



**British Salt Limited and
New Cheshire Salt Works Limited**

A report on the acquisition by British Salt Limited of New
Cheshire Salt Works Limited

November 2005

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Note by the Competition Commission

The Competition Commission has excluded from this report information which the inquiry group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002. The omissions are indicated by [✂].

Acquisition by British Salt Ltd of New Cheshire Salt Works Ltd

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Glossary

Summary

The reference

1. On 26 May 2005, the Office of Fair Trading (OFT) referred the completed acquisition by British Salt Limited (British Salt) of New Cheshire Salt Works Limited (NCSW) to the Competition Commission (CC) for investigation and report under the Enterprise Act 2002 (the Act). Our terms of reference are contained in Appendix A. We were required to publish our final report by 9 November 2005.

The products and companies

2. Salt occurs naturally and can be recovered in three main ways: vacuum salt, produced by the evaporation of brine—pumped from underground salt deposits—in enclosed pressure vessels; solar/sea salt, obtained by the evaporation of sea water; and rock salt (both white and brown), produced by dry mining in which solid salt is cut from underground salt deposits. Vacuum salt, solar/sea salt and white rock salt are collectively referred to as white salt for the purposes of this inquiry.
3. British Salt and Salt Union Limited (Salt Union) are the two larger UK vacuum salt producers. Prior to the merger, the other UK producer was NCSW, which was significantly smaller. Both British Salt and NCSW produce only vacuum salt.
4. Vacuum salt can be further sub-divided into the following types:
 - (a) undried vacuum (UV) salt, which contains 2 to 3 per cent water and is mainly used in the production of chlorine and caustic soda and in the production of other vacuum salt products;
 - (b) pure dried vacuum (PDV) salt, the product of further drying of UV salt which has a wide range of end-uses, including in the food industry;
 - (c) compacted salt, which is PDV salt that has been processed to form granules, tablets or blocks and is used primarily for water softening; and
 - (d) pharmaceutical salt, which is PDV salt that meets very high purity requirements and is used primarily for pharmaceutical purposes.

The relevant merger situation

5. Prior to the merger, both British Salt and NCSW produced PDV salt and compacted salt. British Salt also produces UV salt and NCSW also produces pharmaceutical salt. We found that, as a result of the merger, British Salt and NCSW ceased to be distinct and that the share of supply test was met. As a result, we found that there was a relevant merger situation within the meaning of the Act.

Market definition

6. We concluded that the relevant product market for the purposes of this inquiry was the market for PDV and compacted salt, and our analysis was carried out on this basis.

7. We took into account the limited share of supply in the UK held by imported salt and the lack of a persistent growth trend over the last five years in vacuum salt imports. We also noted a variety of competitive disadvantages affecting non-domestic manufacturers and distributors that import salt—particularly additional transport costs. We concluded that the appropriate geographic market was no wider than the UK and the Republic of Ireland.

Competition prior to the merger

8. Our analysis of competition in PDV and compacted salt prior to the merger found a market characterized by high concentration, long-term relationships, little evidence of buyer power, considerable overcapacity, high barriers to entry, limited competitive constraints imposed by imported salt or UK salt distributors, and the pursuit by NCSW of a business strategy that differed significantly from that of its two main UK competitors. We found that NCSW was competing effectively in the market.

The counterfactual

9. In order to assess the competitive effects of the merger, we considered what was likely to have happened if the merger had not occurred (the counterfactual). The former shareholders of NCSW told us they were seeking to exit the business and that, in light of steep increases in actual and projected energy prices, they expected that NCSW would have ceased salt production during 2006, if not before.
10. We analysed the issues facing NCSW and tested the sensitivity of financial projections for the NCSW business to increased energy costs, changes in other costs and the extent to which cost increases might have been 'passed through' in price increases to customers.
11. Based on this evidence, we concluded that the appropriate counterfactual for the purposes of our inquiry was that NCSW's former shareholders would have closed NCSW in late 2006. This was a change to the view we expressed in our provisional findings report; a change caused by new evidence presented to us, particularly about steep and lasting increases in energy prices.

