng	74.02%
LB Group	60.57%
Sichuan	46.91%
Xiangyang	80.24%

Figure 9 Exporter land adjustments

F2.3.1.3 Direct and indirect labour

417. The TRA has been provided with sufficiently detailed data by a single exporter. The TRA considers that this enables us to assign a labour adjustment for the entire group, as the exporter is deemed as being representative of the entire LB Group.

418. The nature of the information relied upon, which is directly linked to the exporters confidential data, requires that the value adjustments remain confidential.

F2.3.1.4 Finance

419. In setting the benchmark for finance we have first taken the calculated difference between the PRC and other G20 nations for interest base rate (197%) and we have



multiplied this by the impact of the overstated credit ratings (12%) to calculate a benchmark adjustment of 221%.

420. The PRC rate has been set at 3.03%, the base rate average for the POI and compared to the average rate charged on loans to each company within the POI.
421. Where a company has multiple loans, the interest rate has been weighted based on the principal borrowing. Where a loan's interest rate changes mid POI the rate has been calculated based on a weighting of how many months into the year it was at each rate. The Finance adjustments are therefore:

Exporter	Adjustment
Henan Billions	164.11%
Lufeng	178.16%
LB Group	167.76%
Sichuan	157.88%
Xiangyang	182.34%

Figure 10 Exporter finance adjustments

F2.3.1.5 Raw materials

422. Raw material costs have been provided for all companies, where possible we have applied the general formula set out at the beginning of this section. In some instances, it has not been possible to adjust for exporter level costs due to no per unit input cost having been provided. In these circumstances we have adjusted the cost to make based on the difference in price between benchmark country and the PRC.

Domestically sourced titanium feedstock

423. Different companies within the LB Group have provided the TRA with unit prices for different categories of feedstock.
424. We have compared benchmarks costs for the PRC with a global benchmark and then factored in the provided unit costs where possible. Where no unit cost was provided, the adjustment is based on the global benchmark cost comparison.
425. The TRA has made the following adjustments to domestically sourced titanium feedstock where relevant to each company's reported costs to make per MT of titanium dioxide. Where no adjustment is reported for an individual exporter, the global adjustment has been applied:



Feedstock Type	LB Group Co., Ltd	LB Sichuan	LB Xianyang	Henan Billions	LB Lufeng	Global Adjustment
Sulphate Ilmenite	6.3%	6.1%	6.6%			6.3%
Chloride Slag						5.1%
Chloride Fines						28.7%
Heavy Mineral Concentrate						83.4%
Synthetic Rutile/Calciner Discharge				80.8%	84.9%	65.3%
UGS						22.33%
Sulphate Slag						15.35%

Figure 11 Exporter feedstock adjustments

Sulphuric acid

426. We have received costs for the purchase of sulphuric acid from LB Group and LB Xianyang and have calculated appropriate adjustments to be 3.09% and 4.10% respectively using the aforementioned formula.
427. We have not received costs from Henan Billions and Lufeng, so this cost will be applied the benchmark adjustment rate of 8.2%.
428. LB Sichuan has provided us with the purchase costs of 'sulphur', this is not directly comparable to sulphuric acid, and we do not have a separate purchase price of sulphuric acid provided to us for LB Sichuan. However, in the cost to make annex LB Sichuan have provided costs for sulphuric acid per tonne of finished product, we have therefore applied the benchmark adjustment rate of 8.2% to this cost of sulphuric acid.

Chlorine, caustic soda, coal and iron scrap

429. We have not been provided with any purchase costs per unit for these materials by any exporter within the LB Group of sampled exporters. We therefore have no industry level data from which to make a comparison.
430. The TRA has determined based on available information that these materials are commodity products and globally traded with little distinction between jurisdictions.
431. The TRA considers that adjusting each individual company's specific cost to make, by the difference between the average PRC price and the relevant global benchmark price. This adequately reflects the undistorted costs of the product in the PRC to the circumstances of the individual exporter in the PRC.



432. The adjustment amounts are therefore as follows:

Cost	Adjustment
Chlorine	93.7%
Caustic Soda	4.23%
Coal	36.8%
Iron Scrap	12.1%

Figure 12 Chlorine, caustic soda, coal and iron scrap adjustments

F3. Export price

433. In accordance with regulation 15(1) of the Regulations, the export price is the price the goods concerned are sold for, or the agreed price at which they are to be sold, to either an importer in the UK or a third party outside of the UK for export to the UK.

434. The TRA has determined the export price based on the agreed price at which they were sold to an importer in the UK in accordance with regulation 15(1)(a) of the Regulations.

435. The TRA noted a related intermediary within the LB Group located in Hong Kong, Billions Hong Kong (BHK) and requested relevant information in relation to export price from this Company.

436. The TRA also considered whether regulation 15(2) of the Regulations applied due to the presence of an importer associated to the exporting companies, Billions Europe (BEL).

437. The TRA compared the UK CIF purchase price of all products by the associated importer from the producing exporter and BHK, with the direct sales to independent UK customers made by BHK. We concluded that the difference in sales price between the associated importer and independent customers was immaterial.

438. The TRA therefore deemed that the association did not have an impact on the purchase price of the goods concerned and has therefore determined regulation 15(2) of the Regulations does not apply.

439. Where sales to the UK were not made on a CIF basis the exporter has provided the information required to adjust the relevant transaction to this level.

440. The TRA recognised two distinct routes to the UK market for the goods concerned.

- Direct sales by the producer to the UK.
- Sales routed from the producer to BHK and onto the UK.



F4. Fair comparison

441. To ensure a fair comparison, the normal value and export price must be compared at the same level of trade; normally on an ex-works level and in respect of sales made as near as possible the same time, in accordance with regulation 16(1) of the Regulations.

442. To ensure that export price was at ex-works level in accordance with regulation 16(1), adjustments were made in for:

- Sales from the producer to the UK;
 - International Freight;
 - Domestic Freight;
 - Handling.
- Sales from BHK to the UK
 - Credit
 - The AS&G costs incurred by BHK
 - Costs borne by the producer;
- Domestic Freight;
- Ocean Freight;
- Insurance;
- Taxes.

443. The TRA considered the application of a level of profit to the sales made by BHK, however were satisfied that the sales process followed by the LB Group encompasses the entire process from production to delivery regardless of the route to market. The overall profit is therefore similar whether a sale is made through BHK or direct.

444. The TRA calculated the adjusted producer costs in the BHK transactions on an average per product per MT level and assigned these to individual transactions on a quantity basis. Where costs were provided beyond the transaction costs to increase the export price to CIF levels, these costs were also removed to return the costs to an EXW basis.

445. The TRA has applied the monthly exchange rates as per the HMRC guidance for calculating customs values where relevant.²¹¹

²¹¹ HMRC, UK Government, [Converting foreign currency amounts to include in the customs value - GOV.UK](#), accessed 21 September 2026



446. In accordance with regulation 16(2) of the Regulations the TRA may make adjustments for any differences which affect price comparability including differences relating to:
- conditions and terms of sale
 - taxation
 - levels of trade
 - quantities
 - physical characteristics.
447. The TRA has constructed normal value to determine the dumping amount for all goods concerned, in accordance with regulation 8(1)(a) of the Regulations.
448. To construct normal value at an ex-works level, the TRA has removed the average cost of freight on a quantity basis for each product sold.
449. For sales made by BHK, the TRA has calculated normal value per product for each producer and assigned that as the normal value. Where a product has been sold through BHK by more than one producer the weighted average normal value has been calculated by volume.
450. The TRA considered whether the constructed normal value should be adjusted for level of trade, as the reasonable profit margin could have been influenced by an imbalance in the level of trade. The TRA determined that, were distortions to be removed, the exporters would continue selling under the same level of competition and therefore the average profitability of a like good would remain the same. Therefore, we did not apply a level of trade adjustment to constructed normal value.

F5. Dumping margin

451. In accordance with regulation 17(1)(a) of the Regulations, the TRA compared a weighted average normal value with a weighted average export price to calculate the dumping margin for each overseas exporter.
452. Under regulation 37(2) of the Regulations, where the TRA has limited its examination of overseas exporters in accordance with regulation 56 or 57 of the Regulations, it must determine an anti-dumping amount for non-sampled overseas exporters.
453. In accordance with regulation 37(3), the dumping amount for cooperating non-sampled overseas exporters is calculated as the weighted average of the amounts determined for the overseas exporters in the sample.
454. For all other overseas exporters of the like goods, in accordance with regulation 38 of the Regulations, the TRA determined a residual amount which has been determined by the highest rate calculated for an exporter within the sampled, cooperating LB Group.



455. The dumping margins are:

Overseas exporter/producer	Dumping margin
Cooperating, sampled exporters: Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD.	48.29% <i>ad valorem</i>
Cooperating, non-sampled exporters: Shandong Doguide, Pangang Group, Kunming Donghao, Yibin Tianyuan Haifeng Hetai, Guangdong Huiyun Titanium Industry Corporation, Panzhuhua Darui Technology, Panzhuhua Dongfang Titanium Industry, Ningbo Xinfu Titanium Dioxide, Anhui Gold Star Titanium Dioxide (Group)	48.29% <i>ad valorem</i>
All other overseas exporters (residual amount)	63.66% <i>ad valorem</i>

Figure 13 Dumping margins



Section G: Injury

456. The application for this investigation included claims of injury suffered, and a threat of injury. We have therefore assessed both whether injury has or is occurring, and whether there is a threat of material injury.
457. Injury is the term used when there is evidence of a UK industry being harmed by dumped goods. Paragraph 5 of Schedule 4 to the Act defines 'injury' to a UK industry in particular goods as:
- 1) material injury, or the threat of material injury, to the industry, or
 - 2) material retardation of the establishment of the industry.
458. Under regulation 28(1) of the Regulations, threat of material injury means injury that has not yet occurred but is clearly foreseen and imminent in accordance with regulation 28 of the Regulations.
459. In accordance with regulation 27(2) of the Regulations, as the TRA has determined that goods have been or are being dumped into the United Kingdom, it must determine whether:
- 1) UK industry has suffered or is suffering injury in accordance with regulation 30 of the Regulations (determination of injury); and
 - 2) the dumped goods have caused or are causing that injury to that UK industry.
460. To determine whether a UK industry is suffering or has suffered injury from imports of the goods concerned, in line with regulation 30 of the Regulations, the TRA has examined four factors:
- a) the volume of the dumped goods during the injury period;
 - b) the effect of the imports on prices in the UK market for like goods during the injury period;
 - c) the consequent impact of the dumped goods on UK industry during the injury period;
 - d) any other factors it considers relevant.
461. In order to conduct these assessments, in line with regulation 30 of the Regulations, the TRA has relied upon HMRC COO OTS data for the IP at the 8-digit level for the two 8-digit commodity codes covered by the scope of this investigation. This HMRC COO OTS data includes some goods which are not the goods concerned, for example anatase titanium dioxide. Despite this, the HMRC COO OTS data is the best available data with which to conduct these assessments, as it is the only disclosable data that details the price of imports of the goods concerned over the whole of the IP.
462. To determine whether the dumped goods have caused, are causing or are threatening to cause injury to UK industry, in line with regulation 35 of the Regulations, the TRA has also examined whether any known factors other than the dumped goods



(other known factors) have caused or are causing injury to a UK industry. The TRA considered the following factors:

- 1) Domestic demand for rutile titanium dioxide
- 2) Volume of imports
- 3) Price Effects
- 4) Rising costs
- 5) Weak export performance
- 6) Vertically integrated structure
- 7) Force majeure incident
- 8) Adjustment to Stallingborough plant
- 9) Venator administration
- 10) Lack of threat

G1. Injury Analysis

G1.1 Volume of dumped goods

463. In accordance with regulations 30(2)(a) and 31 of the Regulations, when determining whether the UK Industry is suffering injury, the TRA has considered where there has been a significant increase in the dumped goods in the UK either in absolute terms (the volume of dumped goods being imported into the UK market) or relative to domestic production or consumption.

G1.1.1 Volume of dumped goods in absolute terms

464. The TRA has examined the HMRC COO OTS data under the two relevant 8-digit commodity codes (28 23 00 00 and 32 06 11 00).

465. HMRC COO OTS data are the best information available to the TRA to assess volumes of imports from the PRC, as only LB Group companies have provided exporter questionnaire responses, and those responses do not account for all exports of the goods concerned from the PRC, nor do they contain sales data for the full IP. We note that not all of the goods imported under these commodity codes from the PRC are the goods concerned, as at an 8-digit level these codes contain out of scope goods (for example, anatase goods or goods with a titanium dioxide content of below 80%). As set out above, at [Section F1](#), we have assessed that 86.9% to 93% of imports under these commodity codes from the PRC are the goods concerned.

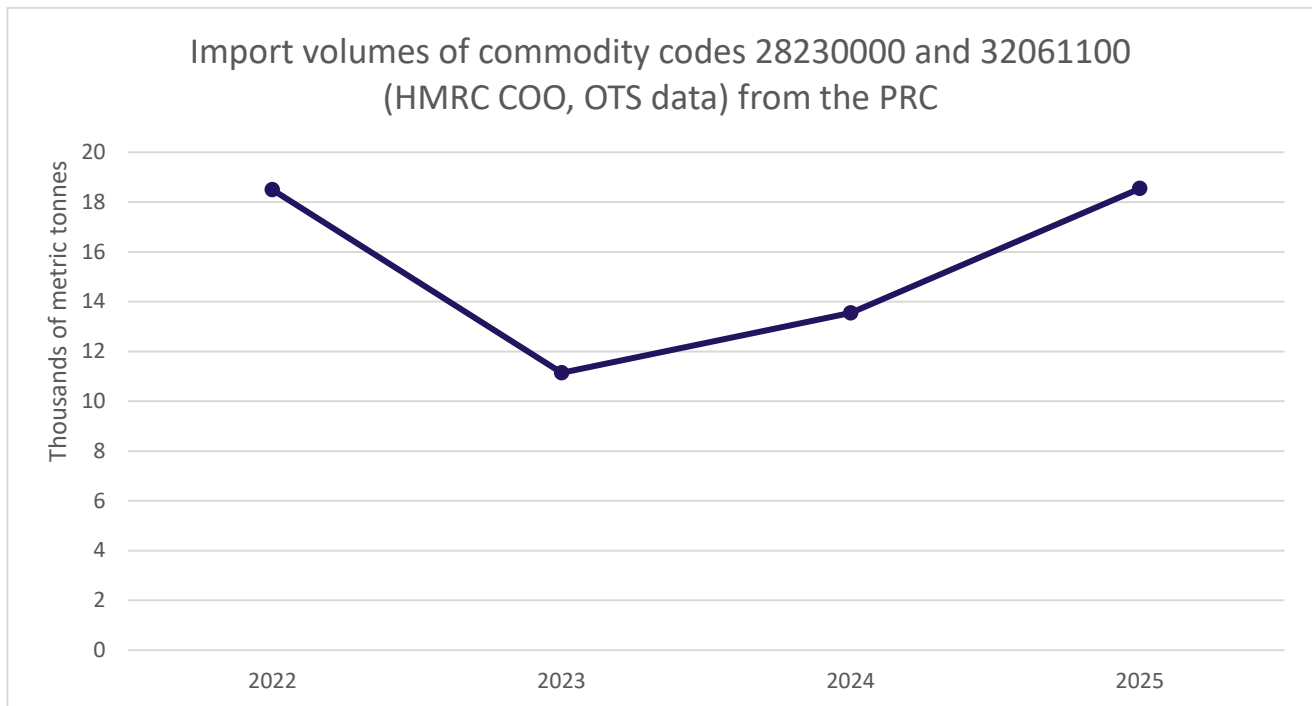


Figure 14 Import volumes of commodity codes 28230000 and 32061100 (HMRC COO OTS data) from the PRC²¹²

466. The HMRC COO OTS data covers the IP and does not show an increase in the volume of dumped goods in absolute terms. The applicant alleges that an increase in imports is evident upon an examination of longer-term trends.²¹³ The applicant has made submissions requesting that 2023 be used as the base year for import analysis,²¹⁴ whereas the CNCIA have requested 2022.²¹⁵ The TRA has chosen to look at longer term data, from prior to the IP, in order to understand the context of the IP data for this assessment. The HMRC COO OTS data used in this analysis is only published from 2016, and so we have examined imports of the goods concerned from that period to the end of the POI.

²¹² HMRC, UK Trade Info, Data Dictionary, <https://www.uktradeinfo.com/trade-data/latest-bulk-data-sets/bulk-data-set-data-dictionary>, accessed 7 September 2026

²¹³ Tronox, Application, [Application SD-0000062066-B1Z2.pdf](#), pages 49-50, accessed 7 September 2026

²¹⁴ Tronox, Application, [Application SD-0000062066-B1Z2.pdf](#), pages 49-50, accessed 7 September 2026

²¹⁵ CNCIA, Comments on the Application and Initiation of investigation, [General-publication---Submission-\(from-an-interested-party\) SD-0000067067-Y7D0.pdf](#), page 3, accessed 7 September 2026

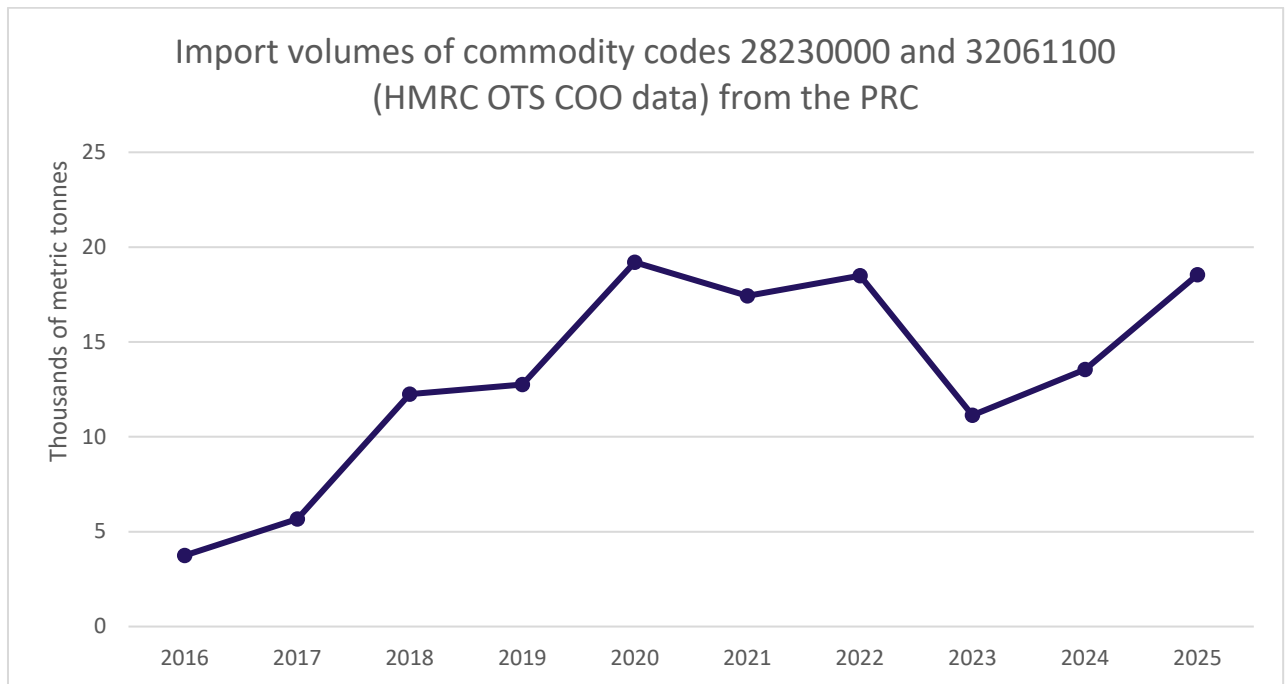


Figure 15 Import volumes of commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC²¹⁶

467. The TRA notes that this data shows that there is a longer-term trend of increasing import volumes from the PRC classified under commodity codes 28 23 00 00 and 32 06 11 00. Despite this, during the IP, there was no significant increase in imports of the dumped goods.

²¹⁶ HMRC, UK Trade Info, Data Dictionary, <https://www.uktradeinfo.com/trade-data/latest-bulk-data-sets/bulk-data-set-data-dictionary>, accessed 7 September 2026



G1.1.2 Volume of dumped goods relative to domestic production

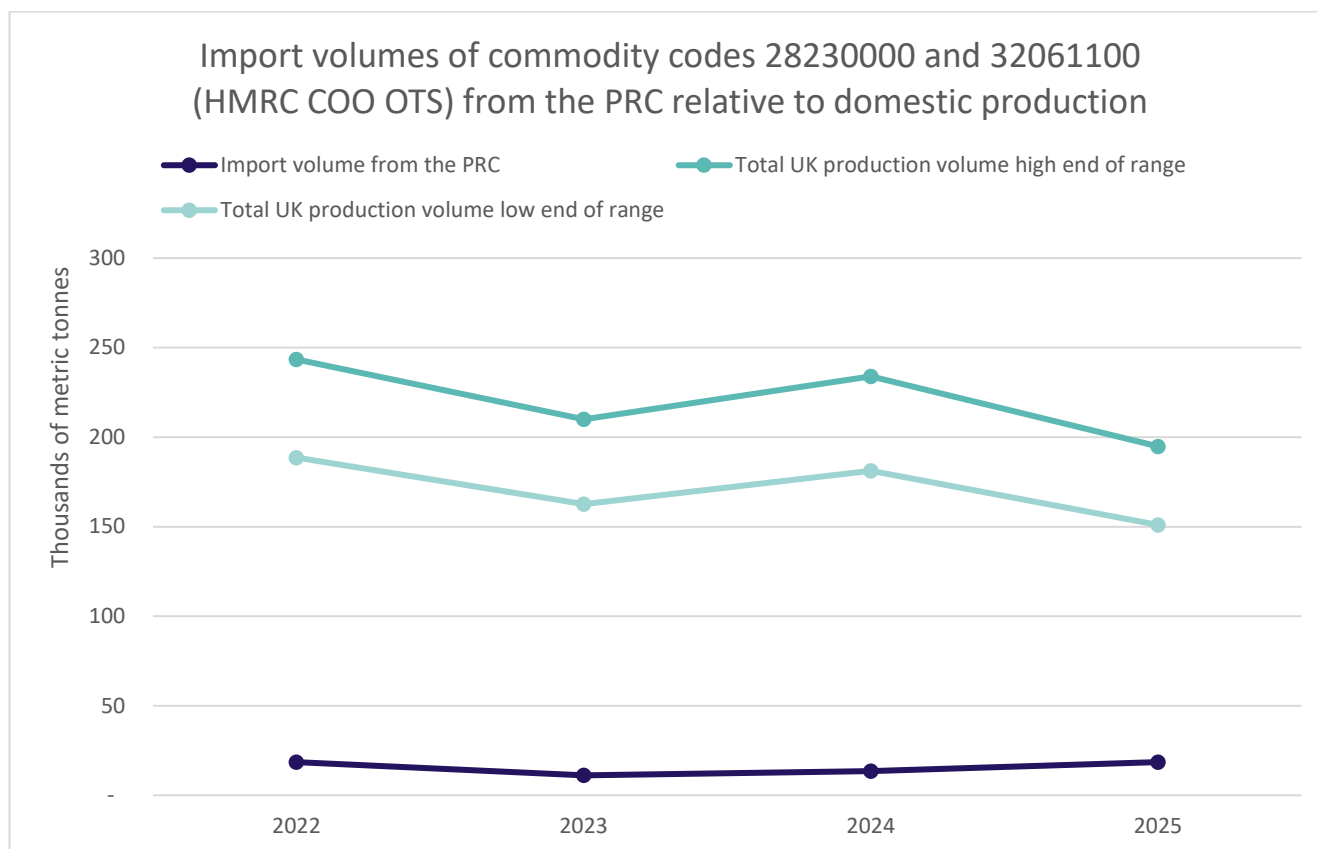


Figure 16 Import volumes of commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC relative to domestic production²¹⁷

468. The TRA has received domestic production volumes from the applicant's questionnaire response and has an estimated domestic production volume for Venator for one year submitted as part of the application. This estimated production volume for Venator has been extended, with adjustments based on Venator's costs of goods sold in accounts filed with Companies House, to account for Venator's financial circumstances and entry into administration during the POI (2025).
469. The TRA has conducted a comparison of the volume of dumped goods relative to domestic production, this comparison shows that domestic production declined over the IP, from a high of over 230 thousand MT, to under 200 thousand MT in the final year of the IP (the POI). The volume of dumped goods over the IP is less than 10% of the estimated domestic production volumes for UK industry, starting and finishing at similar volumes with a dip in 2023 and 2024.
470. The TRA notes that trade data show,²¹⁸ at the 8-digit level, that annual exports of titanium dioxide dispatched from the UK over the IP are between 130 thousand and 180

²¹⁷ HMRC, UK Trade Info, Data Dictionary, <https://www.uktradeinfo.com/trade-data/latest-bulk-data-sets/bulk-data-set-data-dictionary>, accessed 7 September 2026

²¹⁸ HMRC, UK Trade Info, Build an Overseas Trade Data Table, <https://www.uktradeinfo.com/trade-data/ots-custom-table/?id=981a2071-24f6-40f1-a62e-21a4da736b93>, accessed 7 September 2026



thousand MT. Stocks data (see below, [G1.3.11 Actual and potential negative effect on inventories](#)) shows that UK industry stocks have increased over the IP. These exports and stocks have assisted UK industry in maintaining production volumes.

471. The TRA has concluded that there is no significant increase in imports relative to domestic production volumes over the IP.