The competitive effects of the merger

12. We considered the effect of the merger when set against this counterfactual. To do this we first assessed the effect of the merger in relation to the period up until closure of the NCSW plant, had the merger not taken place; and we then considered the effect of the merger in relation to the period after closure, again, had the merger not taken place.
13. In relation to the pre-closure period up until late 2006, we noted that the relevant market was already highly concentrated and had become more so as a consequence of the merger. The loss of an effective independent competitor that seeks always to sell its available capacity, such as NCSW, in a market with only three competing UK producers and the other characteristics we identified can be expected to lead to a loss of rivalry, and hence the potential for higher prices. We did not expect there to be either (a) a significant supply response from imports and distributors, or (b) an aggressive response on price from Salt Union, such as to reduce this loss of rivalry.

14. However, our expectation that NCSW would have closed by late 2006 indicated that there would have been a period of less than two years from the date of the merger in which NCSW would have remained as an effective independent competitor. We also formed the view that the competitive impact of NCSW would have diminished in the run-up to closure; for example as a result of not looking aggressively for new customers.
15. In relation to the period beyond late 2006, we considered that the closure of NCSW would have led to a loss of rivalry and price rises in a similar way and for similar reasons to those that would be brought about by the merger.

Conclusions

16. In view of our analysis, we formed an expectation that NCSW would have closed in late 2006, absent the merger; and we found that the acquisition of NCSW by British Salt had not resulted in, and was not expected to result in, a substantial lessening of competition (SLC) within any market or markets in the UK (or a part of the UK) for goods and services.

Findings

1. The reference

- 1.1 On 26 May 2005, the OFT referred the completed acquisition by British Salt of NCSW to the CC for investigation and report. The reference was made under section 22 of the Act. Our terms of reference are set out in Appendix A, together with an explanation of how we have conducted our inquiry. We were required to publish our final report by 9 November 2005.
- 1.2 This document, together with the appendices, constitutes our findings. Further information, including non-commercially sensitive versions of main party and third party written submissions and details of a survey of salt purchasers conducted on behalf of the CC by Synovate (the customer survey) can be found on our web site.¹ We cross-refer to these documents where appropriate.

2. The products and companies

The basic product: salt

- 2.1 Salt is the conventional name for sodium chloride. It occurs naturally either in solid form underground or in solution as brine. It can be recovered in three main ways, resulting in three different types of salt. Each of these types of salt differs in shape, hardness, grade and purity and may need to be processed further to meet the requirements of different end-use applications. The three types of salt resulting from the three different methods of production are:
- (a) Vacuum salt, produced by solution mining in which water dissolves underground salt deposits to create brine which is pumped to the surface and then evaporated in enclosed pressure vessels known as 'effects.' Vacuum salt has at least 99.8 per cent purity. We were told that, by placing these effects in series, greater efficiencies can be achieved in the use of energy and in the volume of salt extracted from a given quantity of brine. It is generally accepted that efficiency gains will increase up to a maximum of six effects in series. However, each incremental effect requires significant capital investment. The processing capacity of the plant is determined by the volume of the effects. There is therefore a balance to be struck in designing evaporation plants, which must take account of: processing capacity, estimated production volumes, capital expenditure and ongoing energy costs. Vacuum salt is produced in the UK by British Salt, NCSW and Salt Union, a subsidiary of Compass Minerals International Inc. It is also produced in north-west Europe primarily by Akzo Nobel Salt BV (Akzo) and the European Salt Company GmbH (ESCO), and to a lesser extent by Compagnie des Salins du Midi et des Salines (Salins du Midi).
- (b) Solar/sea salt, a product obtained by solar and wind evaporation of sea water in open basins or pans, which has 98 to 99 per cent purity. It is produced around the world in warmer climates, notably (in respect of solar salt entering the UK) in France and North Africa by Salins du Midi and in Israel by the Dead Sea Works. Whilst salt is not produced by solar evaporation in the UK, there are some small