G1.1.3 Volume of dumped goods relative to domestic consumption

472. Domestic consumption volumes were submitted in the application from the applicant.²¹⁹

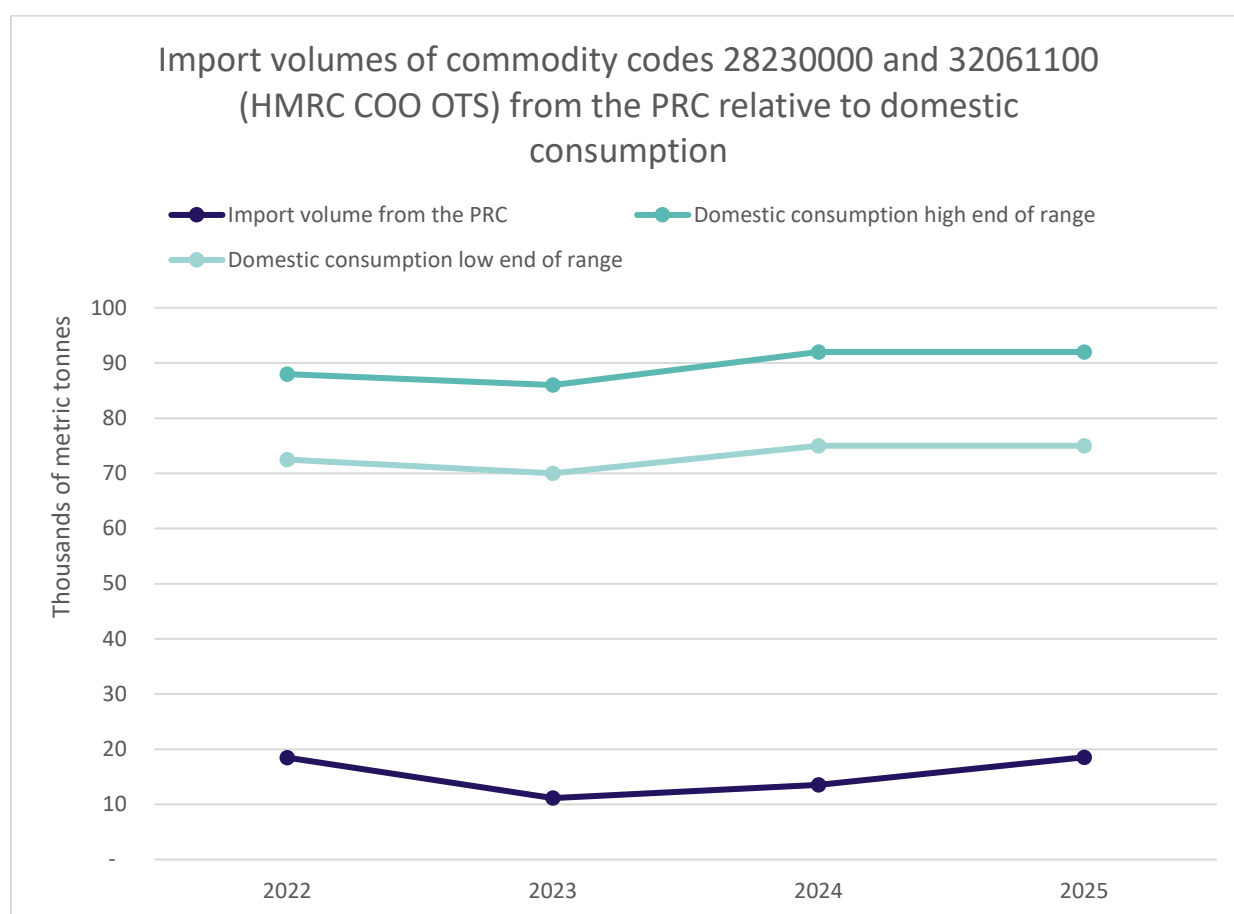


Figure 17 Import volumes of commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC relative to UK domestic consumption²²⁰

473. A comparison of domestic consumption to imports of the dumped goods shows that imports of the dumped goods have generally tracked trends in domestic consumption, except for in the final year of the IP when imports of the dumped goods have increased and domestic consumption has remained relatively stable.

²¹⁹ Tronox, Application, [Application SD-0000062066-B1Z2.pdf](#), page 48, accessed 7 September 2026

²²⁰ HMRC, UK Trade Info, Data Dictionary, <https://www.uktradeinfo.com/trade-data/latest-bulk-data-sets/bulk-data-set-data-dictionary>, accessed 7 September 2026 <https://www.uktradeinfo.com/trade-data/latest-bulk-data-sets/bulk-data-set-data-dictionary>



474. Despite flat consumption volumes towards the end of the IP, and slightly increased imports of the dumped goods from 2023 onwards, the TRA has concluded that there is no significant increase in import volumes of the dumped goods relative to UK consumption.

G1.2. Effect of dumped goods concerned on prices

475. In accordance with regulations 30(2)(b) and 32 of the Regulations, to assess the effect of the dumped goods on prices of the like goods in the UK during the injury period, the TRA has considered whether:

- 1) there has been significant price undercutting by the dumped goods as compared with the price of the like goods produced in the UK; or
- 2) the dumped goods have depressed or suppressed domestic prices of the like goods produced in the UK to a significant degree.

476. The TRA has assessed that the goods concerned are comparable to the like goods produced and sold in the UK, as both sets of goods are manufactured and sold to the same standards, using equivalent or the same production processes, for the same uses, by the same customers, in the same markets.

G1.2.1. Price undercutting

477. Price undercutting is where the imported goods are consistently sold at a price below that of the like goods in the UK.

478. An undercutting margin is calculated by comparing the UK sales price (ex-factory) with the import price (the landed price) for similar products during the POI. The landed price is the price of the goods concerned when they arrive at a UK port. It equates to the CIF import price plus any relevant import duties and other costs associated with importing.

479. An undercutting margin (%) reflects the extent to which landed prices of the imported goods concerned are lower than the UK sales prices of the like goods. The undercutting margin, which is the undercutting amount as a percentage of the landed price of the goods concerned for the POI, is 46.43%. This demonstrates that there has been significant price undercutting by the dumped goods in comparison with the price of the like goods produced and sold in the UK, by UK industry.

480. *Figure 18 Average price of imports under commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC compared to average sales prices of UK like goods, below, shows that the undercutting of UK manufactured like goods by the goods concerned has been taking place for the majority of the IP. For the last three years of the IP (2023 to 2025), import prices of the two relevant commodity codes from the PRC are lower than the range of sales prices of UK manufactured like goods. For the first year of the IP, import prices of the two commodity codes from the PRC are above the*



lower end of the range of sales prices of UK manufactured like goods, but are significantly below the middle and upper end of this range.

G1.2.2. Price depression

481. Price depression occurs when the UK industry is forced to reduce its prices to compete against lower priced dumped goods.
482. The TRA compared the average domestic price of the UK industry like goods to the average import price of the goods concerned from the PRC to establish whether there was price depression during the IP.

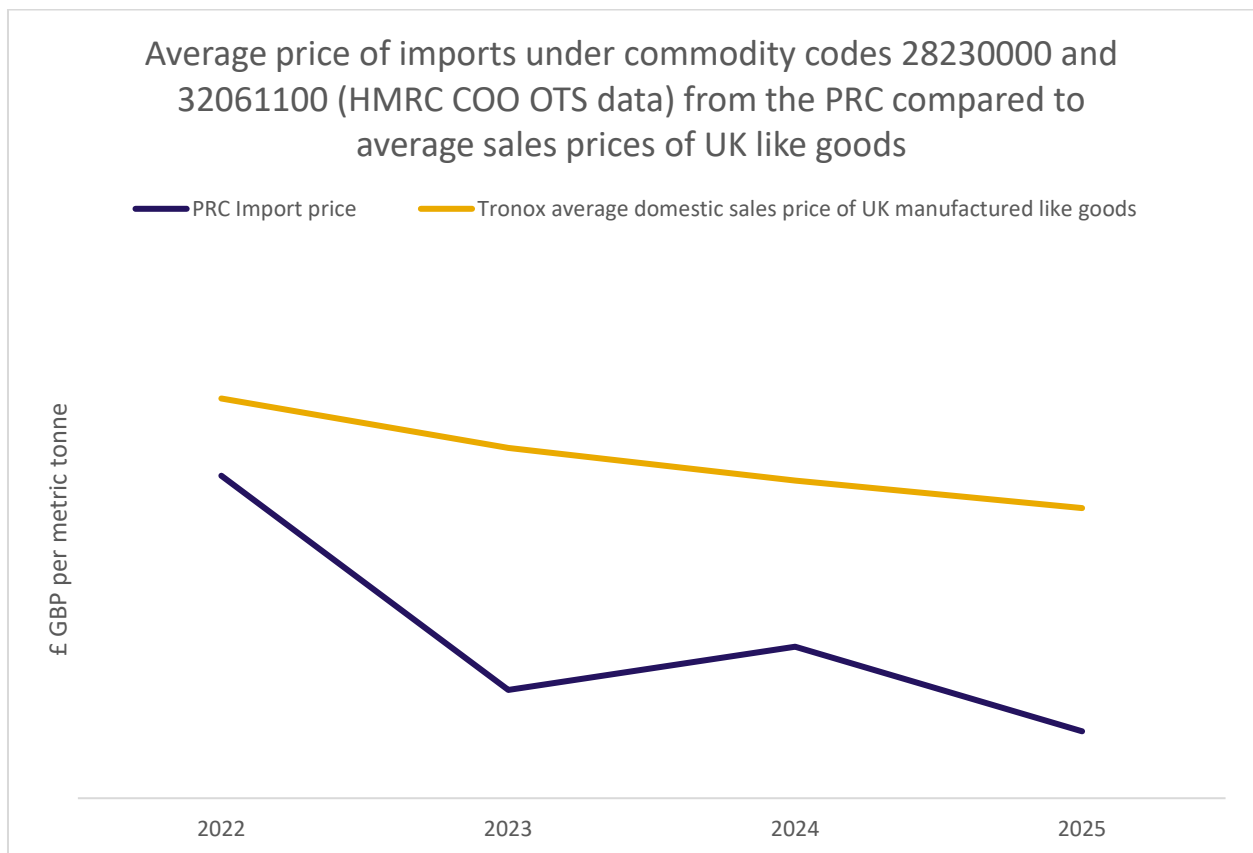


Figure 18 Average price of imports under commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC compared to average sales prices of UK like goods

483. This assessment shows that the import prices of the dumped goods were consistently below the sales prices of UK manufactured like goods, for the whole of the IP.
484. The sales prices of like goods manufactured by UK industry reduced in every year of the IP. Whilst the cost of manufacturing these goods also decreased (see *Figure 19 Average price of imports under commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC compared to UK like goods average cost to make and sell*), at no point during the IP were the sales of UK manufactured like goods profitable for the applicant (see *Figure 20 Index of NOPAT for the applicant's like goods*).



485. Finally, the prices of imports of titanium dioxide categorised under commodity codes 2823 0000 and 3206 1100 originating from third countries were 50% to 60% higher than the prices of those originating in the PRC, during the POI.

486. The lack of profitability of the applicant, and the low price of imports from the PRC compared to third country imports, demonstrate that it is the imports of the goods concerned that are causing the reduction in domestic sales prices of UK manufactured like goods. The TRA has therefore concluded that the dumped goods have depressed domestic prices of the like goods produced in the UK to a significant degree.

G1.2.3. Price suppression

487. Price suppression occurs where price increases for the like goods, which otherwise would have occurred, have been prevented to a significant degree due to the price of the goods concerned.

488. To assess whether there was any evidence of price suppression, the TRA examined changes to domestic sales prices and changes to the cost of production for the like goods produced in the UK during the IP.

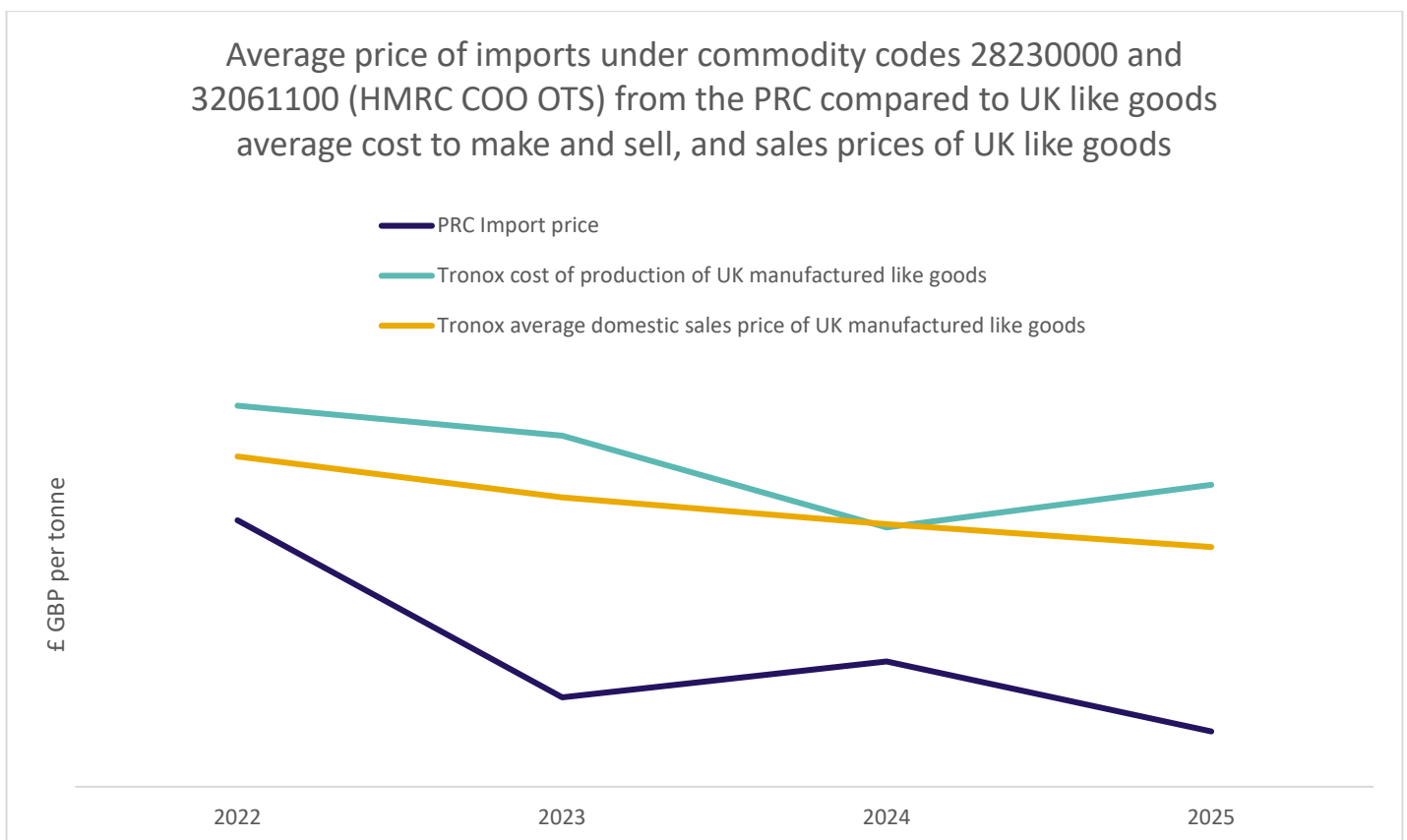


Figure 19 Average price of imports under commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC compared to UK like goods average cost to make and sell, and sales prices of UK like goods

489. A comparison between import prices of the dumped goods and UK industry costs to manufacture like goods and sales prices over the IP shows that the average import price of the goods concerned has consistently been lower than the cost to make and sell for,



and the sales prices of, UK industry. As stated above, in [G1.2.2. Price depression](#), import prices of titanium dioxide from the PRC are significantly lower than those from third countries, and so it is not third country import prices that are suppressing the sales prices of UK like goods.

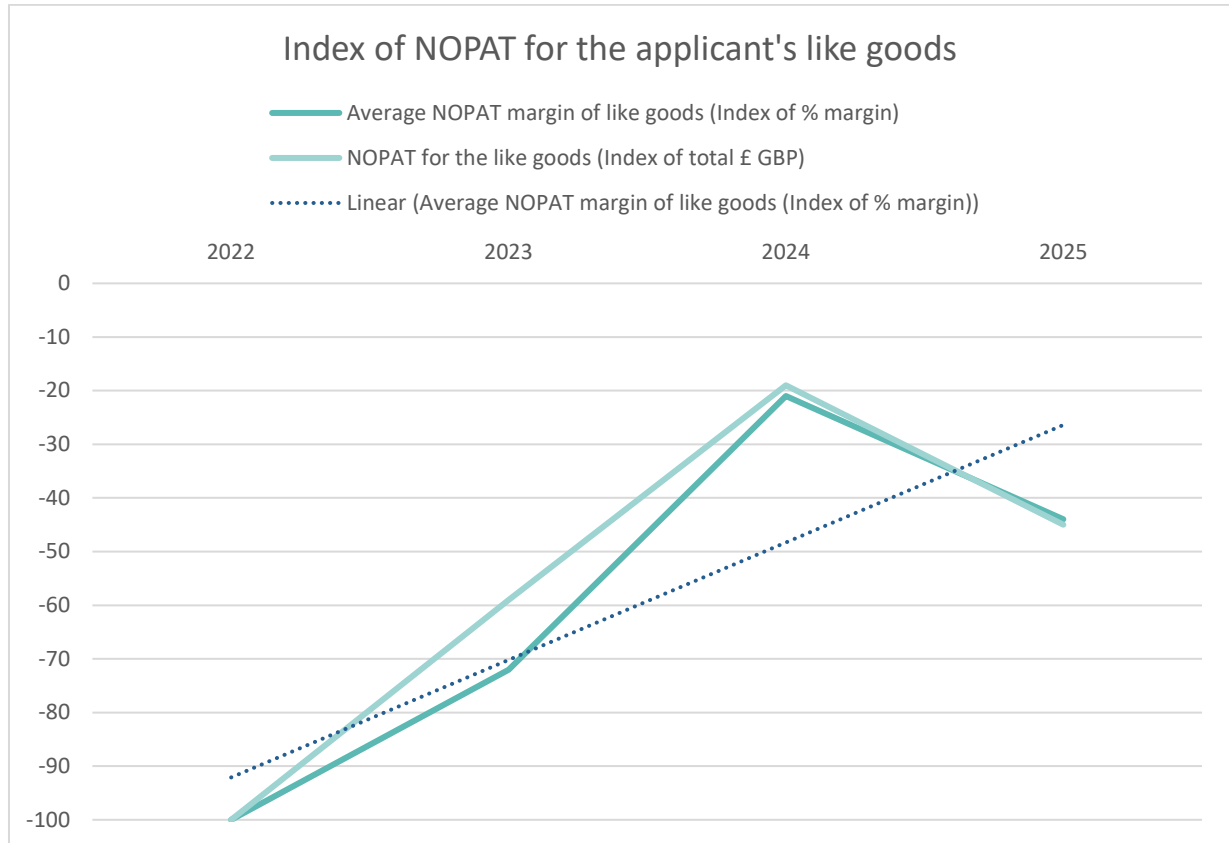


Figure 20 Index of NOPAT for the applicant's like goods

490. The data that UK industry submitted as part of the applicant's questionnaire response shows that they have been unable to make a profit for the whole of the IP. UK industry losses have reduced over the first three years of the IP (2022 to 2024) as its costs were reduced (see *Figure 19 Average price of imports under commodity codes 28230000 and 32061100 (HMRC OTS COO data) from the PRC compared to UK like goods average cost to make and sell, and sales prices of UK like goods*). Nevertheless, UK industry has not been able to make a profit on sales of the like goods over the IP, and whilst losses have reduced over the whole of the IP, they do increase into the final year of the IP from 2024 to 2025.

491. The TRA has therefore determined that the dumped goods have suppressed domestic sales prices of the like goods produced in the UK to a significant degree.



G1.3. Impact of dumped goods concerned on UK industry during the IP

492. In considering, for the purpose of regulations 30(2)(c) and 33 of the Regulations, the impact of the dumped goods on the UK industry, the TRA must take into account all relevant economic factors and indices having a bearing on the UK industry including:

- 1) actual and potential decline in sales, profits, output, market share, productivity, return on investments, and utilisation of capacity;
- 2) factors affecting domestic prices of the like goods;
- 3) the magnitude of the margin of dumping; actual and potential negative effects on cash flow, inventories, employment, wages, growth, the ability to raise capital or investments.

G1.3.1 Actual and potential decline in sales

493. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential decline in sales.

494. The TRA has assessed the actual and potential decline in sales on a sector basis and therefore we have used the applicant and Venator's data (from public sources) for the assessment. This assessment is set out in the following figures and accompanying analysis.

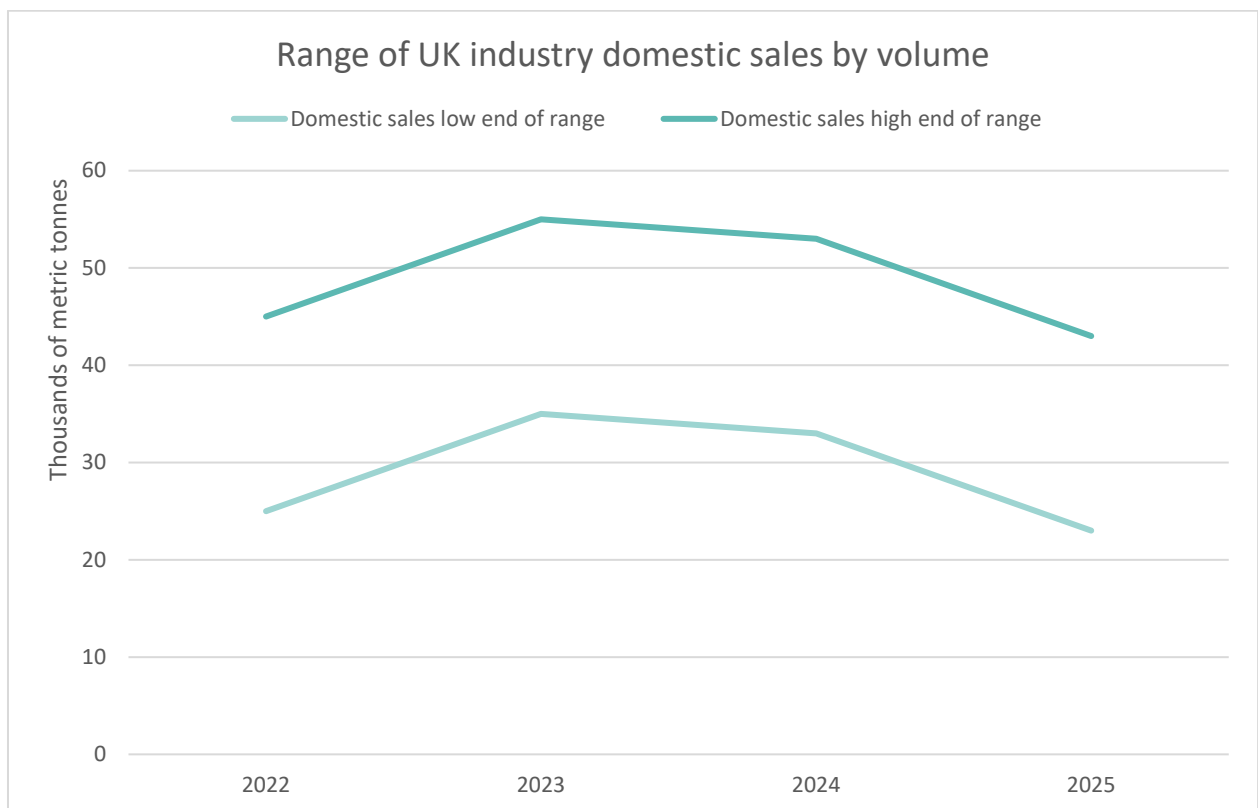


Figure 21 Range of UK industry domestic sales by volume

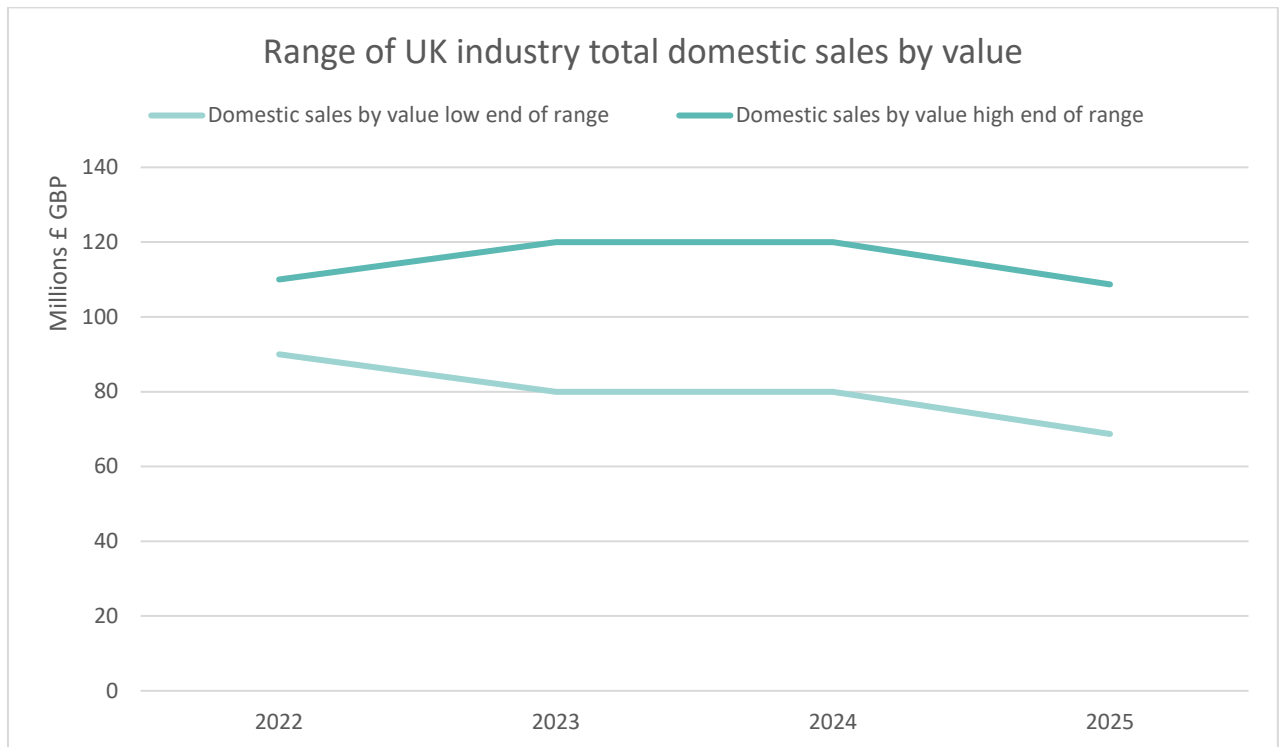


Figure 22 Range of UK industry total domestic sales by value

495. *Figure 21 Range of UK industry domestic sales by volume and Figure 22 Range of UK industry total domestic sales by value*, above, show the range for the volume and value of domestic sales. The trends displayed in the ranges are consistent with the confidential data submitted to the TRA. Over the duration of the IP, there is an initial increase followed by a decrease of domestic sales by volume and value. In the final year of the IP (2025) there was a decline in domestic sales by volume and value when compared to the preceding years. The confidential data shows that both total volume and total value of sales by UK industry were lower in the final year of the IP than any other year in the IP.

G1.3.2 Actual and potential decline in profits

496. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential decline in profits.

497. The TRA has assessed the actual and potential decline in profits on a firm basis and therefore we have used the applicant's data for the assessment. The data for this assessment is set out at *Figure 20 Index of NOPAT for the applicant's like goods*, above.

498. The applicant was unable to make a profit on sales of the like goods and recorded negative profit figures throughout the whole of the IP. Whilst these losses reduce from 2022 to 2024, *Figure 19 Average price of imports under commodity codes 28230000*



and 32061100 (HMRC OTS COO data) from the PRC compared to UK like goods average cost to make and sell, above, records a reduction in the applicant's costs to make and sell during that same time period, which will have contributed to decreased losses. In the final year of the IP (2025, the POI) the applicant's losses again increased.

G1.3.3 Actual and potential decline in output

499. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential decline in output.

500. The TRA has assessed the actual and potential decline in output on a sector basis and therefore we have used the applicant and Venator's data (from public sources) for the assessment. This assessment is set out in the following figure and accompanying analysis.

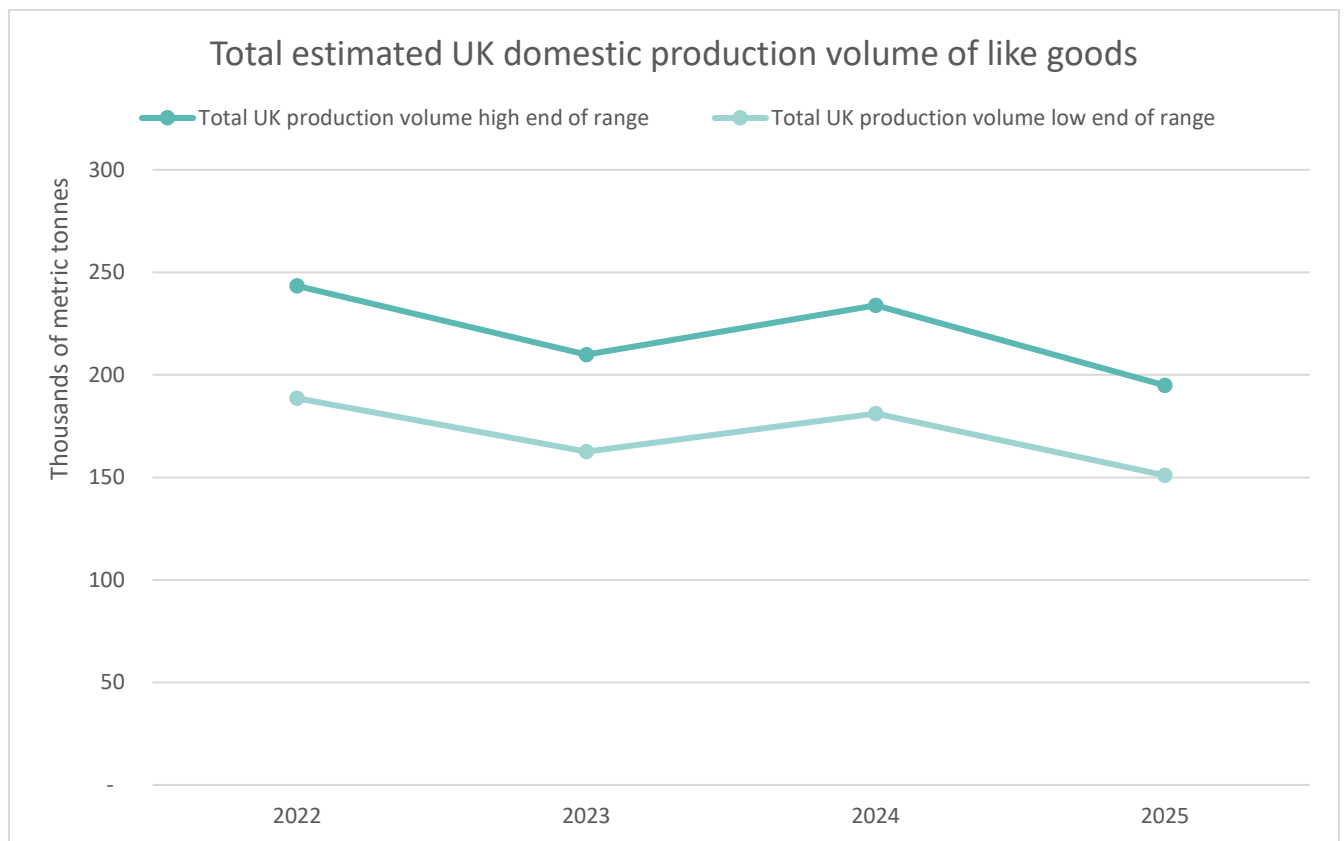


Figure 23 Total estimated UK domestic production volume of like goods²²¹

501. There was an increase in the output of UK industry between 2023 and 2024. For every other year of the IP, there has been a decrease in the output of UK industry. There is a general decline in the output of UK industry over the whole of the IP, and output in the final year of the IP (2025, the POI) is lower than it is in the first year of the IP (2022). The largest decrease in output over the IP is in the final year of the IP from 2024 to 2025.

²²¹ Application for investigation with adjustments applied



G1.3.4 Actual and potential decline in market share

502. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential decline in market share.

503. The TRA has assessed the actual and potential decline in market share on a sector basis and therefore we have used the applicant and Venator's data (from public sources) for the assessment. This assessment is set out in the following figure and accompanying analysis.

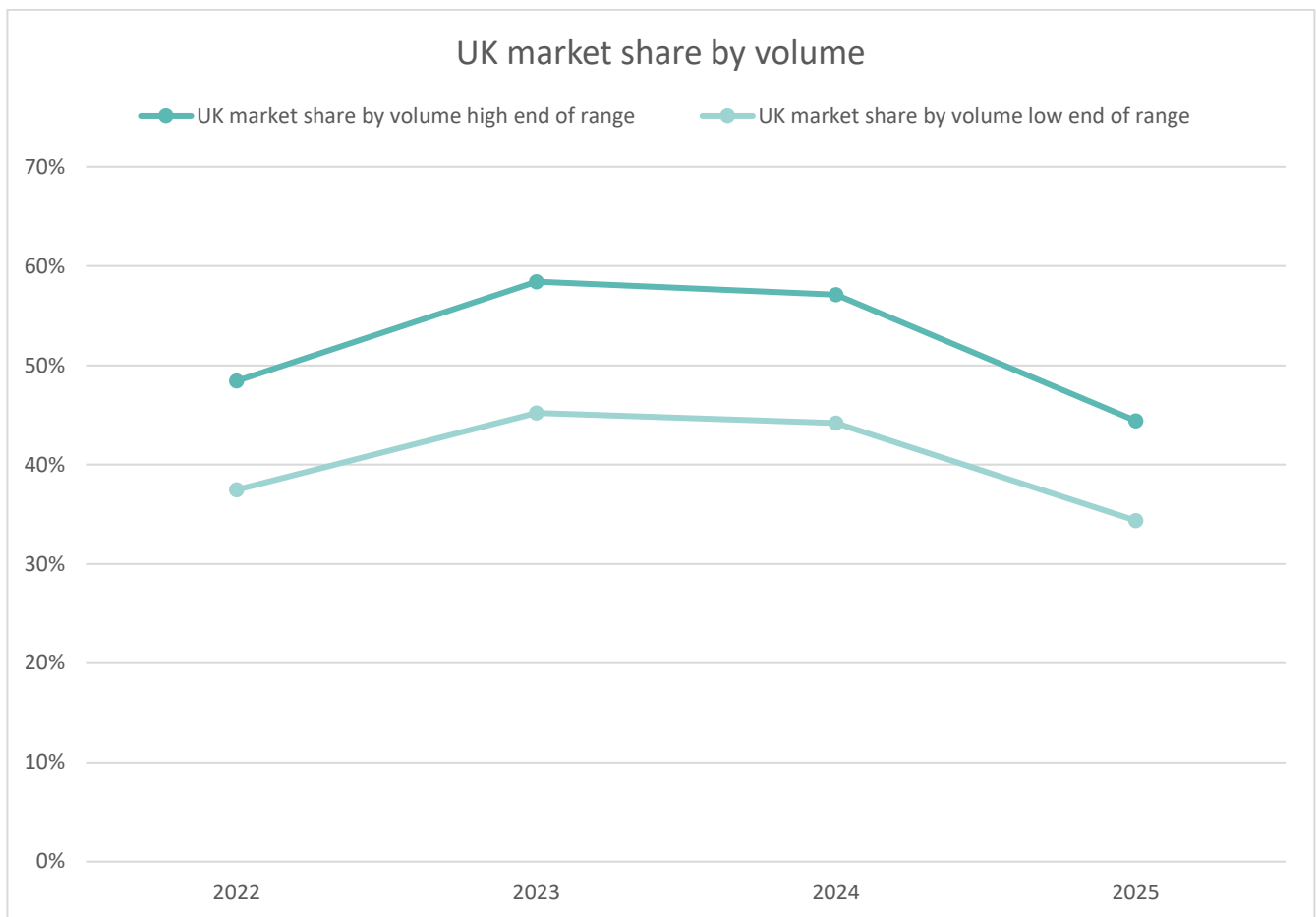


Figure 24 UK market share by volume²²²

504. The market share of UK industry increased from the first to the second year of the IP by 9%, and has decreased since the second year of the IP to the final year of the IP. The most significant decrease is into the final year of the IP where the market share of UK industry fell by 11%. In the last year of the IP, the market share of UK industry was lower than it was in the first year of the IP by 3.5%.

²²² Application and HMRC OTS COO data, with additional adjustments applied



G1.3.5 Actual and potential decline in productivity

505. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential decline in productivity.
506. The TRA has assessed the actual and potential decline in productivity on a sector basis and therefore we have used the applicant and Venator's data (from public sources) for the assessment. This assessment is set out in the following figure and accompanying analysis.

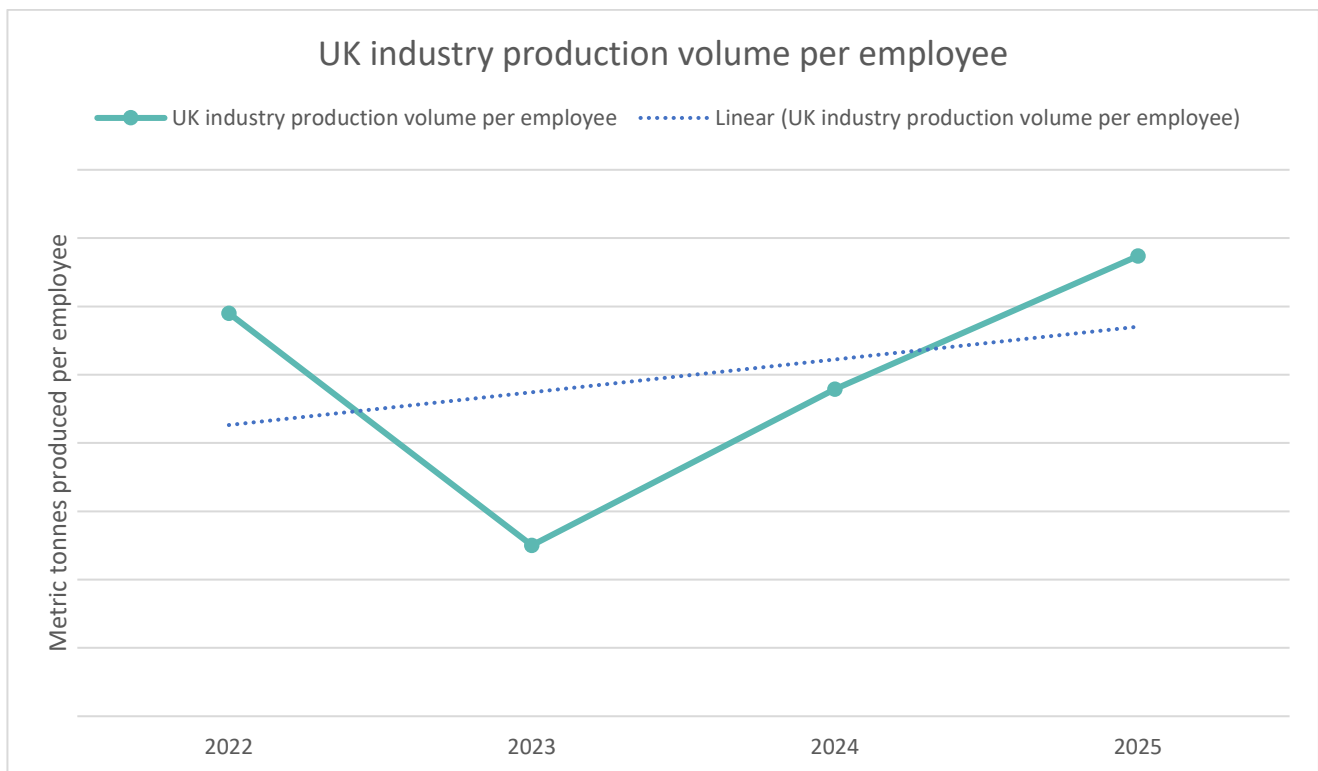


Figure 25 UK industry metric tonnes produced per employee^{223, 224}

507. The productivity of UK industry decreased from the first to the second year of the IP and has increased since the second year of the IP to the final year of the IP. In the last year of the IP, the productivity of UK industry was higher than it was in the first year of the IP. The TRA notes that these productivity numbers are affected by Venator entering into administration in the POI, as just over half of the workforce were made redundant.
508. These productivity figures are affected by limited access to employment information for UK industry. The figures used in this calculation are for production staff only for the applicant, whereas for Venator they are estimates of total number of employees in the UK, which would include production, sales and management staff.

²²³ Tronox questionnaire annex and secondary sources

²²⁴ [Jobs lost as chemical firm awaits Greatham plant sale - BBC News](#), accessed 7 September 2026



G1.3.6 Actual and potential decline in return on investments

509. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential decline in return on investment.
510. The TRA has assessed the actual and potential decline in return on investments output on a firm basis and therefore we have used the applicant's data for the assessment.
511. The applicant was unable to make a return on investments in relation to the like goods and recorded negative returns on investments throughout the whole of the IP. In the first three years of the IP, the applicant's returns on investments increased in comparison to previous years, whilst remaining negative. In the final year of the IP (2025, the POI) the applicant's returns on investments again decreased. At the end of the IP, the applicant had decreased its investment losses when compared to the first year of the IP.

G1.3.7 Actual and potential decline on utilisation of capacity

512. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential decline in utilisation of capacity.
513. The TRA has assessed the actual and potential decline on utilisation of capacity on a sector basis and therefore we have used the applicant and Venator's data (from public sources) for the assessment. This assessment is set out in the following figure and accompanying analysis.

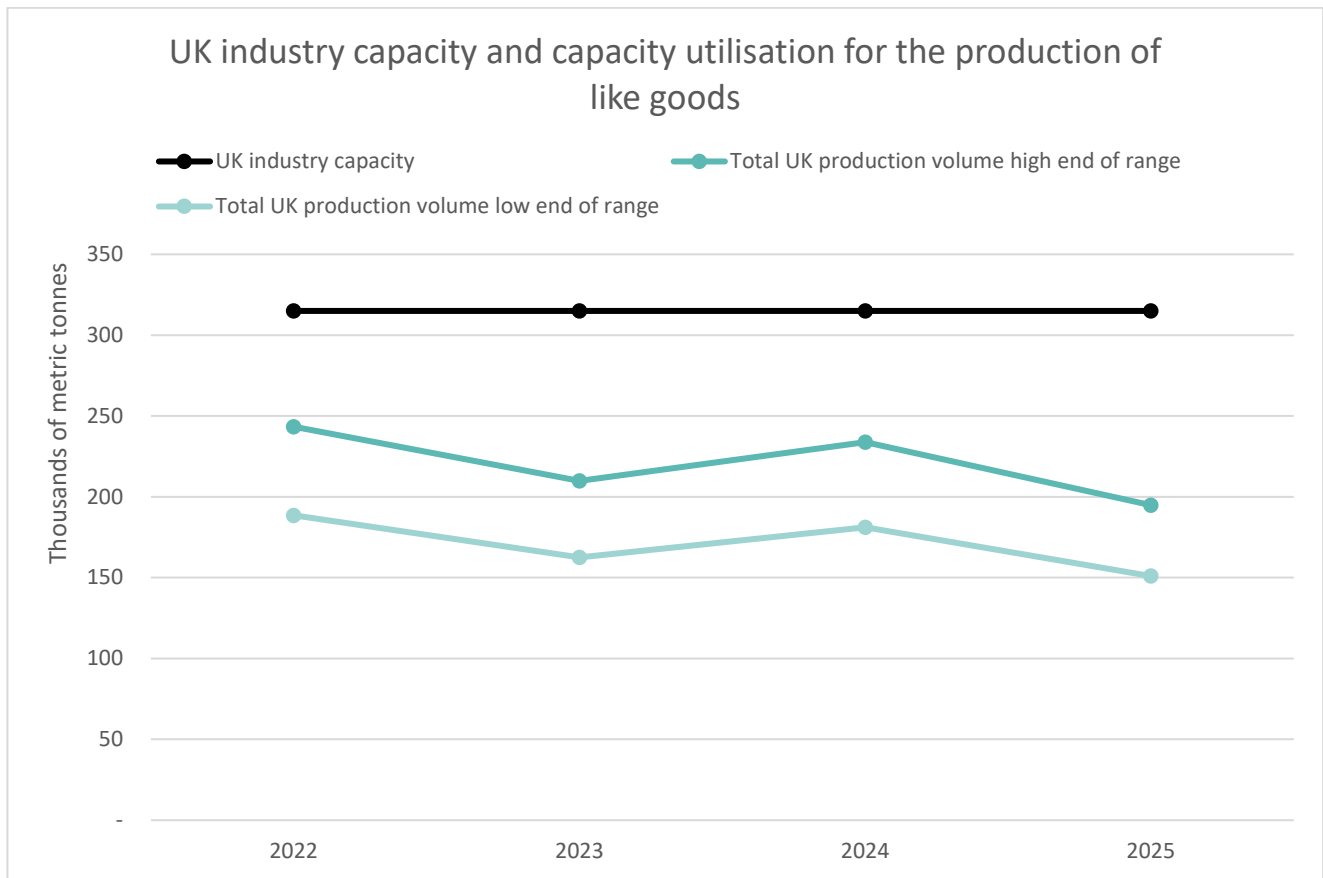


Figure 26 UK industry capacity and capacity utilisation for the production of like goods

514. Throughout the IP, the capacity to manufacture like goods in the UK consists of the manufacturing capacities of the applicant and Venator. The applicant have a manufacturing capacity of 165,000 MT,²²⁵ and Venator had a manufacturing capacity of 150,000 MT,²²⁶ resulting in a total UK manufacturing capacity for the like goods of 315,000 MT.
515. The capacity utilisation of UK industry decreased from the first to the second year of the IP, increased from the second to the third year of the IP and then decreased into the final year of the IP. In the last year of the IP, the capacity utilisation of UK industry was lower than it was in the first year of the IP.
516. The TRA notes that, whilst the plant previously operated by Venator still existed as UK manufacturing capacity for like goods, it was not operational at the end of the IP.²²⁷ Venator's UK production facility has since been purchased by LB Group (who operate

²²⁵ Tronox, Application, [Application_SD-0000062066-B1Z2.pdf](#), page 53, accessed 7 September 2026

²²⁶ [What is next for Greatham - the 'jewel in the crown' of Venator? - European Coatings](#), accessed 8 September 2026

²²⁷ Venator, Media Centre, [Venator Materials UK Ltd agrees sale of Greatham site and associated TiO₂ assets to LB Group – Venator](#), accessed 7 September 2026



the registered exporters to this investigation), they have restarted production in August 2026, as a new company, Tioxide Materials Ltd.^{228, 229}

G1.3.8 Factors affecting the domestic prices of like goods

517. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account factors affecting domestic prices of the like goods.

518. The TRA has assessed factors affecting the domestic prices of like goods on a firm basis and therefore we have used the applicant's data for the assessment. This assessment is set out in the following figure and accompanying analysis.

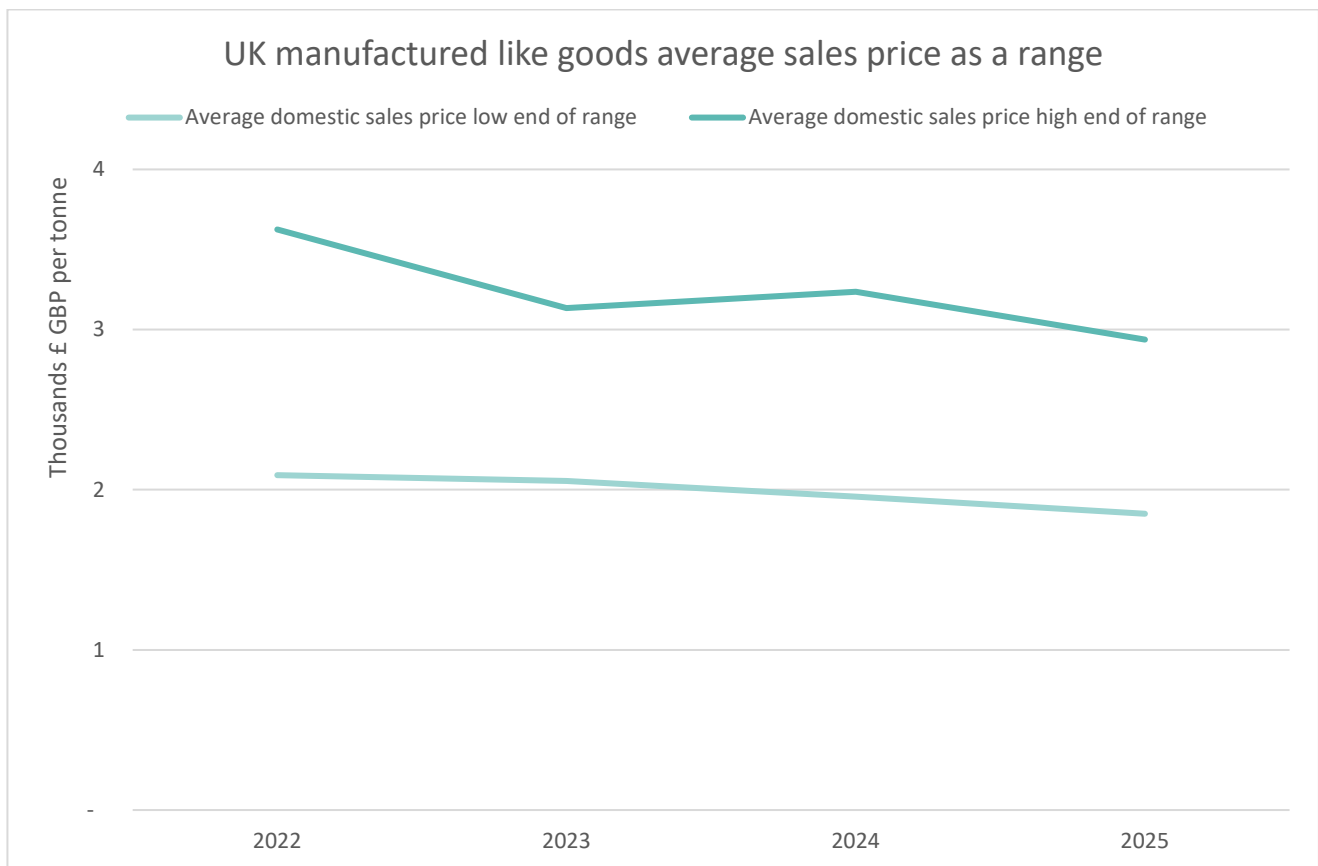


Figure 27 UK like goods average sales price as a range

519. The average sales prices of the applicant have been redacted from its questionnaire response as they are commercially sensitive. The TRA has ensured that the ranges provided by the applicant reflect the trends that are present in the confidential data. The average sales price of like goods sold by the applicant decreased every year in the IP. In the last year of the IP, the average sales price of the applicant for like goods was lower than it was in the first year of the IP by 10% to 15%.

²²⁸ Companies House, [TIOXIDE MATERIALS LTD overview - Find and update company information - GOV.UK](#), accessed 4 September 2026

²²⁹ Tioxide, [Tioxide restarts TiO₂ plant in UK - heralding new era for pigment production at historic Greatham site - Tioxide](#), accessed 7 September 2026



G1.3.9 The magnitude of the margin of dumping

520. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account the magnitude of the margin of dumping on a sector basis and therefore used the applicant and Venator's data (from public sources) for the assessment.

521. The dumping margin of the goods concerned has been calculated on the basis of questionnaire responses provided by the LB Group of exporters, who were the cooperating parties in the sampled exporters (see [Section F: Dumping](#)), with sales transactions from the POI. This cooperating dumping margin is 48.29%, with a residual rate for all other exporters of 63.66%.

G1.3.10 Actual and potential negative effect on cash flow

522. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential negative effect on cash flow.

523. The TRA has assessed the actual and potential decline on cash flow on a firm basis and therefore we have used the applicant's data for the assessment. This assessment is set out in the following figure and accompanying analysis.

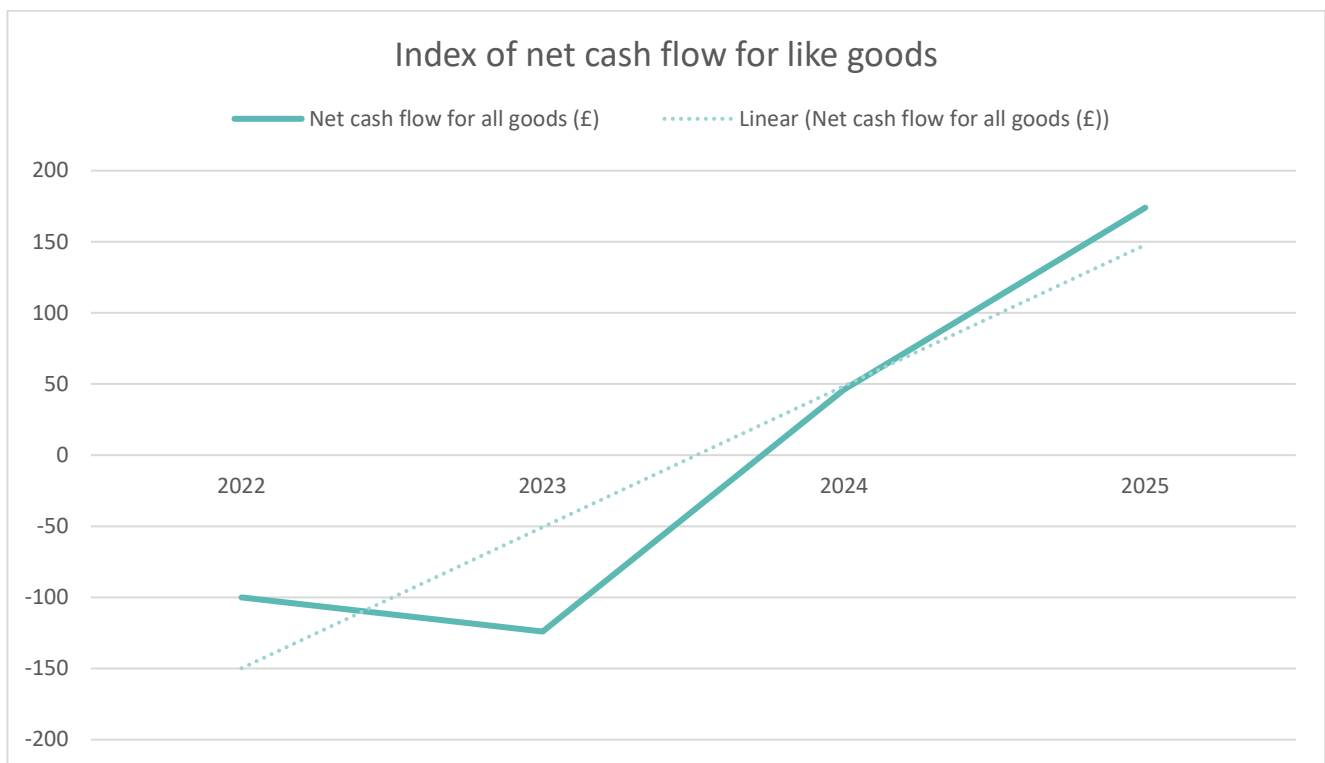


Figure 28 Index of net cash flow for like goods

524. The net cash flow for like goods of the applicant decreased from the first to the second year of the IP, and has increased since the second year of the IP to the final year of the IP. In the last year of the IP, the net cash flow of the applicant's like goods



was higher than it was in the first year of the IP, and it moves from negative to positive throughout the IP. The TRA notes that net cash flow may be affected by the fact that the applicant is part of a wider, vertically integrated, group of titanium dioxide producers.