¹This survey is available at www.competition-commission.org.uk. The survey sample was not fully representative in terms of the number of salt purchasers involved from each UK vacuum salt producer. Therefore all survey results used in this report apply to the survey respondents, not necessarily the population of salt purchasers as a whole. However the survey covered a substantial number of direct customers of each of the UK vacuum salt producers that collectively supply 94 per cent of the relevant market.

volumes of sea salt produced in heated open pans in the UK by the Maldon Crystal Salt Company and the Anglesey Sea Salt Company. All further references to solar/sea salt may be taken to exclude this small-scale UK production.

- (c) Rock salt, a product produced by dry mining, in which solid salt is cut from underground salt deposits and transported to the surface. It is of varying purity, and comes in two forms known as brown rock salt (which is of lower purity and dark in colour) and white rock salt (of lighter colour and higher purity).² All rock salt produced in the UK is brown rock salt, with a typical purity of around 93 per cent. White rock salt has at least 96 per cent (and up to 99 per cent) purity. It is produced in other countries around the world, notably in Germany by ESCO.
- 2.2 Vacuum salt, solar/sea salt and white rock salt are collectively referred to as white salt for the purposes of this inquiry.
- 2.3 Vacuum salt can be subdivided further into the following types of salt, each of which represents stages of the vacuum salt production process:
- (a) UV salt, which is the product of the vacuum evaporation process and some limited drying. It contains 2 to 3 per cent water and is used primarily in the production of chlorine and caustic soda, and also as the basic feedstock for the production of other vacuum salt products.
 - (b) PDV salt, which is the product of the further drying of UV salt.³ PDV salt has a moisture content of less than 0.1 per cent and has a wide range of end-uses.
 - (c) Compacted salt, which is PDV salt that has either been compressed into salt sheets which are broken up to form granules (granular salt)⁴ or compressed into salt tablets or blocks (block salt). For the purposes of this inquiry, we treat salt licks for animal feed as an end-use application of PDV salt rather than as a form of compacted salt, since in the main salt licks are not manufactured by the salt producers themselves. We also use the term compacted salt to refer only to products made from vacuum salt.⁵ Compacted salt is primarily used for water softening.
 - (d) Pharmaceutical salt, which is PDV salt that is put through hot air driers to reduce the moisture content to less than 0.01 per cent. Pharmaceutical salt requires a designated production and packaging facility to meet the high (99.9 per cent) purity requirements.⁶ Pharmaceutical salt must conform to the relevant pharmacopoeia standard in the market where it is to be consumed. In Europe the relevant standard is the European Pharmacopoeia standard.
- 2.4 British Salt produces UV, PDV and compacted salt as end products; NCSW produces PDV, compacted and pharmaceutical salt as end products; and Salt Union produces UV, PDV and compacted salt as end products. (Salt Union is also a major

²We were also told about grey rock salt, another form of lower purity rock salt of a slightly different colour. For the purposes of this inquiry, we use the term brown rock salt for all non-white rock salt.

³We were told that NCSW produced PDV salt through vacuum evaporation and subsequent drying, and that the NCSW plant did not produce UV salt as a separate product.

⁴Salt Union produces granular salt through an evaporation process rather than through compaction. When used in this document, the term 'compacted salt' includes the granular salt produced by Salt Union.

⁵Compacted salt can also be made from white rock salt and solar/sea salt. However, we do not consider that defining compacted salt in this way makes any significant difference to our inquiry.