G1.3.11 Actual and potential negative effect on inventories

525. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential negative effect on inventories.
526. The TRA has assessed the actual and potential negative effect on inventories on a firm basis and therefore we have used the applicant's data for the assessment. This assessment is set out in the following figures and accompanying analysis.
527. The TRA has assessed inventories through stock data. This is because, in this investigation, stock is the most relevant aspect of inventories with which to assess economic injury. The inventories of the applicant can be examined through its questionnaire responses in relation to stock, set out below.

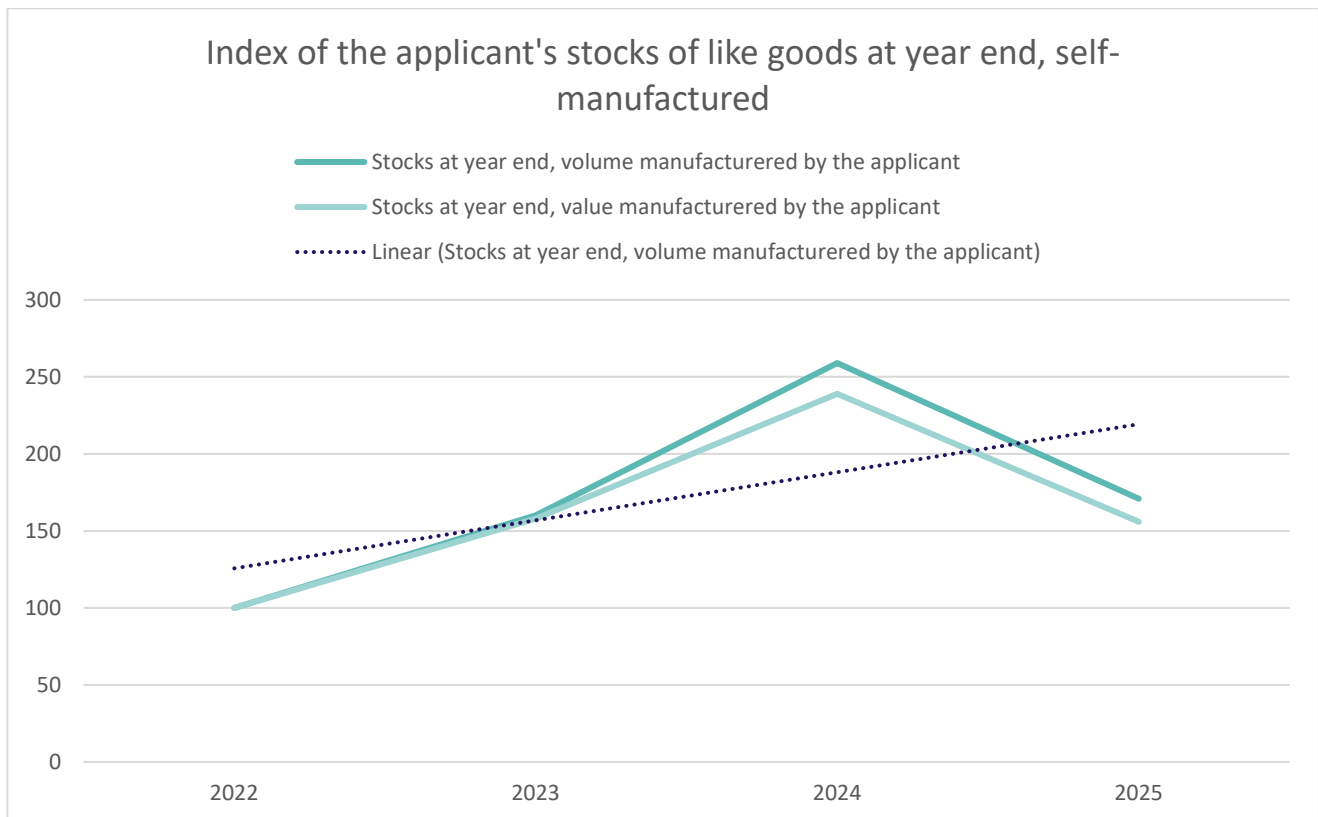


Figure 29 Index of the applicant's stocks of like goods at year end, self-manufactured

528. In relation to both volume and value, the applicant's stock of self-manufactured like goods increased from the first to the second year of the IP and from the second year to the third year of the IP. From the third year to the final year of the IP, the applicant's stock of self-manufactured like goods decreased. In the final year of the IP, the



applicant's stock of self-manufactured like goods was higher than it was in the first year of the IP.

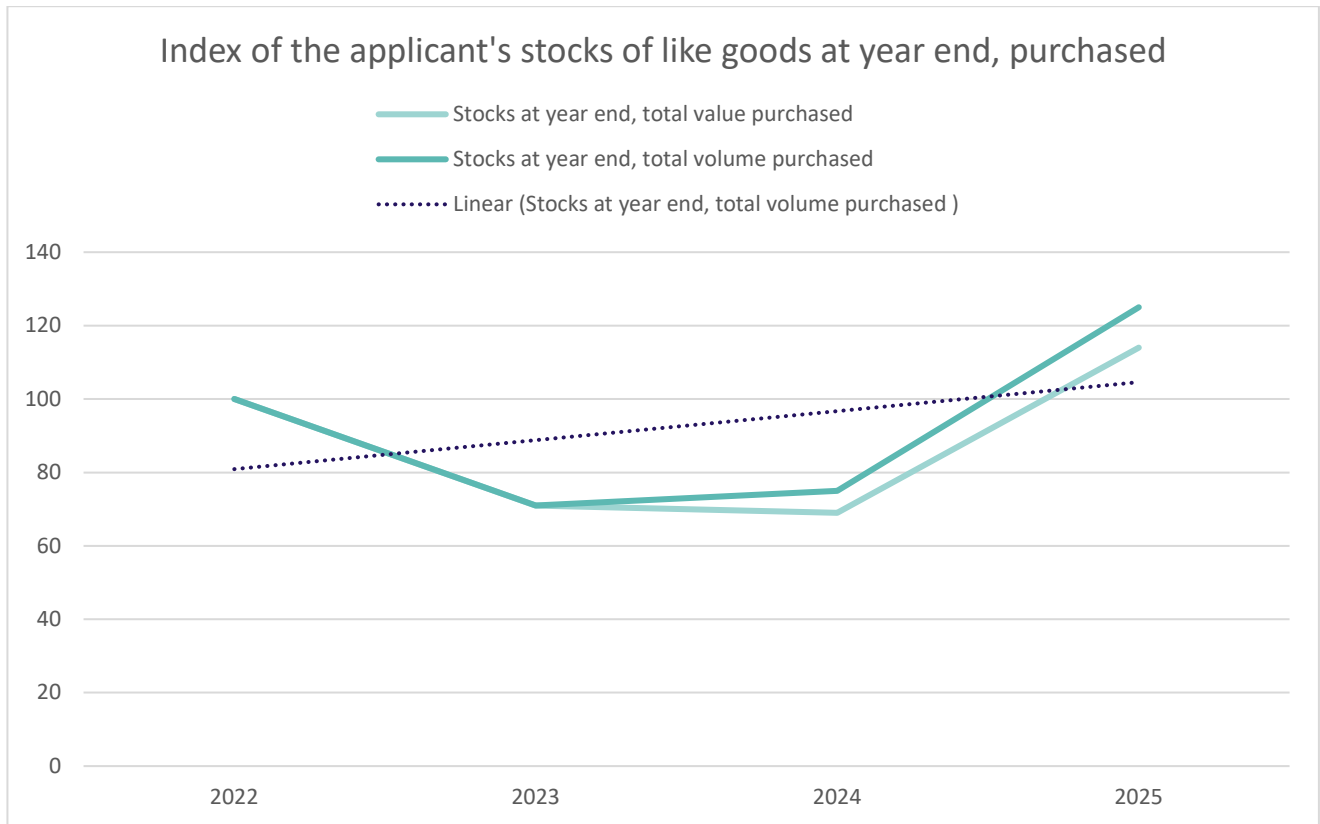


Figure 30 Index of the applicant's stocks of like goods at year end, purchased

529. The applicant's stock of purchased like goods decreased from the first to the second year of the IP. The volume of the stock of like goods purchased increases from the second to the third year of the IP, although the value of the stock of like goods purchased decreases during the same time period. From the third year to the final year of the IP, the applicant's stock of purchased like goods increases. In the final year of the IP, the applicant's stock of purchased like goods was higher than it was in the first year of the IP.

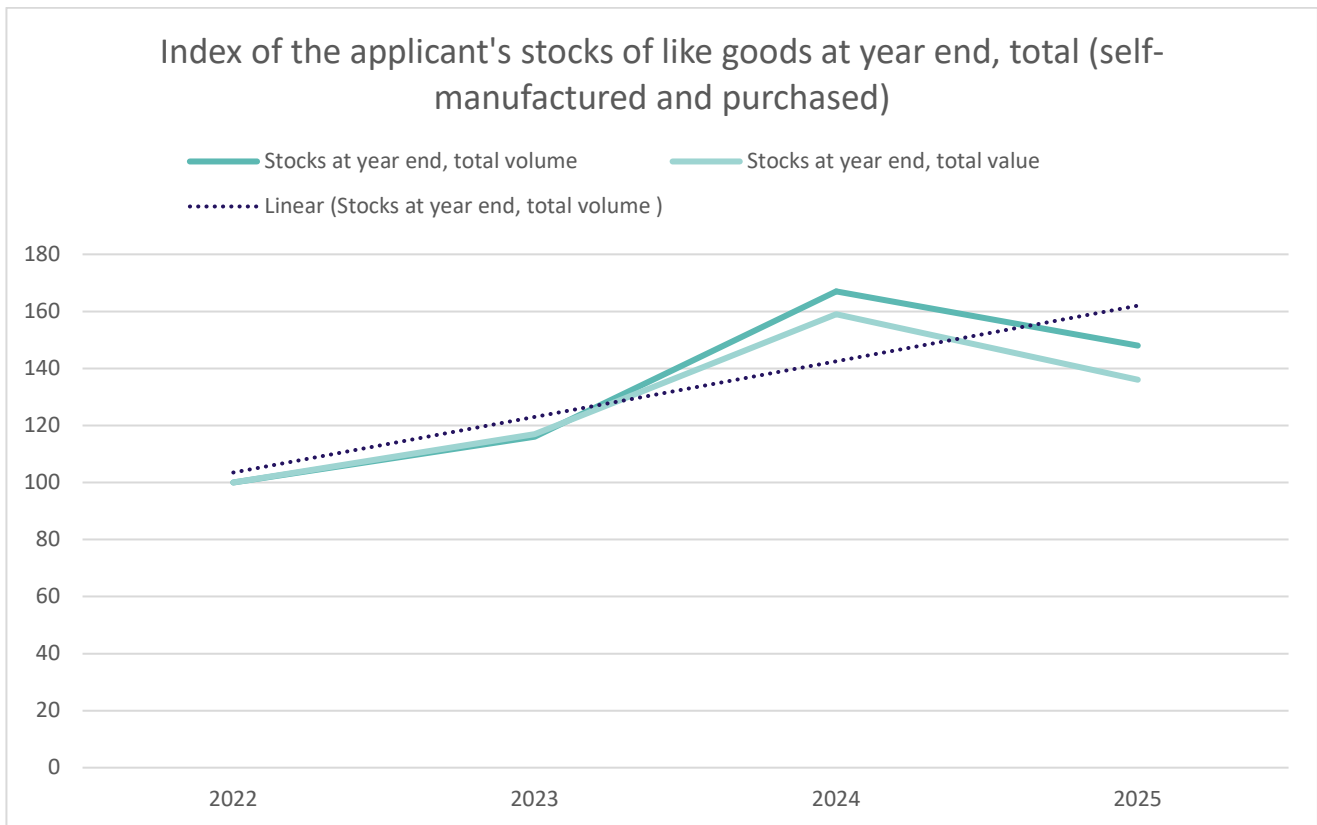


Figure 31 Index of the applicant's stocks of like goods at year end, total (self-manufactured and purchased)

530. The applicant's total stock of like goods increased in the first three years of the IP. From the third year to the final year of the IP, the applicant's stock of like goods decreases. In the final year of the IP, the applicant's stock of like goods was higher than it was in the first year of the IP.
531. The TRA notes that, for the above figures, the index of the value of stock is lower than the index of the volume of stock. This may indicate that the applicant reduced their stock valuation in comparison to the first year of the IP in response to falling sales prices.

G1.3.12 Actual and potential negative effect on employment

532. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential negative effect on employment.
533. The TRA has assessed the actual and potential negative effect on employment on a sector basis and therefore we have used the applicant and Venator's data (from public sources) for the assessment. This assessment is set out in the following figure(s) and accompanying analysis.

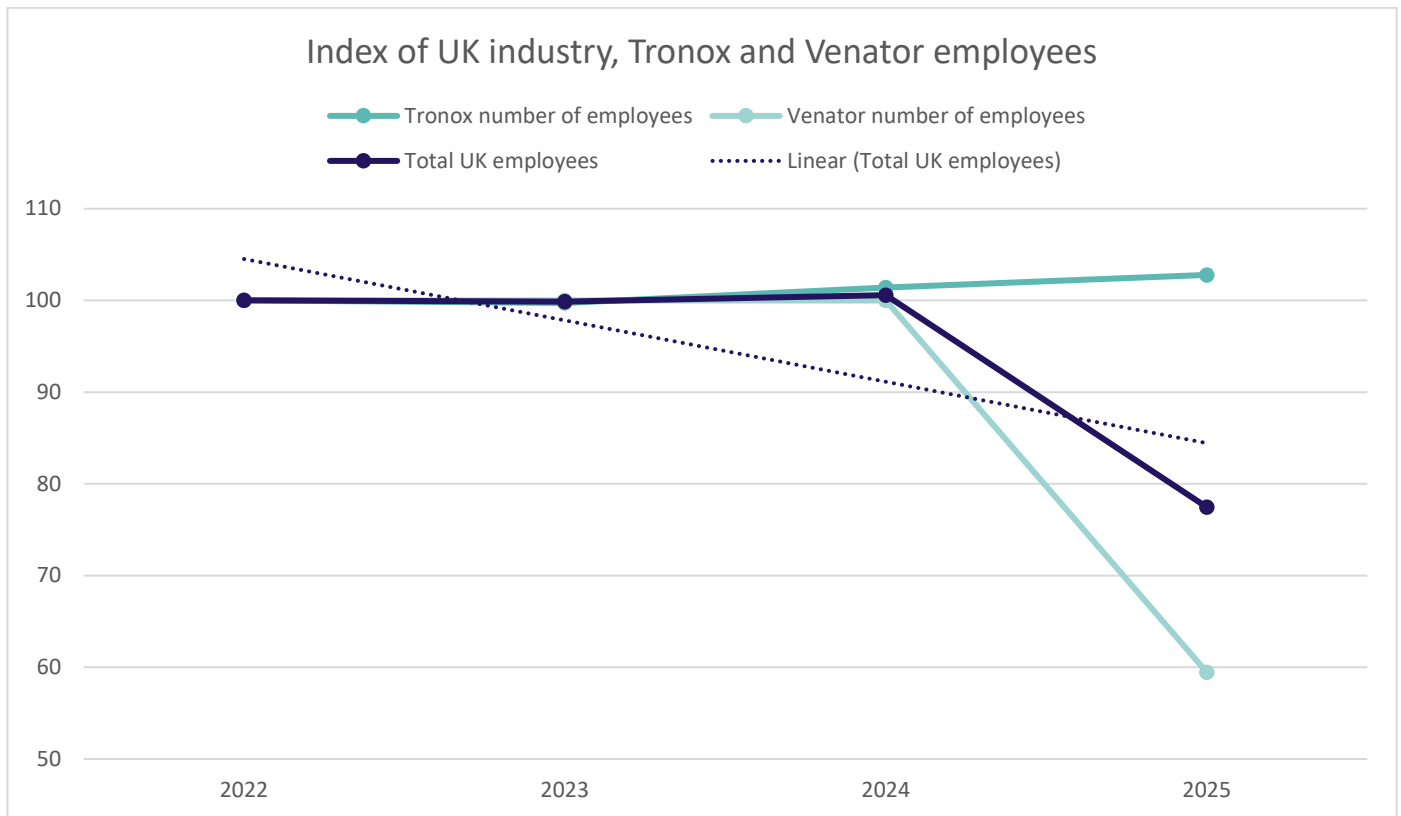


Figure 32 Index of UK industry, the applicant and Venator employees²³⁰

534. UK industry employees remain relatively stable from 2022 to 2024, with a minor increase in employees at the applicant. In the final year of the IP, 2024 to 2025, there is then an additional slight increase in the applicant's employee numbers, whereas there is a significant decline in Venator's employee numbers, which contributes to a decline in the numbers employed by UK industry overall. The significant decrease in Venator's employee numbers in the final year of the IP is because Venator entered administration which involved widespread redundancies.

535. As is the case with the productivity figures set out above (see [G1.3.5 Actual and potential decline in productivity](#)), these employment figures are affected by limited access to information for UK industry. The figures used in this calculation are for production staff only for the applicant, whereas for Venator they are estimates of total number of employees in the UK, which would include production, sales and management staff.

G1.3.13 Actual and potential negative effect on wages

536. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential negative effect on wages.

²³⁰ [Jobs lost as chemical firm awaits Greatham plant sale - BBC News](#), accessed 7 September 2026



537. The TRA has assessed the actual and potential negative effect on wages on a firm basis and therefore we have used the applicant's data for the assessment. This assessment is set out in the following figure and accompanying analysis.

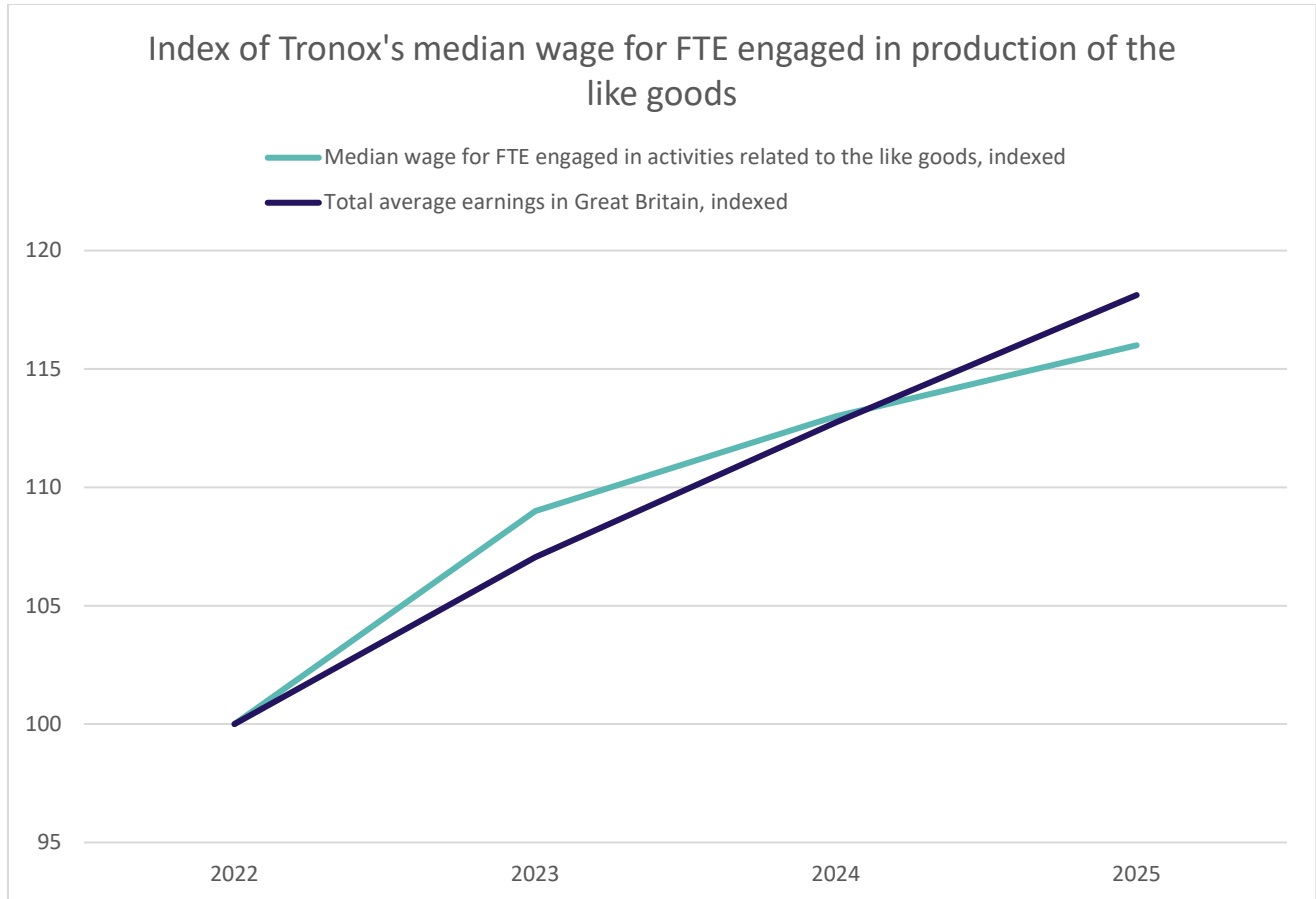


Figure 33 Index of the applicant's median wage for FTE engaged in production of the like goods²³¹

538. The applicants median wage for FTE engaged in the production of like goods increased every year in the IP. In the final year of the IP, the applicant's median wage for FTE engaged in the production of the like goods was higher than it was in the first year of the IP by 16 index points. This is broadly in line with the inflation of total average earnings in the UK, which is 18 index points higher in the final year of the IP compared to the first year of the IP.

G1.3.14 Actual and potential negative effect on the ability to raise capital or investments

539. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account an actual and potential negative effect on the ability to raise capital or investments.

²³¹ [Average weekly earnings in Great Britain - Office for National Statistics](#), accessed 7 September 2026



540. The TRA has assessed the actual and potential negative effect on the ability to raise capital or investments on a firm basis and therefore we have used the applicant's data for the assessment.
541. The applicant has reported in its questionnaire response that its credit rating was downgraded in December 2025.²³² The applicant has submitted that in early 2026 its group owner expanded the securitisation receivables program to have sufficient liquidity to continue operations.²³³
542. The TRA notes that Venator entered administration at the end of the POI (final year of the IP),²³⁴ indicating that Venator experienced a negative effect on its ability to raise capital or investments.

G1.3.15 Actual and potential negative effect on growth

543. In considering, for the purpose of regulation 30(2)(c), the consequent impact of the dumped goods on UK industry, the TRA has taken into account actual and potential negative effects on growth on a sector basis, and therefore we have used the applicant and Venator's data (from public sources) for the assessment.
544. The TRA has assessed growth in terms of sales (see [G1.3.1 Actual and potential decline in sales](#)), profitability (see [G1.3.2 Actual and potential decline in profits](#)), outputs (see [G1.3.3 Actual and potential decline in output](#)), market share (see [G1.3.4 Actual and potential decline in market share](#)), return on investments (see [G1.3.6 Actual and potential decline in return on investments](#)), employment (see [G1.3.12 Actual and potential negative effect on employment](#)) and the ability to raise capital or investments (see [G1.3.14 Actual and potential negative effect on the ability to raise capital or investments](#)) which have been assessed above.
545. When UK industry is assessed, there has been a negative effect on growth. This is because the assessments conducted at both a UK industry and an individual producer level assessments of an actual or potential decline in sales, market share, output and employment show a decline across the IP and/or are lower in the final year of the IP when compared to the first. Returns on investments and profitability were negative for every year of the IP, although losses in relation to both these indicators decreased.

G1.3.16 Other economic factors considered relevant

546. In considering the consequent impact of the dumped goods on UK industry, the TRA has taken into account any recovery from the effects of past dumping.
547. The TRA has established that dumping did occur during the POI. The TRA has not calculated dumping margins for any year other than the POI, and so cannot say for

²³² Tronox, Questionnaire, [General SD-0000062484-T9D6.pdf](#), pages 40-41, accessed 7 September 2026

²³³ Tronox, Questionnaire, [General SD-0000062484-T9D6.pdf](#), page 41, accessed 7 September 2026

²³⁴ [Jobs lost as chemical firm awaits Greatham plant sale - BBC News](#), accessed 7 September 2026



certain whether there were dumped imports of rutile titanium dioxide from the PRC or any other country prior to the POI. It is not proportionate or necessary for the TRA to request the extensive historical data from the interested parties that would be required to establish whether past dumping has occurred.

548. There have not been any previous UK anti-dumping measures that relate to imports of rutile titanium dioxide. It is not possible to establish whether or not there has been past dumping of rutile titanium dioxide into the UK market or assess whether there has been a recovery from any effects of potential past dumping.

549. No other economic factors were considered relevant by the TRA.

G1.4 Threat of material injury

550. The applicant for this investigation, has alleged that there is a threat of material injury from the goods concerned. Regulation 28 of the Regulations defines a threat of material injury as injury which, although it has not yet occurred, is clearly foreseen and imminent.

G1.4.1 The extent to which any significant rate of increase in the volume of the importation of the dumped goods indicates a likelihood of substantially increased importation.

551. The TRA has examined the import data over the POI and IP. Our assessment of this data is set out at [G1.1.1 Volume of dumped goods in absolute terms](#), above. We found that there has not been a significant rate of increase in the volume of the importation of the dumped goods over the POI or IP. There has been an increase in imports of titanium dioxide over a longer, 10-year period, however, this increase has not taken place at a significant rate, and the TRA is unable to assess whether these goods were sold at dumped prices or not.

552. To inform our assessment of a likelihood of substantially increased importation, the TRA has examined the most recent HMRC OTS COO data available, as of September 2026.

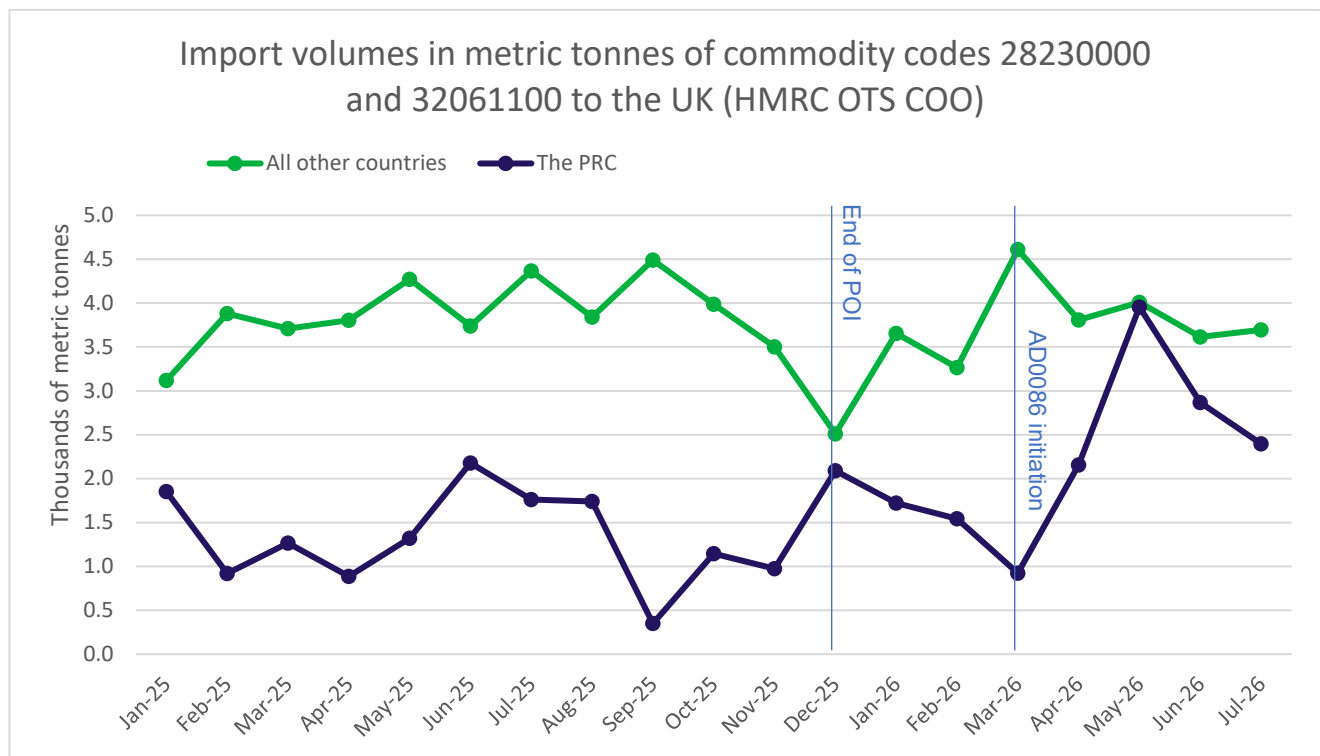


Figure 34 Import volumes in metric tonnes of commodity codes 28230000 and 32061100 to the UK, HMRC OTS COO data

553. This data shows that, since the POI, imports of titanium dioxide from the PRC are at increased levels compared to the same time period during the POI. It also demonstrates that since the initiation of this investigation, imports of titanium dioxide from the PRC to the UK have increased significantly, with the volume imported in May 2026 being over 299% of the volume imported in May 2025.
554. We have compared the volumes of imported titanium dioxide since the POI to the import volumes for the same months during the POI. January to July 2025 (in the POI) had an average monthly import volume of 1,454.67 MT. January to July 2026 (since the POI) had an average monthly import volume of 2,223.36 MT. This is an increase of 52.84% when the same months are compared during the POI and since the POI. The same comparison for import volumes of titanium dioxide to the UK from all other countries shows that import volumes decreased by just under 1%.
555. To limit the potential that our comparison is affected by the initiation of this investigation, we have repeated the same analysis but limited it to January to February 2026, which is after the IP, but prior to AD0086 initiation on 3 March 2026. January to February 2025 (in the POI) had an average monthly import volume of 1,385.93 MT. January to February 2026 (since the POI) had an average monthly import volume of 1,632.87 MT. This is an increase of 17.81% when the same months are compared during the POI and since the POI, but prior to initiation. The same comparison for import volumes of titanium dioxide to the UK from all other countries shows that import volumes decreased by just over 1%.



556. Whilst there has not been a significant increase in import volumes of titanium dioxide from the PRC over the POI or IP, the TRA has determined that there has been a significant rate of increase in import volumes of titanium dioxide since the POI based on the most recent HMRC OTS COO data available. This analysis indicates that there is a likelihood of substantially increased importation of titanium dioxide from the PRC to the UK.

G1.4.2 Whether the overseas exporter has sufficient freely disposable, or an imminent substantial increase in, capacity indicating that there is a likelihood of substantially increased importation of the dumped goods or subsidised imports into the United Kingdom taking into account the availability of other export markets to absorb the additional exports of those goods.

557. The applicant claims that the capacity to manufacture titanium dioxide in the PRC has, and is, increasing. The market data submitted by the applicant indicates that Chinese capacity to manufacture titanium dioxide has increased by 62% from 2017 to the POI, by 31% during the IP and is expected to increase by 85% in the 10-year period from 2017 to 2027.²³⁵

558. The Titanium Dioxide Industry Technology Innovation Strategic Alliance (the TDITISA) is a PRC organisation that serves as a source of information sharing between titanium dioxide producers and academia in the PRC. The TDITISA release reports that document the PRC industry for titanium dioxide.²³⁶ It has stated that 2025 was the first year in more than two decades where there has been a year-on-year decline in both titanium dioxide capacity (2024: 5.9 million MT, 2025: 5.7 million MT) and output (2024: 4.67 million MT, 2025: 4.72 million MT) in the PRC.^{237, 238} This puts the effective capacity utilisation of PRC titanium dioxide producers at 82.8% during 2025 (the POI), which falls to 77.3% when idled capacity is accounted for.²³⁹

559. Global capacity to produce titanium dioxide pigment is estimated to be 9.9 million MT in 2025 (the POI),²⁴⁰ and global demand is estimated to be 7.25 million MT for the same year.²⁴¹ Using the figures set out in the paragraph immediately above for PRC production volumes and the global demand figure for global production volumes,

²³⁵ Tronox, Application, [Application_SD-0000062066-B1Z2.pdf](#), pages 63-64, accessed 7 September 2026

²³⁶ Iron Steel Vanadium Titanium, [Status and development of titanium dioxide industry of China in 2024](#), accessed 21 September 2026

²³⁷ [SunSirs: Statistics Show China's Titanium Dioxide Production Capacity and Output Both Decline for the First Time in 2025](#), accessed 7 September 2026

²³⁸ [China's Titanium Dioxide Output Declines as Capacity Surplus Grows - Blooming](#), accessed 7 September 2026

²³⁹ [China's Titanium Dioxide Output Declines as Capacity Surplus Grows - Blooming](#), accessed 7 September 2026

²⁴⁰ USGS, [Mineral Commodity Summaries 2026 Data Release - Commodity Salient U.S. and World Statistics - ScienceBase-Catalog](#), accessed 7 September 2026

²⁴¹ Informa, Australia – Mining and Resources, [The outlook for mineral sands and rare earths](#), accessed 7 September 2026



titanium dioxide produced in the PRC was (4.72m/7.25m=) 65.1% of global output, with PRC producers responsible for (5.7m/9.9m=) 57.6% of global capacity during 2025 (the POI).

560. There are confirmed plans to increase capacity in the PRC,^{242, 243, 244} despite a reported decline in PRC capacity and production of titanium dioxide. The TDITISA states these plans will increase PRC production capacity to over 7 million MT and create a significant imbalance in supply and demand.²⁴⁵ Historically, PRC capacities to produce titanium dioxide have not followed demand trends, for example, from 2021 to 2024, global demand for titanium dioxide slowed and increased by 180,000 MT over the four years, compared to an increase in global capacity largely driven by PRC producers of 790,000 MT for the same time period. Industry publications forecast that from 2024 to 2029 global titanium dioxide demand will increase by 860,000 MT whilst new capacity additions will reach 1.8 million MT.²⁴⁶
561. The TRA has determined that circumstances in relation to the capacity to manufacture titanium dioxide in the PRC are changing. This change in circumstance is an imminent substantial increase in, and spare capacity to, manufacture titanium dioxide in the PRC. It is a clearly foreseen and imminent change in circumstance because the PRC titanium dioxide industry continues to expand its capacity, with investments and strategies for additional capacity expansions to manufacture titanium dioxide in the PRC. Therefore, there is freely disposable capacity to produce the goods concerned in the PRC that will increase in the imminent future.
562. The ability of other export markets to absorb this freely disposable, and imminently increasing, capacity to produce the goods concerned in the PRC is limited. This is because a number of export markets have trade barriers to the import of titanium dioxide from the PRC.
563. The applicant states, in its application and questionnaire response,^{247, 248} that trade remedies duties in third countries have created a threat of material injury to UK industry from imports of the goods concerned. The application identifies five jurisdictions with trade remedies measures against various forms of titanium dioxide from the PRC. These are:

- The EU (lowest individual rate of €0.25 EUR/KG, residual rate of €0.74 EUR/KG).²⁴⁹

²⁴² [China Boosts Titanium Dioxide Output with 80,000 Tonnes Annual Production Capacity - Blooming](#), accessed 7 September 2026

²⁴³ MooMoo, Tianeng Chemical, [钛能化学：关于对控股子公司增资暨投资建设年产40万吨钛白粉及140万吨七水硫酸亚铁项目的公告 - moomoo](#), accessed 7 September 2026

²⁴⁴ [China Titanium Approves RMB 11B Expansion - ChemEx World](#), accessed 7 September 2026

²⁴⁵ [SunSirs: Statistics Show China's Titanium Dioxide Production Capacity and Output Both Decline for the First Time in 2025](#), accessed 7 September 2026

²⁴⁶ [SunSirs: Titanium Dioxide Industry Remains Bearish in the Short Term](#), accessed 7 September 2026

²⁴⁷ Tronox, Application, [Application SD-0000062066-B1Z2.pdf](#), page 62, accessed 7 September 2026

²⁴⁸ Tronox, Questionnaire, [General SD-0000062484-T9D6.pdf](#), page 43, accessed 7 September 2026

²⁴⁹ European Commission, [Trade defence investigations](#), accessed 7 September 2026



- Brazil (lowest individual rate of \$1,148.72 USD/tonne, residual rate of \$1,268 USD/tonne).²⁵⁰
- India (lowest individual rate of \$460 USD/tonne, residual rate of \$681 USD/tonne).²⁵¹
- Saudi Arabia (lowest individual rate of 19.39% or 1.6 Saudi Riyals/KG, residual rate of 45% or 4.4 Saudi Riyals/KG).²⁵²
- The Eurasian Economic Union (The EEU) (lowest individual rate of 14.27%, residual rate of 16.25%).²⁵³

564. The applicant submits that the EU, Brazil and India are the largest export markets for titanium dioxide from the PRC.²⁵⁴ The applicant further state that the USA limits the prices of titanium dioxide from the PRC through various tariffs that apply to the PRC.²⁵⁵ Additionally, there has been a new investigation relating to imports of titanium dioxide to Australia from the PRC, which is ongoing.²⁵⁶

565. The duties that have been introduced by third countries are generally for a duration of up to five years and include rutile titanium dioxide products. It has been reported that the EU and Brazilian markets have experienced reduced imports of titanium dioxide from the PRC since anti-dumping measures were introduced.²⁵⁷

566. The TRA has examined trade data as reported by the relevant statistical bodies and compiled by GTT at a 6-digit commodity code level (the most detailed reported), as available at the time of assessment. To assess this data, the TRA has indexed it from the month that definitive duties were introduced, so that a comparison can be made of import volumes of titanium dioxide between the time periods preceding and succeeding the introduction of definitive duties.

²⁵⁰ Government of Brazil, [RESOLUÇÃO GECEX Nº 802, DE 23 DE OUTUBRO DE 2025 - RESOLUÇÃO GECEX Nº 802, DE 23 DE OUTUBRO DE 2025 - DOU - Imprensa Nacional](#), accessed 7 September 2026

²⁵¹ Directorate General of Trade Remedies, [Anti-dumping investigation concerning imports of Titanium Dioxide originating in or exported from China PR-regd | Directorate General of Trade Remedies, MOCI, GOI](#), accessed 7 September 2026

²⁵² Saudi General Authority of Foreign Trade, [AD-24-2 / GAFT](#), accessed 7 September 2026

²⁵³ EAEU, Shared Information Resources and Open Data Portal, Measures to Protect the Domestic Market, [Protection of the internal market](#), accessed 7 September 2026

²⁵⁴ Tronox, Application, [Application_SD-0000062066-B1Z2.pdf](#), Page 66, accessed 7 September 2026

²⁵⁵ United States International Trade Commission, [Harmonized Tariff Schedule](#), accessed 7 September 2026

²⁵⁶ Australian Government, [699 - Titanium dioxide from China | Department of Industry Science and Resources](#), accessed 7 September 2026

²⁵⁷ Paint and Coatings Industry, [Tariffs and Over-Capacity Reshape TiO2 Market Dynamics | PCI Magazine](#), accessed 7 September 2026

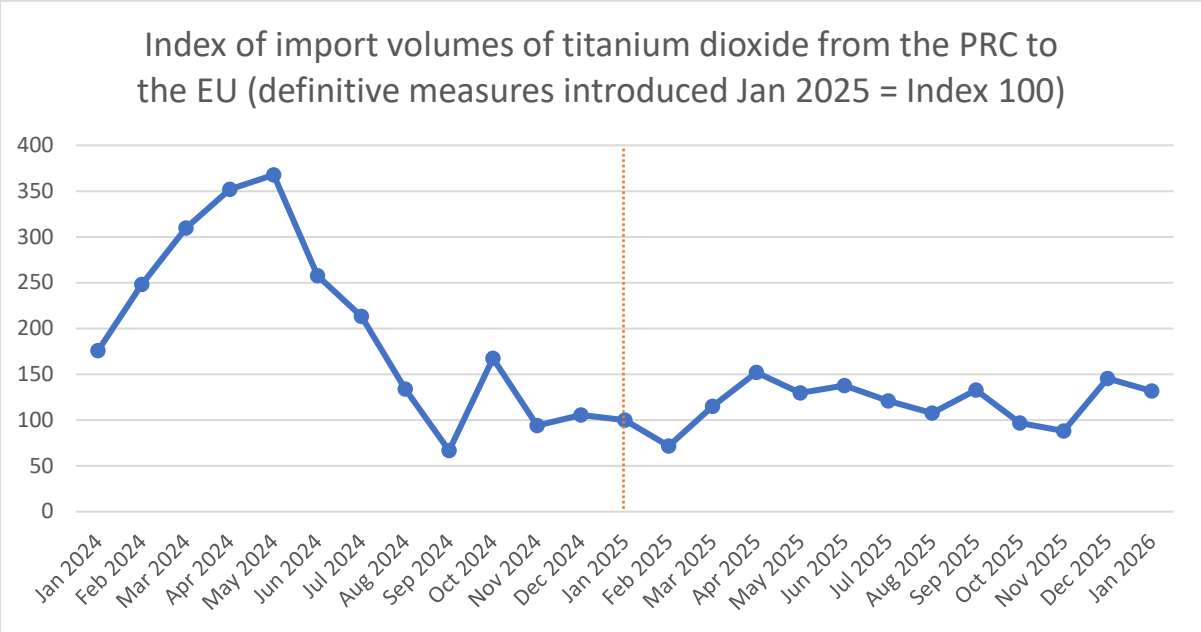


Figure 35 Index of import volumes of titanium dioxide from the PRC to the EU (definitive measures introduced Jan 2025) sourced from 6-digit Global Trade Tracker data

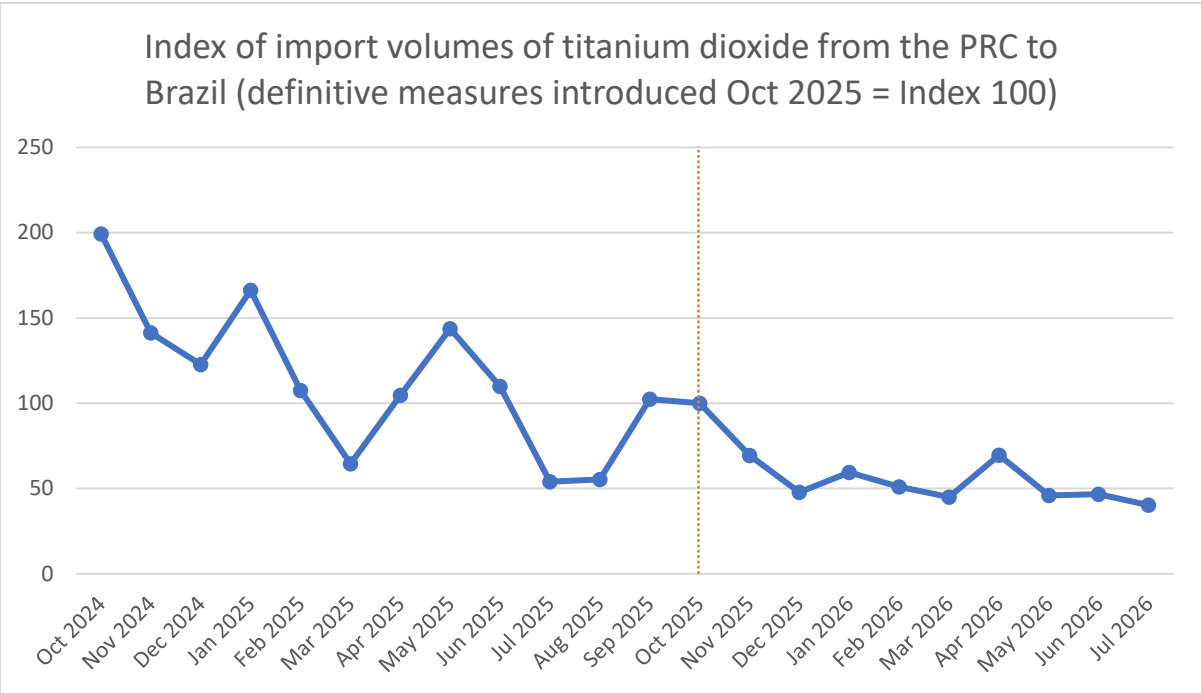


Figure 36 Index of import volumes of titanium dioxide from the PRC to Brazil (definitive measures introduced Oct 2025) sourced from 6-digit Global Trade Tracker data

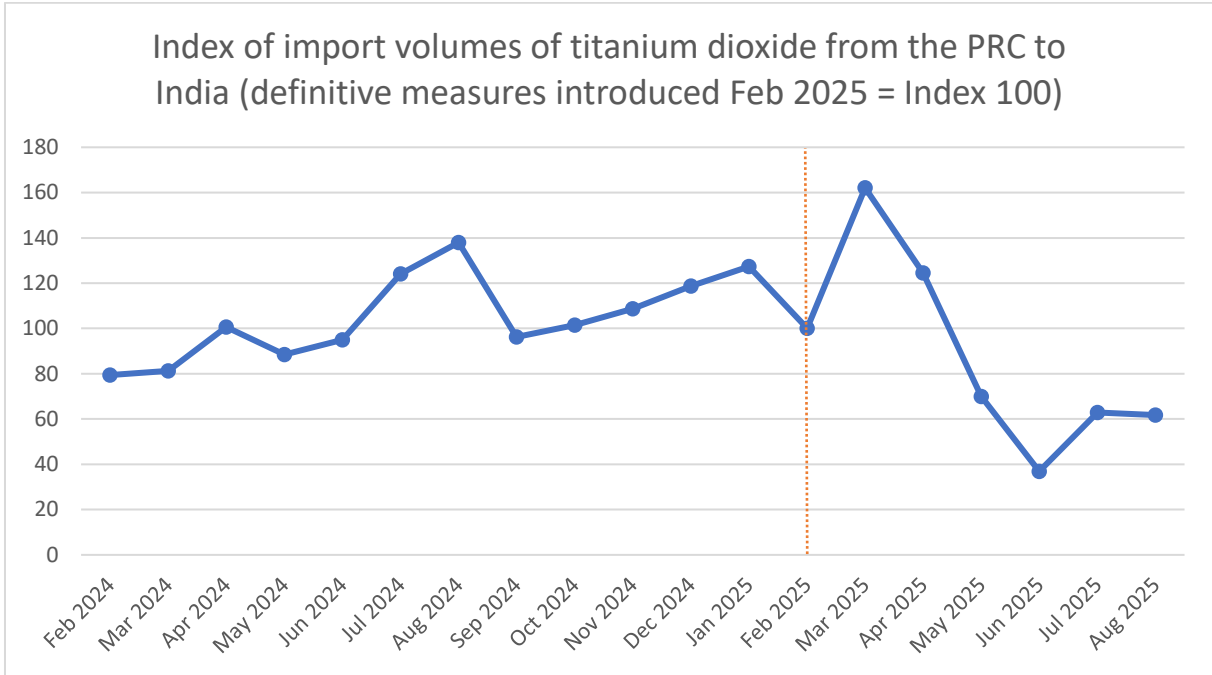


Figure 37 Index of import volumes of titanium dioxide from the PRC to India (definitive measures introduced Feb 2025) sourced from 6-digit Global Trade Tracker data

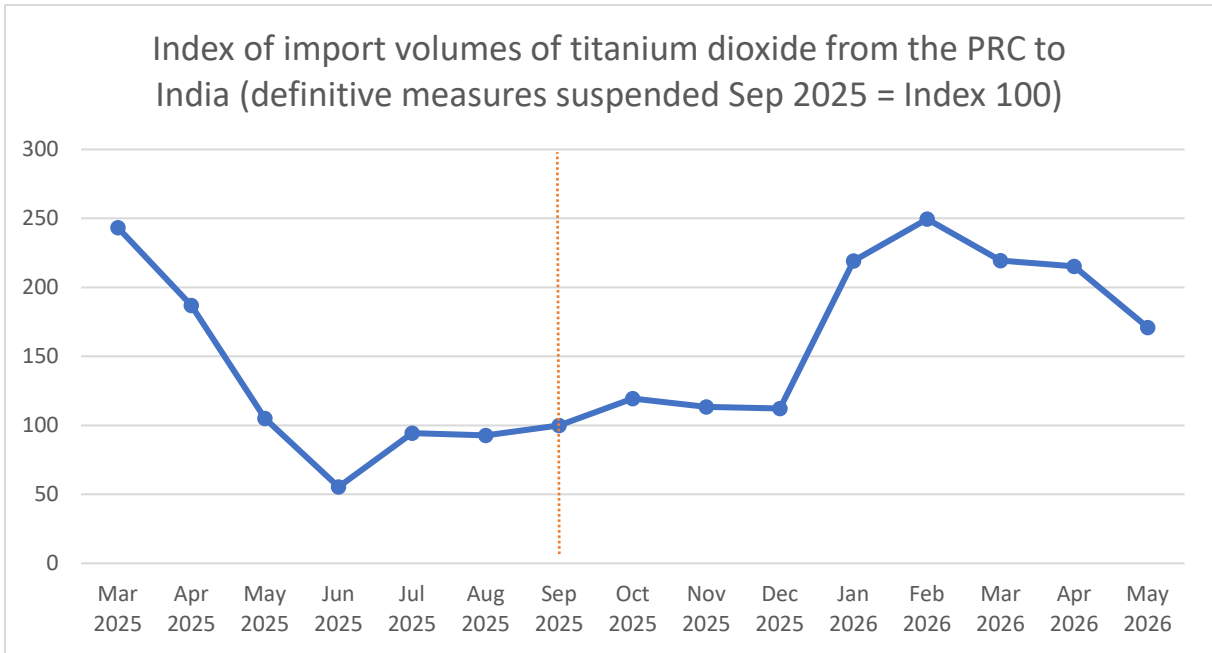


Figure 38 Import volumes of titanium dioxide from the PRC to India (definitive measures suspended Sept 2025) sourced from 6-digit Global Trade Tracker data

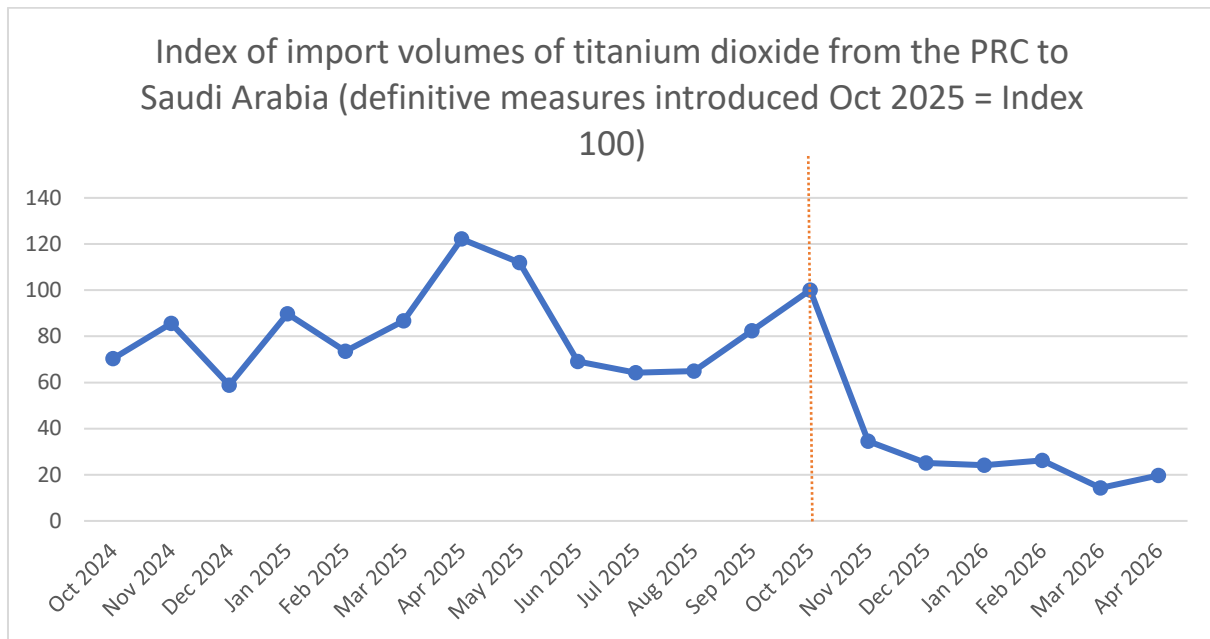


Figure 39 Index of import volumes of titanium dioxide from the PRC to Saudi Arabia (definitive measures introduced Oct 2025) sourced from 6-digit Global Trade Tracker data

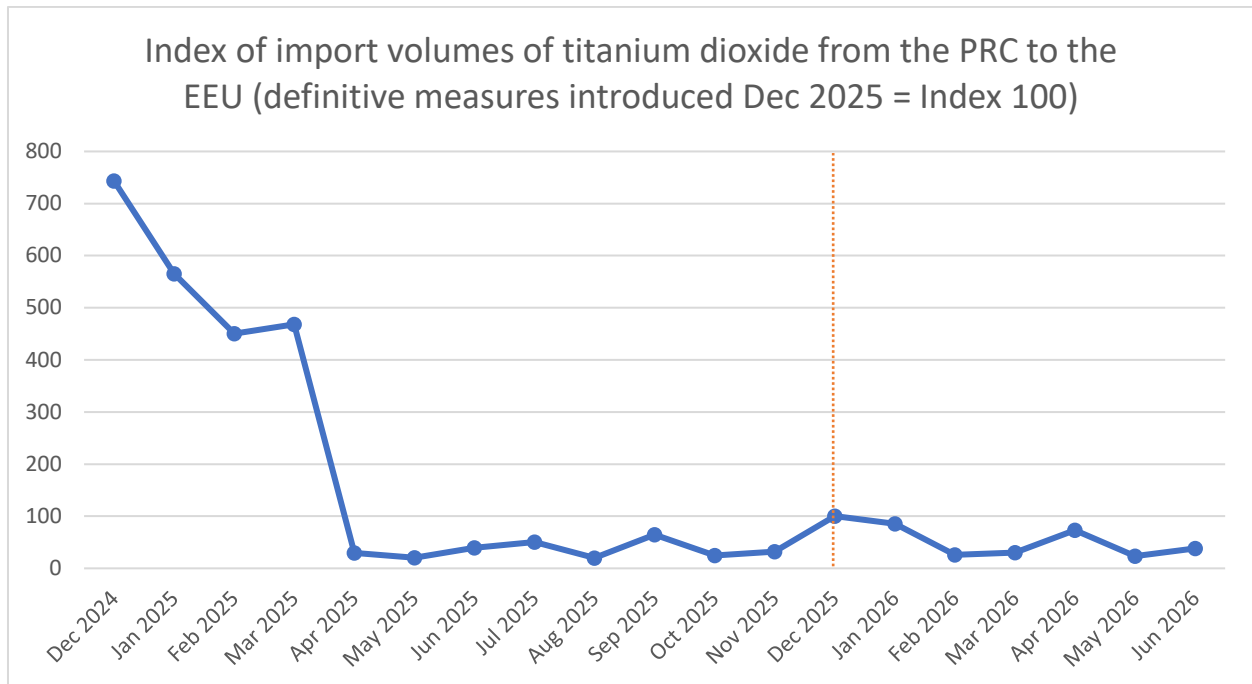


Figure 40 Index of import volumes of titanium dioxide from the PRC to the EEU (definitive measures introduced Dec 2025) sourced from 6-digit Global Trade Tracker data

567. The TRA's assessment of the indexed volumes in the time periods preceding and succeeding the introduction of definitive duties applicable to imports from the PRC shows the following:

- The average volume index for imports from the PRC into the EU in the 12 months preceding the introduction of definitive duties was 207.6, for the 12 months



succeeding it was 119.1. This is equivalent to an average reduction in import volumes of 8,325.2 MT per month.