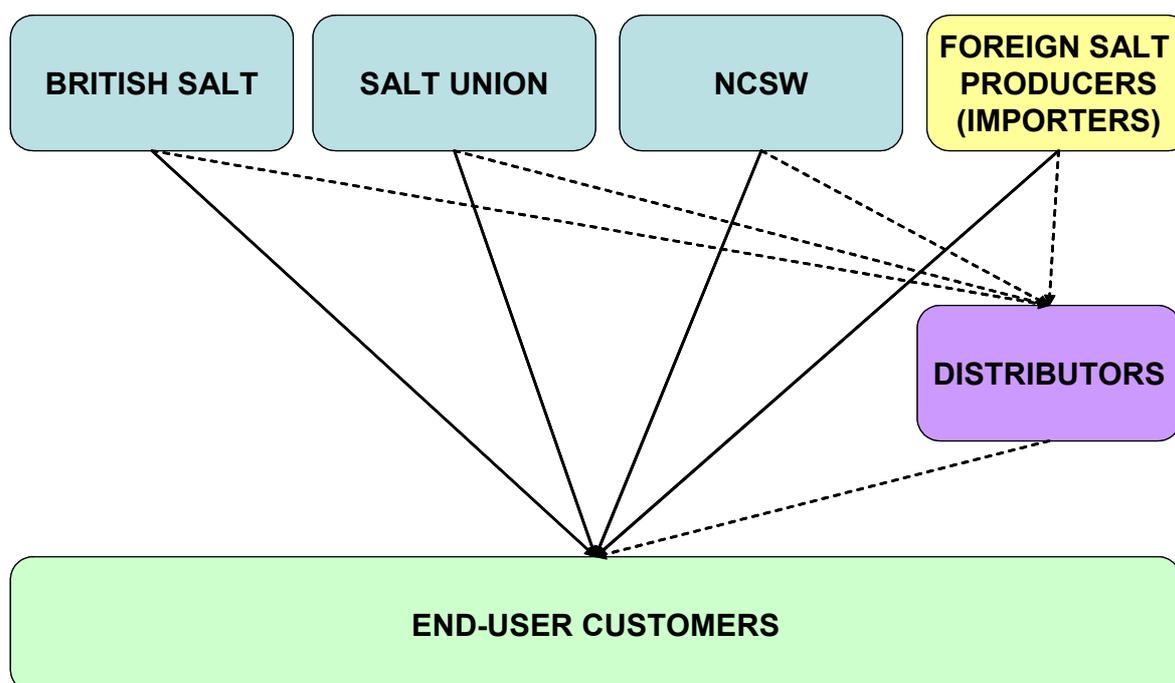
⁶Pharmaceutical salt requires either the isolation of an effect in the manufacturer's plant, or the isolation of the entire production process for a period of time in order to meet the required purity standard (known as a 'campaign').

operator of UK rock salt mines, producing brown rock salt used primarily for de-icing. See further discussion of de-icing salt at paragraphs 4.12 to 4.14.)

- 2.5 British Salt and NCSW therefore overlap in the production of PDV and compacted salt. If, absent the merger, British Salt had entered the pharmaceutical salt market, then British Salt and NCSW would have also overlapped in the production of pharmaceutical salt. This is discussed further in relation to the counterfactual at paragraph 5.27.
- 2.6 All of the UK vacuum salt producers sell salt directly to end-users in the UK. They also sell salt to distributors. A small number of distributors are wholly owned subsidiaries of the UK vacuum salt producers, (for example, Irish Feeds Ltd (Irish Feeds) is a subsidiary of British Salt, and Direct Salt Supplies Ltd (Direct Salt) is a subsidiary of Salt Union). However, most are independent, although they may have a 'preferred supplier' relationship with one of the UK or foreign salt producers. Foreign salt producers, in a few cases, sell salt directly to end-users in the UK. However, the majority of their imports into the UK are sales to distributors who then sell the salt on to end-users. Figure 1 illustrates this market structure.

FIGURE 1

Stylized market structure of the UK salt market



Source: CC analysis.

- 2.7 Low sodium salt products are typically blends of sodium chloride and potassium chloride. Low sodium salt has been developed for use as a food flavouring instead of conventional salt in response to concerns about the effect of sodium chloride consumption on human health. None of the three UK vacuum salt producers manufacture low sodium salt. However, we consider the relevance of low sodium salt to our inquiry in paragraph 4.51.

British Salt

- 2.8 British Salt is one of the two larger UK vacuum salt producers; the other large producer is Salt Union. British Salt produces all of its vacuum salt at its plant in Middlewich, Cheshire. It sells salt and salt products in the UK and abroad. For the year to 31 December 2004, British Salt generated revenues of £29.0 million. It is a subsidiary of British Salt Holdings LLC, which, until December 2004, was known as US Salt Holdings LLC. British Salt was acquired by US Salt Holdings LLC in 2000 from Staveley Industries plc (Staveley), a company registered in England. In October 2002, British Salt acquired the entire share capital of a Northern Irish company, Irish Feeds, for £72,000. Irish Feeds is its principal distributor of salt in Northern Ireland.
- 2.9 Appendix B provides further financial information on British Salt.

New Cheshire Salt Works

- 2.10 Prior to the merger, NCSW was the smallest of the three UK vacuum salt producers. It produced all of its vacuum salt at its plant in Northwich, Cheshire. It was a family-owned business, the principal activities of which were the manufacture and selling of salt and salt products. For the year to 2 January 2005, NCSW generated revenues of £[~~3~~]. During 2003, NCSW acquired a 49.9 per cent interest in the ordinary share capital of The Block Salt Company Ltd (The Block Salt Company) for £150,000. The remaining 50.1 per cent is held by Harvey Softeners Ltd. The principal activity of The Block Salt Company is the purchase from NCSW and resale to Harveys Softeners Ltd of compacted salt blocks for water softening.
- 2.11 Appendix B provides further financial information on NCSW.

3. Background to the merger and the relevant merger situation

1986 Monopolies and Mergers Commission White Salt report

- 3.1 As a result of a reference from the Director General of Fair Trading in 1983, the Monopolies and Mergers Commission (MMC) undertook an investigation into the possible existence of a monopoly situation in the supply of white salt in the UK. It published its report in 1986. At that time British Salt was owned by Staveley and Salt Union was owned by Imperial Chemical Industries plc (ICI); NCSW was owned by the same family that owned NCSW prior to its acquisition by British Salt in 2005.
- 3.2 The MMC concluded that price competition in the UK white salt market had been extremely limited, and that this could be expected to operate against the public interest, in that prices were higher than if price competition had been effective. The MMC therefore recommended that the Secretary of State should request the Director General of Fair Trading to seek undertakings from Staveley and British Salt which would have the result of imposing a price control on British Salt's prices for white salt in the UK. In 1988, Staveley gave undertakings on behalf of itself and British Salt to ensure price increases were limited to a weighted index of production costs minus an abatement of one percentage point.⁷
- 3.3 In April 2000, when Staveley sold British Salt to US Salt Holdings LLC, Staveley sought to be released from its undertakings. The then Secretary of State released

⁷In 1992, following a review of the original undertakings, the then Secretary of State accepted revised undertakings offered by Staveley which rebased the cost index to 31 January 1992, and increased the annual abatement to two percentage points.

Staveley from its undertakings in May 2001, and did not consider it necessary to seek further undertakings from British Salt or its new owner.

History of interest in NCSW

3.4 In 2000, the new owners of British Salt approached the owners of NCSW about the possibility of British Salt acquiring NCSW. A price of £[redacted] per share was discussed, which took into account NCSW's outstanding bank loans of about £1.5 million and payments that would be made to NCSW employees and the outgoing executive directors of NCSW in the event of the sale of NCSW. [redacted] As a result, British Salt withdrew its offer to purchase NCSW.