- The average volume index for imports from the PRC into Brazil in the 12 months preceding the introduction of definitive duties 114.3, for the 9 months succeeding it was 52.8. This is equivalent to an average reduction in import volumes of 4,978.1 MT per month.
- The average volume index for imports from the PRC into India in the 12 months preceding the introduction of definitive duties was 104.9, for the 6 months that the measures were operational it was 86.3. This is equivalent to an average reduction in import volumes of 4,607.9 MT per month.
- The average volume index for imports from the PRC into India for the 7 months (February 2025 to August 2025) that definitive duties were operational was 132.5, for the 8 months (September 2025 to May 2026) following the quashing of the final findings and removal of definitive duties it increased to 177.4. This is equivalent to an average increase in import volumes of 7,412.2 MT per month.
- The average volume index for imports from the PRC into Saudi Arabia in the 12 months preceding the introduction of definitive duties was 81.6, for the 6 months succeeding it was 24.0. This is equivalent to an average reduction in import volumes of 1,847.2 MT per month.
- The average volume index for imports from the PRC into the EEA in the 12 months preceding the introduction of definitive duties was 209.0, for the 6 months succeeding it was 46.0. This is equivalent to an average reduction in import volumes of 1,412.0 MT per month.

568. There has been a notable reduction in imports of titanium dioxide from the PRC in every market assessed, once definitive duties are applied to those imports. In the case of India, this was followed by an increase in imports once definitive duties were removed. The greatest reduction in imports post definitive duties, in terms of index points, is the EEA which reduced by 163 index points. The average reduction of import volumes post definitive duties over all 5 authorities is 77.9 index points. The EU, which is of particular note given their geographic proximity and historical links to the UK, experienced a reduction of imports of 88.5 index points.

569. An assessment of the absolute volumes of reduced imports shows that the greatest reduction in terms of metric tonnage was the EU, which experienced an average reduction of 8,325.2 MT per month. Across all five of the markets that have introduced definitive duties to imports of titanium dioxide of the PRC, there has been an average monthly reduction in imports from the PRC that totals 389.3 index points, equivalent to 21,170.4 MT per month.

570. UK annual consumption in the POI averaged a non-confidential range of 6,000 to 7,500 MT per month (see [G1.1.3 Volume of dumped goods relative to domestic consumption](#)), 21,170.4 MT of monthly excess exports from the PRC has the potential to significantly impact the UK market and cause injury to UK industry. The TRA notes that



not all of this 21,170.4 MT will be rutile titanium dioxide, as other forms of titanium dioxide are included in the 6-digit trade data and in the duties applied by third countries.

571. The TRA has determined that third country duties were introduced in relation to goods that include the goods concerned prior to, and during the POI. In the case of India, duties have been reintroduced since the POI. This introduction of third country duties represents a clearly foreseen and imminent change in circumstances that will take place as trade flows adjust to these new third country duties. The restrictions on market access are currently in place, and the resultant changes to trade flows are already starting to occur.

572. The PRC overseas exporters of the goods concerned have both a sufficient freely disposable, and an imminent substantial increase in, capacity. Taking into account the limited availability of other export markets to absorb additional exports of titanium dioxide, this indicates that there is a likelihood of substantially increased importation of the dumped goods into the UK.

G1.4.3 Whether the dumped goods are entering the United Kingdom at prices which will have a significant depressing or suppressing effect on prices of the like goods in the United Kingdom and whether such prices are likely to increase the demand for further imports of the goods concerned.

573. In [G1.2. Effect of dumped goods concerned on prices](#), above, the TRA has determined that the dumped goods concerned have entered the UK during the POI at prices that have a significant depressing and suppressing effect on prices of like goods in the UK. Additionally, prices of imports originating in countries other than the PRC were approximately 50% to 60% higher than those originating in the PRC during the POI.

574. The goods concerned are interchangeable with the like goods produced in the UK, with comparable characteristics and end uses. The comparatively cheaper price of the goods concerned when compared to UK manufactured like goods is therefore likely to increase the demand for further imports of the goods concerned.



G1.4.4 The inventories of the overseas exporters of the goods concerned

575. The most recent data available indicates that, since the POI, sales prices for titanium dioxide produced in the PRC have experienced significant fluctuations.^{258, 259, 260, 261} Trade data shows decreased import volumes of titanium dioxide into the PRC, and increased export volumes of titanium dioxide from the PRC, in 2026.²⁶²
576. There are indications that inventories of titanium dioxide held by producers in the PRC have increased since the POI.²⁶³ The TRA have determined that this growth in inventory is likely to continue as titanium dioxide producers in the PRC experience the effects of changes to market access and capacities (discussed above). This growth of inventory is a changing circumstance in the foreseen and imminent future which contributes to a threat of injury.

G1.4.5 PRC export controls of sulphuric acid

577. The PRC government has introduced export controls relating to sulphuric acid throughout the first half of 2026.²⁶⁴ Sulphuric acid is a key input in the sulphate production process that is used to manufacture the majority of titanium dioxide in the PRC.²⁶⁵ In the POI the PRC was the largest seaborne supplier of sulphuric acid, in June 2026 PRC exports of sulphuric acid fell by 99%. Export controls since the POI have limited the availability of sulphuric acid to the global market and simultaneously created a closed market for sulphuric acid in the PRC.²⁶⁶
578. The TRA has determined that circumstances in relation to the availability of sulphuric acid in the PRC has, and are, changing. This change in circumstance is a reduced ability to export, and a subsequent closed market for, sulphuric acid in the PRC. As sulphuric acid is a key input to the majority of titanium dioxide production in the PRC, this closed market for sulphuric acid is likely to increase the production of, and decrease the sales prices of, titanium dioxide manufactured in the PRC, further increasing incentives to export at low prices to unprotected markets.

²⁵⁸ [2026 Titanium Dioxide Multiple Round Price Hikes, Collective Increase Again in June - ChemNet](#), accessed 21 September 2026

²⁵⁹ Echemi, [25 Companies Raise Prices Three Times Within a Month: China's Titanium Dioxide Industry Shifts from "Price Wars" to a "Pricing Alliance"](#), accessed 21 September 2026

²⁶⁰ [Q2 2026 China Titanium Dioxide Market Report - Hangzhou Harmony Chemical Co.,Ltd](#), accessed 21 September 2026

²⁶¹ [The titanium dioxide market is weak but stable, awaiting signals of order release \[SMM Titanium Spot Express\] - Shanghai Metals Market \(SMM\)](#), accessed 21 September 2026

²⁶² [Export volume of titanium dioxide in May 2026 - Hangzhou Harmony Chemical Co.,Ltd](#), accessed 8 September 2026

²⁶³ [The titanium dioxide market is weak but stable, awaiting signals of order release \[SMM Titanium Spot Express\] - Shanghai Metals Market \(SMM\)](#), accessed 21 September 2026

²⁶⁴ [China sulphuric acid export ban | IFCHOR GALBRAITHS](#), accessed 21 September 2026

²⁶⁵ MDPI, [A Review of the Commercial Uses of Sulphate Minerals from the Titanium Dioxide Pigment Industry: The Case of Huelva \(Spain\)](#), accessed 7 September 2026

²⁶⁶ Discovery Alert, [China Sulphuric Acid Exports Plunge 99% in 2026](#), accessed 7 September 2026, and, [\[SMM Analysis\] Decoding China's H1 2026 Sulphur and Sulphuric Acid Customs Data: Shifting Volume, Source and Momentum - Shanghai Metals Market \(SMM\)](#), accessed 7 September 2026



579. The closed market for sulphuric acid in the PRC is a clearly foreseen and imminent change in circumstance because the export controls were introduced by the government of the PRC in the first half of 2026, this has affected, and will continue to affect, the availability and trade flows of sulphuric acid in the PRC.

G1.5 Totality of the injury factors

G1.5.1 Conclusion: Volume effects

580. *Figure 14 Import volumes of commodity codes 28230000 and 32061100 (HMRC COO OTS data) from the PRC*, set out above in [G1.1.1 Volume of dumped goods in absolute terms](#), does not show an increase in absolute volumes of dumped goods over the POI and IP. Whilst there is a longer-term trend over a 10-year period of increasing imports of titanium dioxide to the UK from the PRC, and an increase in import volumes in the final two years of the IP from 2023 onwards, over the IP as a whole there is no significant increase in absolute import volumes from the PRC.

581. Import volumes relative to domestic production, above at [G1.1.2 Volume of dumped goods relative to domestic production](#), also shows no significant increase of imports of titanium dioxide relative to domestic UK production.

582. The assessment at [G1.1.3 Volume of dumped goods relative to domestic consumption](#), does not show a significant increase of imports of titanium dioxide from the PRC relative to UK consumption over the IP.

583. The TRA have concluded that there has been no significant increase in imports of titanium dioxide to the UK from the PRC during the IP.

G1.5.2 Conclusion: Price effects

584. The TRA calculated a price undercutting margin of 46.43% (see [G1.2.1. Price undercutting](#), above). This indicates that the sales prices of the goods concerned are lower than the UK sales prices of like goods.

585. [G1.2.2. Price depression](#), shows that import prices of titanium dioxide from the PRC were at the low end of the range of UK sales prices for like goods in the first year of the IP, and below the range of UK sales prices for like goods from then to the last year of the IP.

586. [G1.2.3. Price suppression](#), demonstrates that the sales prices of titanium dioxide imported from the PRC were below the cost of production of UK like goods for every year of the IP.

587. When considered as a whole, the TRA has determined that the price effect assessments demonstrate that imports of titanium dioxide from the PRC are undercutting, depressing and suppressing the sales prices of UK manufactured like



goods. These consistently lower priced imports from the PRC are also likely to maintain, and increase, demand for further imports of titanium dioxide from the PRC to the UK.

G1.5.3 Conclusion: Economic factors

588. The economic factors assessed by the TRA in relation to claimed injury suffered by UK industry are mixed. UK industry has negative economic indicators in the factors relating to:

- Actual and potential decline in output: This is lower in the final year of the IP compared to the first year of the IP and trends downwards.
- Actual and potential decline on utilisation of capacity: Capacity utilisation, which was lower in the final year of the IP compared to the first year of the IP.
- The magnitude of the margin of dumping.
- Actual and potential negative effect on employment: The employee headcount reduced significantly into the final year of the IP and was less than 80% of what it was in the first year of the IP.
- Actual and potential negative effect on the ability to raise capital or investments: One UK producer entering administration and the other subject to increased barriers to finance.
- Actual and potential negative effect on growth: This has been limited by the sales, market share, output and employment figures.

589. There are also some economic factors for which the UK industry does not have negative economic indicators, these are:

- Actual and potential decline in productivity: This indicator reduced into the second year of the IP (2022 to 2023) but then increased into the final year of the IP and was higher in that final year of the IP compared to the first year of the IP (although the TRA notes that these figures may be affected by Venator's redundancies in the final year of the IP).
- Actual and potential negative effect on cash flow: Cash flow has increased over the IP and became positive in the middle of the IP (2023 to 2024).
- Actual and potential negative effect on wages: These have increased over the IP generally in line with inflation.
- Recovery from the effects of past dumping: No past dumping, prior to the IP, has been identified.

590. Finally, there are some economic injury factors for which the data is mixed. These are:

- Actual and potential decline in sales: Sales of UK manufactured like goods by volume and value. Whilst these are lower in the final year of the IP compared to the first year of the IP, there is an increase in sales by volume during the IP, and sales by value is likely to have been affected by global fluctuations in the prices for



the goods concerned and like goods (although the TRA notes the above conclusions in relation to price depression and suppression).

- Actual and potential decline in profits: Profitability. The applicant has not made a profit on the sale of like goods at any point during the IP, but losses have reduced for every year of the IP except for the final year of the IP.
- Actual and potential decline in market share: Market share, which is lower in the final year of the IP when compared to the first year of the IP, but is higher in the intermediate years than in the first year of the IP.
- Actual and potential decline in return on investments. These are negative for every year of the IP, but the trend is towards a positive return on investments, and losses on investments reduced in the middle two years of the IP (from 2022 to 2023, and then from 2023 to 2024).
- Factors affecting the domestic prices of like goods: Average sales prices, which have decreased over the IP, as have global prices and the import prices of the goods concerned.
- Actual and potential negative effect on inventories: The stocks of UK industry have generally increased over the IP, but they reduced into the final year of the IP.

591. When considered as a whole, the TRA has determined that the economic injury factors assessment does not demonstrate that UK injury has suffered from material injury. Whilst some of the factors do indicate injury, other factors indicate a lack of injury or are inconclusive.

G1.5.4 Conclusion: Threat of injury

592. The TRA notes that for a number of the economic injury factors, the data shows negative effects into the final year of the IP, which are indicative of a threat of injury beginning to materialise. The factors that include this trend are:

- UK industry sales by volume and value
- Actual and potential decline in profits
- Actual and potential decline in output
- Actual and potential decline in market share
- Actual and potential decline in investments
- Actual and potential decline in utilisation of capacity
- Factors affecting the domestic prices of like goods
- Actual and potential negative effect on inventories
- Actual and potential negative effect on employment
- Actual and potential negative effect on the ability to raise capital or investments
- Actual and potential negative effect on growth

593. There are five additional assessments that the TRA has considered as part of the threat of injury assessment.



594. The TRA has assessed that there has not been a significant rate of increase in the volume of the importation of the dumped goods into the UK over the IP, and that it is not possible to determine whether the longer-term trend of increasing imports over a ten-year period includes dumped goods or not. Despite this, there has been a significant increase in the volumes of imports of titanium dioxide from the PRC to the UK since the POI, and this indicates that there is a likelihood of substantially increased importation.
595. PRC exporters of the goods concerned do have sufficiently freely disposable, and an imminent substantial increase in, capacity indicating that there is a likelihood of substantially increased importation of the dumped goods into the UK. This takes into account the limited availability of other export markets to absorb additional exports of rutile titanium dioxide, with additional duties payable on imports of titanium dioxide from the PRC to the EU, Brazil, India, Saudi Arabia and the EEU, as well as general tariffs applicable to exports from the PRC to the USA and an ongoing anti-dumping investigation in Australia.
596. The dumped goods concerned are entering the UK at prices which have had a significant depressing or suppressing effect on prices of the like goods in the UK, and that such prices are likely to increase the demand for further imports of the goods concerned. Inventories of titanium dioxide held by producers in the PRC, which have increased since the POI, are likely to continue to grow and contribute to a threat of injury.
597. Finally, export controls of sulphuric acid in the PRC will increase the availability of a key raw material for PRC exporters of the goods concerned, which is likely to reduce sales prices and incentivise the low-priced export of titanium dioxide.

G1.5.5 Conclusion: Injury

598. The TRA have assessed injury to UK industry on a holistic basis. We have done this by examining volume effects, price effects, economic factors and other factors. The conclusion of this assessment is that UK industry is suffering from a threat of material injury.
599. There is no significant increase in import volumes during the IP, either in absolute or relative terms. UK industry has been undercut, with significant price suppression and depression occurring throughout the IP. Such prices of the goods concerned are likely to injure UK industry and increase demand for further imports of the goods concerned. The economic injury factors of UK industry are mixed, with some indicating possible injury to UK industry and others not (as set out above).
600. Changes in circumstances are both clearly foreseen and imminent. This is because PRC producers of the goods concerned have limited access to third country markets, which is increasing the attractiveness of export markets without protection and redirecting trade flows to these countries. Additionally, there is excess capacity to produce the goods concerned in the PRC that is increasing, both due to investment and due to a reduction in exports to protected markets. Other export markets have a limited ability to absorb additional exports due to recently established trade barriers. Finally, the



export limitations introduced by the PRC relating to sulphuric acid will benefit PRC producers of the goods concerned, as they will have a greater access to inputs than the global market.

601. Evidence of a clearly foreseen and imminent threat of injury that is beginning to materialise is evident:

- In the volume effects analysis, which shows imports of the goods concerned increasing in the final two years of the IP (from 2023 onwards).
- In the price effects analysis, whereby imports of the goods concerned are undercutting and underselling UK industry and will increase demand for further imports of the goods concerned.
- In the economic factors that worsen into the final year of the IP (see above at paragraph 570).
- In the changing circumstances of the industry, whereby PRC producers of the goods concerned have limited access to third country markets, excess and increasing capacity and a protected supply of sulphuric acid.

602. The TRA have therefore assessed that UK industry is suffering from injury in the form of a threat of material injury. This injury has not yet occurred, but it is clearly foreseen and imminent due to changes in circumstance.

G2. Causation and non-attribution

603. In accordance with regulation 35 of the Regulations, injury caused by other known factors must not be attributed to dumped imports of the goods concerned. The TRA considered whether any other known factors, other than the dumped goods, caused or are causing injury to the UK industry.

G2.1 Causation: Volume effects

604. The TRA has not determined that there has been a significant increase in imports of the goods concerned and so is not examining causation relating to import volumes during the IP. The TRA has determined that there is a threat of material injury which includes increased import volumes, the causation of which is assessed in [G2.4 Causation: Other relevant factors](#), below.

G2.2 Causation: Price effects

G2.2.1 Rising costs of production

605. The CNCIA have submitted that rising costs of production are a significant cause of injury for UK industry, with particular reference to energy, but also raw materials and operational cost pressures, as well as the level of inflation in the UK.



606. The TRA has concluded that UK industry is suffering from a threat of material injury. We have therefore considered rising costs of production in this context.
607. The applicant, who is the surviving UK producer at the end of the IP and so the producer that is suffering from a threat of material injury, is a vertically integrated company. This provides the applicant with control over a large portion of its costs of production and allows it to limit any injury caused by raw materials and operational cost pressures. Energy costs in the UK have historically always been higher when compared to other industrialised nations, with UK energy prices being above the International Energy Agency median since 2005.²⁶⁷ Energy prices in the UK have increased over the IP, despite this we have not found injury during the IP, and so the potential for UK energy costs to keep rising are also not a cause of a threat of material injury. UK energy costs being comparatively high are not a new or changed circumstance.
608. The applicant has also responded to the CNCIA claim of increasing UK costs, stating that its costs have not increased over the IP.²⁶⁸ This is consistent with the applicant's domestic producer questionnaire data.²⁶⁹
609. The TRA has found that energy and raw material costs are distorted in the PRC which has a direct impact on the costs of production for the goods concerned. UK producers of like goods have costs of production which are affected by market conditions, whereas producers of the goods concerned in the PRC have costs of production which are subject to distortions. It is the difference between the costs of production in the UK which are subject to market forces, and the distorted costs of production in the PRC, which is capable of contributing to a threat of injury to UK industry.
610. Rising costs of production are not another cause of injury and are not sufficient to break the causation of a threat of material injury arising from the clearly foreseen and imminent changes in circumstances that have been identified above.

G2.3 Causation: Economic factors

G2.3.1 Timeliness of economic factor indicators compared to imports of the goods concerned

611. The CNCIA submission sets out import volumes of the goods concerned by year and compares them to the yearly trends of the economic injury factors included in the application, with particular reference to market share, profitability, return on investments, investments and cashflow, production and capacity utilisation. The CNCIA submission

²⁶⁷ Industrial energy prices in the IEQ dataset, [International non-domestic energy prices - GOV.UK](#), accessed 7 September 2026

²⁶⁸ Tronox, Response to CNCIA, [Trade Remedies Authority | AD0086_1003](#), pages 8-9, accessed 7 September 2026

²⁶⁹ Tronox, Questionnaire Annex post verification, [General_SD-0000061217-K6K4.xlsx](#), accessed 7 September 2026



notes that some injury factors declined without imports of the goods concerned increasing in the same year or years.

612. The TRA has found that UK industry is suffering from a threat of material injury from imports of the goods concerned. We have not found that current or past injury has been inflicted on UK industry during the IP from the goods concerned. Therefore, a timely coincidence between imports of the goods concerned and injury to the UK industry may not be clearly established at this stage (when injury has not yet crystalised to the fullest extent).
613. The price trends data shows that the sales prices of the goods concerned follow the same trend as UK sales prices (see [G1.2.2. Price depression](#)), and UK costs (see [G1.2.3. Price suppression](#)) but is consistently lower.
614. There may be a delayed, rather than instantaneous, effect on UK industry from imports. The goods concerned are sometimes stored in the UK prior to sale, and even if they aren't it can take time for the effects of imported goods to impact the UK market and UK industry. Where import volumes of the goods concerned reduce, it would not necessarily be expected to instantly impact UK industries' economic factors, as companies require time to adjust and reposition themselves in the market if necessary, or may be able to take mitigating measures to reduce any resultant injury.
615. The sales price trends referenced in the above paragraph show that the sales prices of the goods concerned and the UK manufactured like goods are somewhat linked, as both follow the same trends (albeit at a lower price point for the goods concerned). The trends of the import volumes of the goods concerned do not directly correlate with the UK industries' economic injury factor trends, but this does not preclude a timely coincidence or causation due to delayed impacts and adjustments to market conditions by UK producers.
616. The TRA noted that some of the economic factors show indications that a threat of injury may be starting to manifest in the final year of the IP, the POI.
617. There is an increase in import volumes of the goods concerned into the final year of the IP, the POI when compared to previous years. There is also some injury demonstrated in the final year of the IP, the POI, when compared to the previous years. Therefore, there is a timely coincidence between the imports of the goods concerned and the early indications that there is a threat of material injury to UK industry, which is the type of injury that has been found in this investigation.

G2.3.2 Aggressive liquidation of inventory at below-market pricing

618. The CNCIA further allege that the liquidation of inventory from Venator's administration is a factor that should be considered in the undercutting and underselling assessments, and that the applicant's position that price reductions have been caused by the goods concerned should be taken with caution.



619. The liquidation of inventory referred to is described as '[...] a temporary headwind in the third quarter [...]' in the applicant's financial results that are quoted by the CNCIA. The undercutting and underselling calculations are based on data for the whole of the POI and compare UK costs/prices to the goods concerned. A temporary situation in one quarter of the POI is not sufficient to undermine, or break causation, in these calculations which cover a longer time period.
620. The validity, and causation, of the undercutting and underselling calculations is further supported by the price suppression and depression assessments, that show consistently lower prices for the goods concerned over the whole of the four-year IP compared to UK prices/costs.
621. The liquidation of inventory in the UK is not significant enough, both in terms of volume and time, to break the causation between the goods concerned and undercutting/underselling that is demonstrated over the POI and supported by additional assessments (price suppression and depression) that cover the whole of the IP.

G2.3.3 Credit rating downgrading

622. Additional comments made by the CNCIA related to the availability of credit, and the applicant's claim that exports of titanium dioxide from the PRC had directly led to the credit downgrading. The CNCIA state that the credit downgrading was related to the global Tronox Group, not the UK producer who are a subsidiary.
623. Tronox Group financing is a business strategy which is, and should, be open to producers without precluding injury. The TRA notes that it is a common practice in the titanium dioxide industry for the large producers to have some level of vertical integration and group ownership, as the sampled exporters in this investigation also do. The applicant is a significant part of Tronox's Group holdings, being the third largest capacity titanium dioxide plant of the seven that are included in the group ownership structure.²⁷⁰ A credit rating for the group applies to both the applicant and the wider group. When the credit rating was evaluated for the whole of the Tronox Group, it would be usual practice to assess the positions of the whole portfolio of companies, including the applicant.
624. The credit rating downgrade applies to the applicant, and so it is relevant to this investigation. The TRA have not concluded that the credit rating downgrade is, or has caused injury in of itself, but it is relevant to the causation of a threat of injury, as it may be an early indication that a threat of injury is materialising. The group ownership structure does not preclude this finding or interrupt causation.

²⁷⁰ [Tronox Holdings plc - Tronox Investor Presentation 2025](#), accessed 7 September 2026



G2.3.4 Export performance

625. The CNCIA submission raises a point around the export performance of the applicant, stating that: 'In CNCIA's view, the relatively poor export performance contributed to the Applicant's alleged injury to a large extent.'²⁷¹
626. The applicant has responded to this, by claiming 'The Rutile TiO₂ market is a global commodity market, and Chinese dumping has affected Rutile TiO₂ prices worldwide. The Applicant's export performance is thus affected by the same cause: dumping from China.'²⁷²
627. The TRA notes that the data that underlies the injury assessments includes indicators that are relevant to the whole of the UK industry, not only the applicant. The assessment of volume and price effects is not affected by the export performance of UK industry, as those assessments only include data for the UK market.
628. Finally, the TRAs assessment is that the type of injury suffered by UK industry in this investigation is a threat of material injury. The export performance of UK industry has not been a driver of this assessment, and the threat of material injury to UK industry exists independently of exports from the UK. Export performance is therefore not a factor that has broken causation for the threat of injury that has been found.

G2.3.5 Force majeure incident

629. The CNCIA make reference to a force majeure (an unexpected and exceptional)²⁷³ event which was reported in the applicant's Q1 2022 earnings call as 'Extended downtime at Stallingborough adversely impacted production rates and fixed cost absorption'.²⁷⁴ The CNCIA further refer to a period at the end of 2025, when the applicant reported that 'Excluding the unanticipated headwinds from product mix and the additional Stallingborough downtime, our Adjusted EBITDA would have been in-line with expectations.'²⁷⁵ The CNCIA submit that this is evidence of self-inflicted injury 'These aspects taken together speak of a UK industry which suffered self inflicted harm which is completely detached from Chinese imports.'
630. The TRA has considered these points as potentially impacting on causation, in particular the period at the end of the IP (the end of 2025) where there are some indications of a threat of injury that is beginning to materialise. One incident in a four-year period is not sufficient to impact the trends over the whole of those four years. The TRA notes that similar force majeure events have taken place during the IP at other

²⁷¹ CNCIA, Comments on the Application and Initiation of investigation, [General-publication---Submission-\(from-an-interested-party\)_SD-0000067067-Y7D0.pdf](#), page 19, accessed 7 September 2026

²⁷² Tronox, Response to CNCIA comments, [Trade Remedies Authority | AD0086_1003](#), page 8, accessed 7 September 2026

²⁷³ [Force majeure Definition | Legal Glossary | LexisNexis](#), accessed 7 September 2026

²⁷⁴ Tronox, First Quarter 2022 Conference Call, [Tronox PowerPoint Template](#) page 9, accessed 7 September 2026

²⁷⁵ PR Newswire, [Tronox Announces Closure of its Pigment Plant in China and Releases Selected Preliminary Fourth Quarter 2025 Financial Results](#), accessed 7 September 2026



manufacturers of rutile titanium dioxide, including at the facilities of the sampled exporters in this investigation, who suspended production at the end of the IP.²⁷⁶

631. In relation to the applicant's downtime at the end of the IP (final quarter 2025), this is one detail quoted from a longer press release. The same press release also discussed the challenges of '[...] Chinese competitors' continued excess production and unsustainable pricing[...]' and '[...] Our fourth quarter volumes were stronger than anticipated, driven by improving market share in regions that successfully implemented antidumping tariffs on the import of Chinese TiO₂. While pricing remained challenged in the fourth quarter, market dynamics are changing. TiO₂ prices are improving as a result of price increase announcements that went into effect in the first quarter in addition to a favorable [sic] mix benefit we expect to see from sales into higher priced regions.'

²⁷⁷

632. Force majeure events and downtime are a feature of complex production processes that involves hazardous substances. They are insufficient in their financial impact to break the causation of injury in this investigation.

G2.3.6 Vertical integration

633. The vertical integration of the applicant is raised by the CNCIA as potentially impacting upon the causation of injury. '[...] the S&P downgrade concerns Tronox Holdings plc, not Tronox Pigment UK Limited. It also refers to broader group-level and market-wide factors, including weaker demand, oversupply, weak TiO₂ and zircon pricing, weak pigment and zircon volumes, leverage and interest costs. That evidence shows financial pressure at group level, but it does not establish that Chinese Rutile TiO₂ imports into the UK negatively affected the Applicant's finance costs, liquidity position or cash-flow situation during the POI.'

²⁷⁸

634. The applicant has responded to this point, stating 'To the contrary, the Tronox Group has shielded the Applicant from worse injury. The Tronox Group has continued to keep the Applicant in business despite sustained losses caused by dumped Chinese Rutile TiO₂.'

²⁷⁹

635. The TRA have concluded that the vertical integration of the applicant is not abnormal for the titanium dioxide industry, whereby the majority of large international producers have some level of vertical integration, including the sampled exporters in this investigation. The TRA finds that vertical integration is a business strategy which is, and should, be open to producers without precluding injury or impacting causation.

²⁷⁶ [\[SMM Titanium Express\] LB Group's subsidiary LB Xiangyang Titanium Indu - Shanghai Metals Market \(SMM\)](#), accessed 7 September 2026

²⁷⁷ PR Newswire, [Tronox Announces Closure of its Pigment Plant in China and Releases Selected Preliminary Fourth Quarter 2025 Financial Results](#), accessed 7 September 2026

²⁷⁸ CNCIA, Comments on the Application and Initiation of investigation, [General-publication---Submission-\(from-an-interested-party\)_SD-0000067067-Y7D0.pdf](#), page 20, accessed 7 September 2026

²⁷⁹ Tronox, Response to CNCIA comments, [Trade Remedies Authority | AD0086_1003](#), pages 8-9, accessed 7 September 2026



G2.3.7 Venator administration

636. The CNCIA submit that there are alternative explanations, not the dumped goods concerned, that have caused Venator's administration '[...]' such as increased competition, rising costs, global TiO₂ market conditions and Venator-specific financial pressures [...].'²⁸⁰ The CNCIA go onto emphasis this argument by highlighting the '[...]' sustained financial pressures and challenging market conditions globally in the TiO₂ manufacturing sector.'²⁸¹
637. The applicant has responded to the CNCIA's claim stating '[...]' Venator was driven into bankruptcy by the same dumping of Chinese Rutile TiO₂ that is causing material injury to the Applicant [sic].'²⁸²
638. The TRA notes that at the time Venator announced its administration, it made a press release stating that the administration '[...]' follows sustained financial pressures and challenging market conditions experienced globally in the titanium dioxide manufacturing sector.'²⁸³ The TRA does not have any further detail regarding the causes of Venator's administration, as it has not participated in this investigation.
639. In the injury assessment, data relating to Venator has been included in the volume effects assessment and some of the economic factor assessments. The price effects assessments and the other factors do not reference, or use, data relating to Venator. It is appropriate to consider Venator in the volume effects and economic factor assessments as Venator was a significant part of UK industry that entered into administration during the IP. Whilst the TRA does not know the causes of that administration, Venator states that it has been caused by sustained financial pressures and challenging market conditions.
640. Increased competition, rising costs and global titanium dioxide market conditions are the conditions in which all of the titanium dioxide industry operates, they are not specific to Venator, they are related to a global overcapacity to produce titanium dioxide driven by increased capacities in the PRC, and they will have impacted producers globally. The CNCIA has not provided evidence of Venator-specific financial pressures that have been caused by factors other than the dumped goods. The TRA has therefore determined that there is no break in causation between the dumping of the goods concerned to the UK and the injury caused to UK industry, which Venator was part of for the vast majority of the IP.

²⁸⁰ CNCIA, Comments on the Application and Initiation of investigation, [Trade Remedies Authority | AD0086 S-0000011165-T4L9](#), pages 20-21, accessed 7 September 2026

²⁸¹ CNCIA, Comments on the Application and Initiation of investigation, [Trade Remedies Authority | AD0086 S-0000011165-T4L9](#), page 20, accessed 7 September 2026

²⁸² Tronox, Response to CNCIA comments, [Trade Remedies Authority | AD0086 1003](#), pages 8-9, accessed 7 September 2026

²⁸³ [Administrators from Alvarez & Marsal appointed to Venator Materials UK Limited – Venator](#), accessed 7 September 2026



G2.4 Causation: Other relevant factors

G2.4.1 Trade diversion

641. The CNCIA has claimed that the applicant's submissions in relation to duties in third country export markets is speculation and unsupported by any evidence.²⁸⁴ The TRA has considered the claims made by the applicant in relation to third country duties and assessed the relevant data. This assessment is set out above, at [G1.4.2](#), it finds that import volumes from the PRC have reduced in the third countries that have introduced duties that relate to imports of titanium dioxide from the PRC.

G2.4.2 Global manufacturing capacities

642. Finally, the CNCIA has submitted comments in relation to global manufacturing capacities. The CNCIA states that 'the Applicant [sic] presents a long table (Table 15) of non-Chinese capacity which has closed since 2007 in a bid to support its argument that there is significant overcapacity in China and to support its claims of threat of injury.'²⁸⁵ The CNCIA submission continues to provide examples of non-Chinese capacity that has closed and the reasons provided for those closures, which do not directly reference the PRC.

643. The applicant has responded by proving examples of instances where the closed global manufactures of titanium dioxide have referenced titanium dioxide from the PRC.²⁸⁶

644. The TRA has not, and is not required, to assess potential injury outside of the UK or possible reasons for it. We have determined that there is likely to be spare capacity to manufacture the goods concerned in the PRC that causes a threat of injury to the UK industry. Our assessment of spare capacity in the PRC (see [G1.4.2](#), above) is based upon reports from PRC industry bodies, and the confirmed investment plans of PRC producers. Whilst the closure of titanium dioxide manufacturing facilities globally may allow PRC producers to use more of their capacity and take market share that has been vacated, this is subject to other restrictions such as trade remedies duties and PRC specific tariffs in some third countries. There remains significant spare capacity to manufacture the goods concerned in the PRC, that is set to increase.

645. The closure of titanium dioxide manufacturing facilities in third countries does not reduce or remove the significant spare capacity to manufacture the goods concerned in the PRC that the TRA has identified leads to a threat of material injury to the UK industry. The causes of closed production facilities in third countries are not directly

²⁸⁴ CNCIA, Comments on the Application and Initiation of investigation, [General-publication---Submission-\(from-an-interested-party\)_SD-0000067067-Y7D0.pdf](#), page 21, accessed 7 September 2026

²⁸⁵ CNCIA, Comments on the Application and Initiation of investigation, [General-publication---Submission-\(from-an-interested-party\)_SD-0000067067-Y7D0.pdf](#), page 21, accessed 7 September 2026

²⁸⁶ Tronox, Response to CNCIA comments, [Trade Remedies Authority | AD0086_1003](#), page 10, accessed 7 September 2026



relevant to the causes of injury to UK industry, and it does not have an impact, or break, the causation of injury to UK industry from the goods concerned.

G2.5 Causation and non-attribution: Conclusion

646. The TRA assessed the causal link between the dumped imports from the PRC and the threat of injury to the UK industry. We did not find that any of the submitted factors were sufficient to break causation, either individually or considered as a collective. There are no other factors, known by the TRA, that affect the causation of the threat of material injury that UK industry is experiencing.

G3. Injury margin

647. The injury margin is the extent at which the UK industry is being injured. The default method is to base the injury margin for each exporter on its underselling margin. This is calculated by comparing a benchmark UK price (the target price) with the import price (the landed price). The target price is the price that a UK producer would expect to sell its like goods at if it were not being affected by the dumped goods. This method was used to calculate an injury margin for each cooperating exporter.

648. The TRA calculated the injury margin for non-sampled cooperating exporters. This is the same as the injury margin calculated for the sampled, cooperating exporter group. The sampled, cooperating margin is the same as the non-sampled cooperating margin because there is only one cooperating margin that has been calculated for the whole of LB Group, and so it is not possible to calculate an average of one duty to apply to the non-sampled cooperating exporters.

649. In accordance with regulation 38 of the Regulations, the TRA calculated a residual injury margin for overseas exporters where it has not determined an individual dumping amount and the exporter is not a non-sampled overseas exporter within the meaning of regulation 37 of the Regulations. This is the same as the largest injury margin calculated for an individual exporter within the sampled, cooperating exporter group.

G3.1. Target price

650. The target price is the price that a UK producer would expect to sell its like goods at if it were not being affected by the dumped goods.

651. The target price was calculated by using the UK industry cost of production for the like goods, adding its AS&G costs, and applying a normal rate of profit.

652. Submissions have been made to this investigation in relation to a normal rate of profit. The applicant's application for the investigation suggested a 20% rate of normal profit,



justified by reference to the 10 best performing rutile titanium dioxide plants outside of the PRC in 2021 and 2024.²⁸⁷

653. The CNCIA commented that they doubt that the applicant could have been profitable in the absence of dumped imports, and requests that the rate of profit be based upon the applicant's own performance in the recent past.²⁸⁸ The applicant responded by stating that markets outside of the PRC have similar characteristics to the UK market, and that its profit margins on UK sales prior to the IP were in line with the submitted 20% figure.²⁸⁹ The TRA notes that it has not seen this data, as we do not routinely request data prior to the IP.

654. The TRA considered these submissions and set the normal rate of profit at 17.76% (profit margin) in this instance, which was based on the rate of profit achieved by UK manufacturers of chemicals and chemical products in 2024 (the most recent year available).²⁹⁰ The TRA determined this as an appropriate indicator of the actual level of profit that UK industry could achieve going forwards in the absence of dumped imports (above de minimis levels from the PRC).

G3.2. Landed price

655. The landed price is the price of the goods concerned when they arrive at the UK port. It equates to the CIF import price plus any relevant import duties and other costs associated with import.

656. The TRA calculated the landed price by using the CIF UK export price of the sampled co-operating overseas exporters (the LB Group companies). The TRA merged PCNs from the exporters, as the goods concerned manufactured using differing production methods or with different purities are in competition with UK like goods. Sales data was provided by the LB Group exporters in a mixture of currencies and were converted to pounds sterling for the purposes of comparison using monthly exchange rates in accordance with the HMRC guidance for calculating customs values.²⁹¹

657. The transactions from the LB Group exporters were a mixture of sales to independent parties and sales to the related importer, BEL, provided with CIF values. The TRA added an allowance for post-importation costs (customs duties, port charges and storage fees) to convert the CIF value sales to landed UK prices, this allowance was the weighted average cost of importation as submitted by BEL that was subject to verification activities.

²⁸⁷ Tronox, Application, [Trade Remedies Authority | AD0086 S-0000009706-J0Q3](#), accessed 21 September 2026

²⁸⁸ CNCIA, Comments on the Application and Initiation of investigation, [General-publication---Submission-\(from-an-interested-party\) SD-0000067067-Y7D0.pdf](#), accessed 21 September 2026

²⁸⁹ Tronox response to CNCIA comments, [Trade Remedies Authority | AD0086 1003](#), accessed 21 September 2026

²⁹⁰ Office for National Statistics, Non-financial business economy, UK: Sections A to S, <https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/datasets/uknonfinancialbusinesseconomyannualbusinesssurveysectionsas>, accessed 10 August 2026

²⁹¹ [Converting foreign currency amounts to include in the customs value - GOV.UK](#), accessed 7 September 2026



G3.3. Residual injury margin

658. In accordance with regulation 38(3) of the Regulations the TRA has determined the residual injury margin. In this case, the residual injury margin has been set based on the data from the sampled, cooperating exporters (the LB Group exporters) who are the only exporters to provide a questionnaire response, and primary data, to this investigation. The TRA has set the residual injury margin as the highest injury margin calculated for an individual exporter in the LB Group, LB Lufeng.

G3.4. Injury margins

659. The injury margins are shown in the table below:

Overseas exporter/producer	Injury margin (%)
Cooperating, sampled exporters: Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD.	99.89%
Cooperating, non-sampled exporters: Shandong Doguide, Pangang Group, Kunming Donghao, Yibin Tianyuan Haifeng Hetai, Guangdong Huiyun Titanium Industry Corporation, Panzhijia Darui Technology, Panzhijia Dongfang Titanium Industry, Ningbo Xinfu Titanium Dioxide, Anhui Gold Star Titanium Dioxide (Group)	99.89%
All other overseas exporters (residual injury margin):	114.99%

Figure 41 Injury Margins



Section H: Lesser duty rule, alternative measures and forms of measures

660. The TRA calculated anti-dumping amounts and injury margins for the sampled cooperating exporters of LB Group, for non-sampled cooperating exporters, and for all other overseas exporters. In accordance with paragraph 18(7) of Schedule 4 to the Act, and regulation 36 of the Regulations, the recommended import duty should be set at a level that does not exceed the anti-dumping amount, in relation to the goods as determined by the TRA as part of its final affirmative determination, or the amount which the TRA is satisfied would be adequate to remove the injury to the UK industry in the goods if that amount is less than the anti-dumping amount.
661. Under paragraph 17(8A) of Schedule 4 to the Act, where the TRA considers that there are two or more options which it could recommend under sub-paragraph (3) it may give the SoS each of those options as part of its recommendation. Regulation 61A(b) of the Regulations requires the TRA to consider giving two or more options where the TRA considers it appropriate.
662. Under paragraph 17(8D) of Schedule 4 to the Act, where the TRA gives the Secretary of State options, it must:
- (a) Give the Secretary of State its reasons for including each option, and
 - (b) inform the Secretary of State which option it prefers and why.

H1. Consideration of products used in the production of white graphic ink

663. The TRA considered whether to recommend that the four ten-digit commodity codes that specify an end use of white graphic ink production (3206 1100 80, 3206 1100 85, 2823 0000 80 and 2823 0000 83) could be omitted from the measure. This was in response to the submissions made by interested parties, discussed in [D3.1. Ink grade rutile titanium dioxide](#), above, in which exporters, importers and manufacturers of ink in the UK requested that a measure not be applied to products that are used in ink manufacturing.
664. We concluded that it was not possible to omit these commodity codes without significantly increasing the risk of injury to UK industry and/or potentially undermining the effectiveness of the anti-dumping duties that are recommended for the other, non-ink specific, commodity codes.
665. Omitting the ink use commodity codes would increase the risk of circumvention because there are a significant number of products produced in the PRC which have a primary intended use other than the manufacturing of inks, which are however still recommended for use as a secondary application for the production of graphic inks for printing. Volume analysis over the POI indicates that these goods are currently declared



in this way to an extent that far exceeds the TRA's estimate of the likely demand by ink manufacturers alone.

666. Additionally, there are challenges in the complexity of the rutile titanium dioxide supply chain in the UK, where end users are often not those who import the goods concerned. Providing proof of and confirming end use for users and HMRC would be technically difficult and prohibitively costly. A further complication arises from the fact that there are no immediately observable characteristics which differentiate standard and dedicated ink grade rutile titanium dioxide.

H2. Alternative option and form of measure

667. In this investigation, the intended recommended duty is based on the dumping margin calculated (see above, [F5. Dumping margin](#)). The TRA has decided that it is appropriate to consider alternative measures and the form of measures that are subject of our recommendation. We have decided that our preferred option is for the measure to be a 5-year mixed duty, consisting of fixed and *ad valorem* rates, the highest of which will be the duty collected. The TRA will also recommend a 5-year *ad valorem* duty as a secondary option.

668. A mixed duty is the TRA's preferred option as it is assessed as providing better protection from dumped imports to UK industry. PRC exporters of the goods concerned are associated with companies in the UK, and a mixed duty that includes a fixed element reduces the risk that artificial transfer pricing could minimise *ad valorem* duty payments.

669. The TRA has calculated the preferred option of a mixed duty starting with the total amount of dumping calculated in the POI for the cooperating exporters. The fixed element of the mixed duty is a weighted average dumping amount per volume unit expressed in GBP. The *ad valorem* element of the mixed duty is the weighted average dumping amount per volume unit expressed as a percentage of the declared CIF price.

670. We have calculated the secondary option of an *ad valorem* duty in the same way as the *ad valorem* element of the mixed duty. That is the weighted average dumping amount per volume unit expressed as a percentage of the declared CIF price.

Overseas exporter/producer	Preferred option - Duty amount
Cooperating, sampled exporters: Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD.	48.29% <i>ad valorem</i> , minimum of £0.66/KG



Cooperating, non-sampled exporters: Shandong Doguide, Pangang Group, Kunming Donghao, Yibin Tianyuan Haifeng Hetai, Guangdong Huiyun Titanium Industry Corporation, Panzhuhua Darui Technology, Panzhuhua Dongfang Titanium Industry, Ningbo Xinfu Titanium Dioxide, Anhui Gold Star Titanium Dioxide (Group)	48.29% <i>ad valorem</i> , minimum of £0.66/KG
All other overseas exporters (residual amount)	63.66% <i>ad valorem</i> , Minimum of £0.87/KG

Figure 42 Recommended mixed duty rates

Overseas exporter/producer	Secondary option - Duty amount
Cooperating, sampled exporters: Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD.	48.29% <i>ad valorem</i>
Cooperating, non-sampled exporters: Shandong Doguide, Pangang Group, Kunming Donghao, Yibin Tianyuan Haifeng Hetai, Guangdong Huiyun Titanium Industry Corporation, Panzhuhua Darui Technology, Panzhuhua Dongfang Titanium Industry, Ningbo Xinfu Titanium Dioxide, Anhui Gold Star Titanium Dioxide (Group)	48.29% <i>ad valorem</i>
All other overseas exporters (residual amount)	63.66% <i>ad valorem</i>

Figure 43 Recommended ad-valorem duty rates



Section I: Economic interest test

I1. Introduction

671. The aim of the EIT is to determine whether applying an anti-dumping amount on the goods concerned, imported from the PRC is in the wider economic interest of the UK. This test is presumed to be met unless we are satisfied that the application of the remedy is not in the economic interest of the UK.
672. In accordance with paragraph 25 of Schedule 4 to the Act, the EIT is met in relation to the application of an anti-dumping remedy if the application of the remedy is in the economic interest of the UK.
673. In line with paragraph 25 of Schedule 4 to the Act, the TRA has taken account of the following factors in conducting the EIT:
- The injury caused by dumping of the goods to the UK industry in the like goods and the benefits to that UK industry in removing that injury;
 - the economic significance of affected industries and consumers in the UK;
 - the likely impact on affected industries and consumers in the UK;
 - the likely impact on particular geographic areas, or particular groups, in the UK;
 - the likely consequences for the competitive environment, and for the structure of markets for like goods, in the UK; and
 - such other matters as the TRA considers relevant.

I1.1. Evidence Base

674. In addition to the evidence set out above ([C2. Participation in the investigation](#)) the TRA conducted a business and consumer survey and received 19 responses which contained information relevant to the EIT. These responses were from:
- a) 13 downstream businesses
 - b) six consumers.

I2. Injury caused by dumping and benefits to UK industry in removing injury

675. [Section G: Injury](#) sets out the TRA's assessment of injury to the UK industry. Having considered the volume and price effects of the dumped imports, the relevant economic factors and other evidence in the round, the TRA concludes that material injury has not yet occurred, but that it is clearly foreseen and imminent due to changes in circumstances.



676. This threat of future injury is likely to put the market participation of some or all UK producers at risk. As a result, removing this injury is likely to result in benefits to UK industry.

13. Economic significance of affected industries and consumers in the UK

677. The TRA has identified the following groups in the UK which could potentially be affected by the proposed anti-dumping measure:

- upstream suppliers of raw materials and utilities used to manufacture rutile titanium dioxide;
- UK producers of rutile titanium dioxide;
- importers & distributors of the rutile titanium dioxide;
- downstream businesses using rutile titanium dioxide in coatings, plastics, paper and laminates, inks, fibres, pharmaceuticals and other specialist applications; and
- consumers purchasing final goods containing rutile titanium dioxide.

678. The TRA has identified businesses in each of these groups and looked at a selection of them because it was not feasible to investigate all known businesses given case time constraints. For each selected business, the TRA looked at the five most recent published accounts, where available. The figures presented below are averages across the IP (1 January 2022 to 31 December 2025).

13.1. Upstream businesses

679. The selected upstream businesses supply inputs including liquefied natural gas, chlorine and coke. The TRA is aware of five UK businesses in this sector, who publish full financial accounts and has chosen to sample three. All known upstream firms except for providers of electricity and water have been sampled as their market exit is regulated, their presence in the market is unlikely to be affected by the decision on whether to impose a measure.

680. The TRA assessed the sales of relevant inputs as not very important to the sector. Additionally, the group is assessed as having low vulnerability to negative economic shocks.

681. Relevant sales to the UK producer represented approximately 0.9% of the selected businesses' weighted average turnover. The selected group had estimated GVA of £298 million per annum, turnover of £3.9 billion and a weighted average EBITDA margin of 7%.

13.2. UK producers

682. In addition to the applicant, the TRA has identified one other UK producer of rutile titanium dioxide, Tioxide Materials Limited, who began production on the former Venator



plant in Greatham at reduced levels in August 2026.²⁹² Venator Materials UK Limited entered administration, scaled down production and eventually ceased UK production of the like goods in the final months of the POI. Due to uncertainty in levels of current and future production, and a lack of available information we have based our assessment on the only cooperating and active UK producer at the end of the POI – Tronox Pigment UK Limited.

683. The like goods accounted for approximately 99% of the applicant's turnover. The selected producer had average employment of 357, estimated GVA of £45 million per annum, turnover of £296 million and a weighted average EBITDA margin of 4%. The TRA assessed rutile titanium dioxide as very important to the UK producer and the producer as having low to medium vulnerability to negative economic shocks.

684. We assessed a range of publicly available financial indicators for the applicant.²⁹³ These company-wide indicators do not show imminent insolvency, but do not rule out the company remaining viable while ceasing UK production of the like goods if that activity becomes unprofitable.

13.3. Importer distributors

685. The selected importer group had average employment of 694, estimated GVA of £89 million, turnover of £627 million and a weighted average EBITDA margin of 8%. The importance of the goods varied significantly between importers.

686. The TRA has assessed that the sector has a low vulnerability overall, while recognising that the impact may be concentrated on PRC-connected importers that are more dependent on rutile titanium dioxide.

13.4. Downstream businesses

687. The downstream sector consists of approximately 170 businesses. The TRA has chosen nine of those as a sample. The sample includes:

- Customers of the UK producer with significant purchases;
- Companies who engage in both domestic supply of the good subject to review and imported supply;
- Smaller and larger companies;
- A number of known high and medium transaction frequency importers; and
- A range of end uses for TiO₂.

688. The selected downstream businesses had average employment of 6,385, estimated GVA of £381 million per annum, turnover of £1.37 billion and a weighted average

²⁹² Tioxide Materials Limited media centre <https://tioxide.com/media-centre/tioxide-restarts-tio2-plant-in-uk/>

²⁹³ Financial indicators include: Total current assets, total long term assets, total current liabilities, long term debt, retained earnings, sales revenue, earnings before profit and taxes, profit for the year before tax, inventory and depreciation.



EBITDA margin of 7%. Rutile titanium dioxide purchases represented approximately 6% of the relevant weighted turnover as such we consider that rutile titanium dioxide is somewhat important to the group. We have assessed the sector as having medium vulnerability because most selected businesses appeared financially robust, while some showed greater exposure to negative shocks.

689. The downstream group is diverse. Coatings and plastics are the largest uses of rutile titanium dioxide, while paper, ink, and specialist applications account for smaller shares. Rutile titanium dioxide may be more important for particular product lines especially in circumstances where products require opacity, whiteness and ultraviolet resistance. In these products rutile titanium dioxide makes up a larger share of the cost of a final product whereas when considering product lines on aggregate, for most businesses the like goods make up a relatively small share of the cost of a final product.

690. In our assessment we have taken particular note of ink manufacturers. In evidence submitted to the TRA, ink manufacturers have identified some product lines which require specialist grades of rutile titanium dioxide with distinct technical requirements, which are not produced in the UK. We discuss this in more detail in [Section 17.1 Ink manufacturers](#).

13.5. Consumers

691. Rutile titanium dioxide is predominantly an intermediate input, so consumers are affected indirectly through the price and availability of final goods such as paints, plastics, flooring, packaging and printed products. Three substantive consumer survey responses were received.

692. The limited number of responses submitted is not a representative sample. As a result, the TRA can only draw limited conclusions from the survey.



13.6. Summary Table

	Upstream Businesses	UK producer	Importers	Downstream businesses
Total known businesses	5	2*	6	170
Total selected businesses for analysis	3	1	4	10
Total average employment	188	357	694	6,385
Total GVA of selected businesses (GBP thousands)	£297,810	£45,350	£89,456	£380,889
Total turnover of selected businesses	£3,901m	£296m	£627m	£1,372m
Weighted average EBITDA margin for segment sample (%)	7%	4%	8%	7%
Importance of like goods as % of weighted average turnover of sampled businesses	0.9%	99%	38%	6%
Assessment of importance of the like goods to this segment	Not very important	Very important	Very important	Somewhat important
Assessment of vulnerability to negative economic impacts of Businesses in this Group	Low vulnerability	Low / medium vulnerability	Low vulnerability	Medium vulnerability

Figure 44 Summary table for the significance metrics for affected industries (over the IP) ²⁹⁴

²⁹⁴ Methodology: GVA was estimated by summing operating profits, employment costs, depreciation, and amortisation. Average EBITDA margin was estimated by dividing the sum of operating profit, depreciation, and amortisation by turnover. The assessment of vulnerability to negative economic impacts was made by looking at financial data from the most recent years.



14. The likely impact on affected industries and consumers in the UK

693. This section assesses the overall impact that the proposed measure might have on the affected groups identified. We do this by looking at how prices and quantities of goods in the supply chain might change if the proposed measure is not imposed ('no measure' scenarios), and if it were imposed ('measure' scenarios). We assess a range of scenarios due to the uncertainty around the effects of the measure. The likely impact is expected to be within the range of these future states.

14.1. Evidence and key assumptions

694. Costs, prices and sales of rutile titanium dioxide for the UK producer are sourced from questionnaire responses. Due to a lack of evidence on future price trends, we have assumed that prices will remain constant, at levels observed in the POI, over time. We assumed that a high proportion of any duty is passed onto market segments downstream of production (between 75% and 100%). This aligns with internal research by the Department for Business, Innovation, Science and Trade.

695. For volumes and values of the goods concerned for PRC producers we relied on a mixture of HMRC's raw customs declaration data and data from questionnaire responses from cooperating exporters and connected importers.

696. For volumes and values of the goods concerned from third country producers, the TRA has used HMRC's raw customs declaration data alongside OTS data.

697. We assumed that producer marginal costs (costs for each additional metric tonne of rutile titanium dioxide produced) are equivalent to their variable costs in scenarios where the threat of future injury does not materialise. In scenarios where the threat of future injury does materialise, we assumed that producer marginal costs are equal to their total costs as there is a risk that they would exit the market entirely. We assumed raw materials, energy and labour were variable costs while maintenance, and other capital costs were fixed.

698. In [Section H](#), the TRA outlined our recommendation for a mixed duty, in which either a fixed duty or *ad valorem* duty applies, whichever is higher. As both duties are calculated to be equal at current prices, we have only used the *ad valorem* duty in our analysis. The effective trade weighted dumping margin that we have used in our impacts analysis is: 49.18%

699. The TRA's assumption of price elasticity of demand (PED) for rutile titanium dioxide was based on the work of Ghodsi et al. (2016).²⁹⁵ In the different quantification

²⁹⁵ Ghodsi, M., Grübler, J. and Stehrer, R. (2016) Import Demand Elasticities Revisited, The Vienna Institute for International Economic Studies, Wiener Institut für Internationale Wirtschaftsvergleiche, available at: <https://wiiw.ac.at/import-demand-elasticities-revisited-p-4075.html>.



scenarios the TRA used PED for titanium dioxide ranging from slightly inelastic: -0.8, to slightly elastic: -1.2 PED).

14.2. Expected impacts if the measure is not implemented

700. We considered two different scenarios to show the impacts of not imposing a measure.

Scenario B1: The threat of material injury does not materialise. UK producer continue to operate in the current trading environment.

Scenario B2: The threat of material injury materialises. UK producer chooses to leave the market.

701. As discussed in [Section 13.2 UK producers](#), to assess the likelihood of market exit, the TRA conducted an assessment based on a number of financial indicators for the sampled UK producer.²⁹⁶ The assessment did not conclude that the applicant was particularly vulnerable to imminent market exit, however we model scenario B2 to capture likely effects if the foreseen injury materialises.

14.2.1. Expected impacts if the measure is implemented

702. We considered two scenarios to show the potential effects of a measure being imposed. It is unlikely that any of these scenarios represent the exact impact of the proposed measure. The TRA considers scenario A2 to be a more likely outcome than scenario A1 but actual impacts are likely to fall somewhere between them.

Scenario A1: All UK producer, PRC suppliers and rest of world (ROW) suppliers stay in the market and raise their prices by the value of the measure. Market shares remain constant.

Scenario A2: UK and third country producers do not increase prices, PRC producers increase prices by the level of the measure. PRC loses market share to UK and ROW

703. In scenario A2, the UK producer and ROW suppliers gain market share lost by the PRC but PRC sales of rutile titanium dioxide suitable for inks go to ROW suppliers only. As UK producer and ROW producer prices are substantially more expensive than rutile titanium dioxide from the PRC they opt not to increase prices as a result of the measure.

14.3. Estimated impacts

704. We estimated welfare impacts for each scenario by looking at the change in UK producer surplus and consumer surplus. Producer surplus includes benefits for

²⁹⁶ The following financial indicators were calculated for all UK producers for the last five years where data was available: Altman Z-score, Taffler Z-score, debt to equity ratio, debt to assets ratio, current ratio, quick ratio and working capital to total assets.



upstream groups. Downstream consumer surplus includes all consumers of rutile titanium dioxide, whether this be in the form of downstream firms which use rutile titanium dioxide directly as an input; or indirectly, where products containing the goods concerned are consumed by either end consumers or firms performing subsequent downstream activities.

705. Producer surplus is the benefit producers gain when they sell a product, e.g. profit; and consumer surplus is the benefit users gain when they consume a product. Change in surplus was estimated using the following formulae:

$$\text{Producer Surplus} = (\text{Price per unit} - \text{Marginal cost}) * \text{Quantity sold}$$

$$\Delta \text{Consumer Surplus} = \frac{1}{2} * (Q_{\text{Tariff}} + Q_{\text{NoTariff}}) * (P_{\text{Tariff}} - P_{\text{No Tariff}})$$

Where:

$$\text{Tariff} = \text{Quantity of rutile titanium dioxide consumed with a tariff}$$

$$\text{No tariff} = \text{Quantity of rutile titanium dioxide consumed without a tariff}$$

706. Figure 45 Estimated annual welfare impact of the proposed measure, £m below shows the welfare impacts for each of the modelled scenarios. It estimates welfare impacts based upon the rate of the measure.

Counterfactual	B1	B2
Scenario A1		
UK Producer	£4.2m to £10.5m	£8.7m to £13.3m
UK Downstream	£-61.5m to £-44.7m	£-61.5m to £-44.7m
Overall impact	£-51.4m to £-36.7m	£-48.2m to £-33.9m
Scenario A2		
UK Producer	£1.2m to £1.2m	£0.8m to £0.8m
UK Downstream	£-15.1m to £-12.8m	£-15.1m to £-12.8m
Overall impact	£-13.9m to £-11.6m	£-14.3m to £-12m

Figure 45 Estimated annual welfare impact of the proposed measure, £m

14.3.1. UK producer and UK upstream businesses

707. We estimate that implementing the measure could provide the UK producer and the UK upstream with welfare benefits of between £13.3m and £0.8m per year. The lowest impacts are seen in scenario A2, where the UK producer and ROW producers do not raise prices, but capture market share from PRC producers. The highest impacts are seen in scenario A1 where all producers remain in the market and increase their prices by the level of the measure.



708. UK producers and upstream firms enjoy a smaller welfare benefit in counterfactual scenario B2 as compared to B1. This is because if a measure is not imposed and the threat of injury materialises, the UK producer leaves the market under B2 but not under B1. As such, the measure benefits producers more under B1.

14.3.2. UK downstream businesses, importers, & consumers

709. We estimate that implementing the measure could cost the UK downstream businesses, importers, and consumers between £61.5m and £12.8m per year in welfare. The smallest impacts are seen in scenario A2, where UK and third country producers do not raise prices, but capture market share from PRC producers. The highest impacts are seen in scenario A1 where all producers remain in the market and increase their prices by the level of the measure.

14.3.3. Overall welfare impacts

710. Overall, implementing a measure is likely to lead to a welfare loss of between £51.4m to £11.6m per year. The average welfare impact across all scenarios is a cost of £27.8m per year. The worst scenario for overall impacts is A1, where all producers retain existing market shares, increasing their prices in line with the measure applied.

15. The likely impact on particular geographic areas, and particular groups

15.1. Likely impact on particular areas

711. We have assessed geographic impacts using employment and indicators of deprivation at a Travel to Work Area (TTWA) level for Great Britain.

712. The data used for the geographic analysis was sourced through questionnaire responses, Dun & Bradstreet and ONS estimates of working age population by TTWA.

713. To estimate employment by site, the TRA identified all known immediate subsidiaries of the companies selected in its analysis alongside their registered office address and known employment. Where sites were listed without employment figures, we assumed that unallocated employees were distributed equally between sites. Total employment was used for businesses where site employment was not available.

714. The TRA has established a threshold of less than 1% of the working age population within a TTWA to consider whether an industry is particularly significant to a geographic area and the implications of jobs being lost or gained. In our analysis none of the sampled businesses exceeded this threshold regardless of whether businesses were considered collectively or individually.

715. The UK producer's site is in the Grimsby TTWA (the only UK producer operating at the end of the POI) and accounts for approximately 350 jobs, equivalent to approximately 0.3% of the local working-age population. Grimsby performs relatively



poorly on several socioeconomic indicators. We therefore recognise the local employment context and the benefit that the measure could have, even though the quantitative threshold is not met.

716. On the evidence available, the TRA does not consider that imposing or not imposing the measure would have a disproportionately negative impact on any particular geographic area. The benefit of retaining skilled manufacturing employment in the Grimsby area is nevertheless relevant to the overall balance.

15.2. Likely impact on particular groups

717. The TRA considered whether a measure would have a disproportionate impact on groups including those sharing protected characteristics under the Equality Act 2010. We found no evidence to suggest that any particular protected group would be disproportionately affected.

16. The likely consequences for the competitive environment and for the structure of markets for goods in the UK

718. The TRA considered the likely effects of imposing and not imposing a measure on the number and range of suppliers, the ability and incentives of suppliers to compete, and the choices available to purchasers and consumers. In general, the evidence did not indicate that a measure would significantly alter competition in the overall UK rutile titanium dioxide market.
719. For UK producers, a measure would increase the likelihood that domestic production remains in the market and would therefore preserve an additional source of supply. A measure would reduce the competitiveness of PRC imports, but the UK market would continue to be supplied by the UK producers, PRC producers and producers from the rest of the world. Most importers are diversified and are not expected to exit the wider distribution market as a result of the measure.
720. A measure would reduce the ability of downstream businesses to purchase ink suitable rutile titanium dioxide. UK ink manufacturers have access to limited specialist supply and compete with EU producers that would not be subject to the same UK measure. Applying the measure to dedicated ink grade rutile titanium dioxide could therefore weaken the ability of UK ink manufacturers to compete and could reduce the attractiveness of locating white-ink production in the UK.

17. Other factors the TRA considers relevant

17.1. Ink manufacturers

721. The TRA has considered ink manufacturers separately in its downstream sample because some white graphic inks use specialist grades with distinct technical requirements. There are two ink manufacturers within the TRA's sample which publish accounts suitable for our assessment; however a significant proportion of the UK ink



manufacturing industry are small to medium enterprises and do not publish full accounts.

722. Evidence submitted to the investigation indicated that sulphate-produced grades are preferred because small, less abrasive particles reduce deterioration of printing press cylinders.²⁹⁷ The UK producers do not manufacture dedicated ink-grade rutile titanium dioxide, although some chloride-produced products are suitable for some manufacturers of certain inks.
723. Evidence submitted as part of this investigation indicated that suitable specialist supply outside the PRC is available from a limited number of European facilities and that there have been supply issues.²⁹⁸ Submissions and survey evidence indicated that a measure could increase costs and weaken the competitiveness of UK ink manufacturing relative to EU production. One downstream business also identified a risk that white-ink production could relocate.²⁹⁹
724. Of the two ink manufacturers sampled, the TRA has assessed the ink sector in isolation as not especially vulnerable to economic shocks, with rutile titanium dioxide being only somewhat important to the firms. We expect a measure will affect specific product lines more than others where high concentrations of rutile titanium dioxide are required such as white graphic inks for printing.

18. Form of measure

725. In the EIT, the TRA also considers the form of measure being recommended, and in particular whether any changes to the length, scope or type of measure would minimise the negative impacts of the measure on some parties while retaining the overall benefits.
726. Under paragraph 17(8E) of Schedule 4 to the Act, where the TRA makes a recommendation containing multiple options, it must advise the Secretary of State whether and why it considers that applying an anti-dumping amount under each option would meet the economic interest test.
727. As outlined in [Section H](#), the TRA intends to recommend two options:
- 1) *The Secretary of State impose a mixed duty for a period of five years on the goods concerned subject to the final alternative determination.*
 - 2) *The Secretary of State impose an ad-valorem duty for a period of five years on the goods concerned subject to the final affirmative determination.*

²⁹⁷ Anonymous submission to the public file, [Trade Remedies Authority | AD0086 S-0000009935-L3N0](#), accessed 21 September 2026

²⁹⁸ Note to the public file – Survey responses, [Trade Remedies Authority | AD0086 1123](#), page 6, accessed 21 September 2026

²⁹⁹ Note to the public file – Survey responses, [Trade Remedies Authority | AD0086 1123](#), page 6, question 22, accessed 21 September 2026



728. In our EIT assessment we consider that both options presented are appropriate, as in our analysis both duties are calculated to be equal at current prices, downstream costs would be no higher under a mixed duty as opposed to an *ad valorem*. In the event that there is further price depreciation in rutile titanium dioxide from the PRC there would be a reduction in costs for the downstream sector in option two; however, any gains in producer surplus would also be reduced.
729. Additionally, the TRA considered whether the scope or form of the measure could be specified to minimise the negative effects on some business sectors while protecting the UK industry. Our analysis indicated that removing dedicated ink-grade rutile titanium dioxide from the scope of the measure would reduce the estimated downstream loss and have limited direct effect on the UK producer because a dedicated ink grade is not manufactured in the UK
730. We explored two additional possibilities in respect of the implementation of the proposed measure:
- a) Allowing for rutile titanium dioxide used in the production of white graphic inks for printing to be omitted from the measure; and
 - b) Altering the commodity codes covered by the measure, including the exclusion of all codes which specify the use case: for use in the production of white graphic inks for printing
731. Our understanding is that both have significant drawbacks. In (a) there are challenges in the complexity of the rutile titanium dioxide supply chain in the UK, where end users are often not those who imported the goods concerned. Providing proof of and verifying end use for users and HMRC, would be technically difficult, and prohibitively costly. Especially as there are no immediately observable characteristics which differentiate standard and dedicated ink grade rutile titanium dioxide.
732. In addition, there would be an increased risk of circumvention as we have identified a significant number of products produced in the PRC which have a primary intended use other than the manufacturing of inks, which are however still recommended for use as a secondary application for the production of graphic inks for printing. Volume analysis over the POI indicates that these goods are currently declared in this way to an extent that far exceeds the TRA's estimate of the likely demand by ink manufacturers alone.
733. These two latter issues also apply to (b). The implication of this is that whilst we believe excluding rutile titanium dioxide exclusively for use in the production of white graphic inks for printing from the scope of the measure would reduce negative downstream impacts on ink manufacturers, it's not possible to do this without increasing the risk of circumvention and associated injury to UK producers.

19. Conclusions

734. In accordance with paragraph 25 of Schedule 4 to the Act, the EIT is met if the application of the proposed measure is in the economic interest of the United Kingdom.



The test is presumed to be met unless the TRA is satisfied that applying the measure is not in the economic interest of the United Kingdom.

735. The TRA has determined that the UK industry faces a clearly foreseen and imminent threat of material injury from dumped imports of rutile titanium dioxide originating in the PRC. As set out in [Section G: Injury](#), the TRA has concluded that material injury has not yet occurred, but that injury is imminent and would be likely to materialise if a measure were not imposed.
736. Our assessment of economic significance found that the UK producer and upstream suppliers are of lower significance to the UK economy than downstream businesses. The downstream sector is diverse and economically significant, with sampled businesses employing approximately 6,400 people and generating an estimated £381 million in GVA annually. Consumers are affected indirectly through a wide range of products including paints, plastics, flooring, packaging and printed products.
737. In the impacts assessment, we found that the measure is likely to provide benefits to the UK producers and upstream suppliers, supporting the continued operation of UK production. However, the measure is also expected to increase costs for importers, downstream businesses and consumers. The greatest impacts are likely to be concentrated on importers closely connected to PRC supply chains and on manufacturers of white graphic inks that rely on specialist grades of rutile titanium dioxide not produced in the UK.
738. The TRA's quantitative analysis indicates that, across all modelled scenarios, the welfare gains accruing to the modelled UK producer are outweighed by welfare losses experienced by downstream businesses, importers and consumers. As a result, implementation of the measure is expected to lead to a net welfare loss overall. However, the magnitude of those losses varies substantially depending on how market participants respond to the measure.
739. A measure is likely to support employment in the Grimsby travel to work area (TTWA), where the sampled UK producer is situated. Nevertheless, the TRA did not identify evidence that either imposing a measure or not would result in disproportionate geographic impacts. The TRA also found no evidence that the measure would have a disproportionate impact on any group sharing protected characteristics under the Equality Act 2010.
740. In its assessment of competition, the TRA found that the overall structure of the UK rutile titanium dioxide market is unlikely to change significantly as a result of the measure. The market would continue to be supplied by UK, PRC and ROW producers. However, the TRA identified a risk that applying the measure to specialist ink-grade products could reduce the competitiveness of UK white-ink manufacturers, given the limited availability of alternative supply and the absence of domestic production of dedicated ink-grade rutile titanium dioxide.
741. The TRA also considered whether the form of the measure could be adjusted to mitigate these concentrated downstream impacts. While the evidence suggests that



separate treatment for dedicated ink-grade rutile titanium dioxide could reduce adverse effects on UK ink manufacturers while having limited direct effect on UK producers, the TRA has not yet identified a practical mechanism to implement such treatment without creating significant administrative challenges or risks of circumvention.

742. Having considered the evidence submitted by interested parties and all the factors listed in paragraph 25 of Schedule 4 to the Act, and in light of the presumption that anti-dumping measures are in the economic interest of the UK, the TRA considers that the negative impacts identified do not provide a sufficient basis to rebut that presumption. The TRA therefore concludes that the application of the proposed anti-dumping measure meets the EIT, under both options recommended by the TRA.



Section J: Intended final determination and recommendations

743. The TRA's intended final determination is set out below.

744. The TRA intends to make a final determination on imports of the goods concerned originating from the PRC as described in the notice of initiation that fall under the commodity codes:

- 2823 0000 10
- 2823 0000 30
- 2823 0000 80
- 2823 0000 83
- 3206 1100 10
- 3206 1100 30
- 3206 1100 80
- 3206 1100 85

745. The TRA has determined that the goods concerned that are the subject of the intended final determination have been or are being dumped into the UK and the dumped goods have caused a threat of material injury to a UK Industry in those goods. The TRA therefore intends to recommend to the Secretary of State that an anti-dumping measure is imposed.

746. In accordance with paragraph 18(6) of Schedule 4 to the Act, the TRA intends to recommend that the Secretary of State impose the lower of the two margins (the dumping margin) as the anti-dumping amount. Both the TRA's preferred option of a mixed duty, and secondary option of an *ad valorem* duty, are based on the dumping margin, which is lower than the injury margin.

747. The TRA's preferred option (see [H2. Alternative option and form of measure](#), above) is to intend to recommend that the Secretary of State impose a mixed duty for a period of five years on the goods concerned subject to the final alternative determination.

Overseas exporter/producer	Preferred option - Duty amount
Cooperating, sampled exporters: Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD.	48.29% <i>ad valorem</i> , minimum of £0.66/KG
Cooperating, non-sampled exporters: Shandong Doguide, Pangang Group, Kunming Donghao,	48.29% <i>ad valorem</i> , minimum of £0.66/KG



Yibin Tianyuan Haifeng Hetai, Guangdong Huiyun Titanium Industry Corporation, Panzhuhua Darui Technology, Panzhuhua Dongfang Titanium Industry, Ningbo Xinfu Titanium Dioxide, Anhui Gold Star Titanium Dioxide (Group)	
All other overseas exporters (residual amount)	63.66% <i>ad valorem</i> , Minimum of £0.87/KG

Figure 46 Recommended mixed duty rates

748. As a secondary option, the TRA intends to recommend that the Secretary of State impose an ad-valorem duty for a period of five years on the goods concerned subject to the final affirmative determination.

Overseas exporter/producer	Secondary option - Duty amount
Cooperating, sampled exporters: Lomon Billions Group (the LB Group): LB Sichuan Titanium Industry Co., LTD, Henan Billions Advanced Material Co., LTD, LB Lufeng Titanium Co., LTD, LB Xiangyang Titanium Industry Co., LTD, LB Group Co., LTD.	48.29% <i>ad valorem</i>
Cooperating, non-sampled exporters: Shandong Doguide, Pangang Group, Kunming Donghao, Yibin Tianyuan Haifeng Hetai, Guangdong Huiyun Titanium Industry Corporation, Panzhuhua Darui Technology, Panzhuhua Dongfang Titanium Industry, Ningbo Xinfu Titanium Dioxide, Anhui Gold Star Titanium Dioxide (Group)	48.29% <i>ad valorem</i>
All other overseas exporters (residual amount)	63.66% <i>ad valorem</i>

Figure 47 Recommended ad-valorem duty rates



Annex A: Interested parties and contributors

Summary of information received from interested parties and contributors to 21 September 2026.

No.	Interested party/Contributor	Information received	Party type
1	Tronox Pigment UK Limited	Application Registration form Comments on pre-sampling questionnaires Note to the public file regarding proposed representative third countries Comments on the importance of swift and strong action Response to LB Group's comments on particular market situation Questionnaire Annex Questionnaire Tronox response to LB Group comments on amortization Response to CNCIA Comments on the Application and Initiation of Investigation Response to anonymous importer/user's response to Tronox comments on pre-sampling questionnaires of 17 April 2026 New Chinese capacity TiO2 LFP battery materials	Applicant / UK Producer



		Response to Billion's Europe submission Response to Billions Europe's submission of 12 August Addendum	
2	The Ministry of Commerce of the People's Republic of China (MOFCOM)	Registration form	Foreign Government
3	LB Group Co. Ltd.	Registration form Request for exemption by the LB Group Representative Countries and Particular Market Situation Questionnaire Response to the Applicant's submission on representative country and particular market situation	Sampled Exporter
4	LB Lufeng Titanium Industry Co. Ltd.	Registration form Questionnaire	Sampled Exporter
5	LB Sichuan Titanium Industry Co. Ltd.	Registration form Questionnaire	Sampled Exporter
6	LB Xiangyang Titanium Industry Co. Ltd.	Registration form Questionnaire	Sampled Exporter
7	Henan Billions Advanced Materials Co. Ltd.	Registration form Questionnaire	Sampled Exporter
8	Shandong Jinhai Titanium Resources Technology Co., Ltd.	Registration form Comments on the Sampling Result in the Trade Remedies case AD0086	Non-cooperative Sampled Exporter
9	Shandong Xianghai Titanium Co., Ltd.	Registration form Comments on the Sampling Results in the Trade Remedies case AD0086	Non-cooperative Sampled Exporter



10	Anhui Gold Star Titanium Dioxide (Group) Co., Ltd.	Registration form	Non-sampled Exporter
11	Guangdong Huiyun Titanium Industry Corporation Limited	Registration form	Non-sampled Exporter
12	Inter-China Chemical Co., Ltd.	Registration form	Non-sampled Exporter
13	Kunming Donghao Technology Development Co., Ltd.	Registration form	Non-sampled Exporter
14	Ningbo Xinfu Titanium dioxide Co., Ltd.	Registration form	Non-sampled Exporter
15	Pangang Group Titanium Industry Co., Ltd.	Registration form	Non-sampled Exporter
16	Panzhuhua Darui Technology Co., Ltd.	Registration form	Non-sampled Exporter
17	Panzhuhua Dongfang Titanium Industry Co., Ltd.	Registration form	Non-sampled Exporter
18	Shandong Doguide Group Co., Ltd.	Registration form	Non-sampled Exporter
19	Yibin Tianyuan Haifeng Hetai Co. Ltd.	Registration form	Non-sampled Exporter
20	Billions Europe Ltd.	Registration form Request to Exclude or Exempt Ink-Grade Titanium Dioxide from the Scope of the Investigation Questionnaire	Importer
21	IMCD UK Limited	Registration form	Importer
22	MegaChem (UK) Ltd.	Registration form	Importer
23	Oxerra UK Limited	Registration form	Importer
24	Prisma Colour Limited	Registration form	Importer
25	British Coatings Federation Limited	Registration form Questionnaire	Trade Body
26	Chemical Business Association Ltd	Registration form	Trade Body
27	Chemical Industries Associated Limited	Registration form Questionnaire	Trade Body



28	China National Coatings Industry Association (“CNCIA”)	Registration form Comments on the Application and Initiation of investigation by CNCIA	Trade Body
29	The Chemours Company Mexico, S. de R.L. de C.V	Registration form Second registration form	Third Country Producer
30	Tronox Pigmentos Do Brazil S.A	Registration form TCP questionnaire	Third Country Producer
31	Carbon International Limited	Registration form Questionnaire	Contributor
32	Dacrylate Paints Limited	Registration form	Contributor
33	Ineos Compounds Holdings Limited	Registration form Questionnaire	Contributor
34	Ineos Enterprises Holdings II Limited	Registration form Questionnaire	Contributor
35	Ineos Tyssedal	Registration form Questionnaire	Contributor
36	Inovyn Europe Limited	Registration form Questionnaire	Contributor
37	Kronos Worldwide, Inc.	Registration form Comment on anon UK ink producer's response	Contributor
38	Manor Coating Systems Limited	Registration form	Contributor
39	Rakem Group Limited	Registration form	Contributor
40	TDIC REACH Consortium	Questionnaire	Contributor
41	Anonymous	Registration form Comments re Tronox and Kronos registrations and submissions - Product scope	Anonymous Interested Party
42	Anonymous	Registration form	Anonymous Interested Party



Annex B: PCN structure

Field description	Product properties	PCN value
Production method	Produced using sulphate method	S
	Produced using chloride method	C
Rutile titanium dioxide content per weight, calculated on the dry matter	>80 to 98%	800
	>98 to 99.5%	980
	>99.5%	995