3.5 [redacted]

The transaction

3.6 British Salt completed its acquisition of NCSW on 24 February 2005 at an agreed cost to British Salt of approximately £[redacted], before taking account of the estimated receipts of £[redacted] from the sale of the NCSW factory site and accompanying farmland.⁸ British Salt agreed to pay £[redacted] for all the shares of NCSW, equivalent to £[redacted] per share,⁹ and accepted responsibility for closing down the Northwich site at an estimated exit cost of £[redacted], resulting in a net cost of about £[redacted] after the estimated receipts referred to above.

3.7 The consideration for the shares (and the timing of the payments) is as follows:

- (a) £[redacted] per share satisfied in cash at the date of acquisition (24 February 2005);
- (b) a conditional £[redacted] payable subject to the decision of the relevant competition authorities; and
- (c) a further conditional £[redacted] also dependent on the decision of the relevant competition authorities and payable 18 months after 24 February 2005 (subject to any warranty claims).

3.8 [redacted]

3.9 [redacted]

3.10 We were told that the price negotiations were relatively short; a price of £[redacted] by the former shareholders of NCSW and this was agreed by British Salt. The former shareholders of NCSW told us that, after the initial deal with British Salt had fallen through, they made a very informal approach to a non-UK salt producer about the potential acquisition of NCSW, but it was uninterested. We were told that the former shareholders of NCSW did not seek or receive formal approaches or offers from any other parties.

⁸As discussed in paragraph 3.12, the closure of the NCSW plant was part of British Salt's post-merger plans.

⁹We have been told by the former shareholders of NCSW that the increased price per share achieved in 2005 compared with the £[redacted] per share discussed during previous negotiations in 2000/01 reflected the fact that, by 2005, the external debt of NCSW (amounting to some £1.5 million) had been repaid in full.

The rationale for the merger

- 3.11 British Salt told us that its plant in Middlewich could produce 825,000 tonnes of salt a year but that it was currently operating only at approximately [X] per cent of its capacity. British Salt also told us that it had seen declining UK sales in a generally declining UK market over a number of years. British Salt told us it therefore found itself spreading the fixed costs of running its plant over decreasing volumes of salt, resulting in higher fixed costs per unit of production. We were told that NCSW's plant in Northwich could produce 80,000 tonnes of salt a year and was currently operating at near full capacity.
- 3.12 Against this background, British Salt told us that its rationale for the purchase of NCSW was to:
- improve the capacity utilization of its Middlewich plant by shifting all of NCSW's production from Northwich to its own plant at Middlewich, allowing the plant at Northwich to be closed. Additional investment at Middlewich would not be required in order to continue to service all of NCSW's existing PDV and compacted salt customers; and
 - benefit from reductions in key unit costs of British Salt's production process (such as energy, purification chemicals and pallets) as a result of combining its purchasing volumes with NCSW's and shifting all production to British Salt's more efficient plant.
- 3.13 British Salt told us that an additional benefit of its purchase of NCSW (but not part of the original rationale for the purchase) was the diversification of British Salt's product range into higher-margin products. British Salt told us that, in the lead up to acquiring NCSW, it had not intended to continue with NCSW's production of pharmaceutical salt and salt packaged for retail sale (retail salt). It considered that the potential volumes of these types of salt, given the investments that would have been necessary to produce them, were too low to be of interest, despite the possibility of achieving higher margins. However, once the merger was complete, British Salt learned of the volume of these products that NCSW was selling. In addition, British Salt told us that the closure of the Albion Inorganic Chemicals chlor-alkali plant, previously a significant UV salt customer for British Salt, that was announced in mid-2005 and was to take effect in November 2005, had forced British Salt to reconsider its strategy. As a result, British Salt had decided it would make the necessary investments at its Middlewich plant to allow it to continue production of pharmaceutical salt and retail salt at its own plant. Additionally, NCSW's block salt equipment would be relocated from the NCSW plant to British Salt's plant.

Jurisdiction

- 3.14 Under our terms of reference we were required to establish whether a 'relevant merger situation' had been created and, if so, whether the creation of that situation had resulted, or might be expected to result, in an SLC within any market or markets in the UK or parts of the UK for goods or services. Section 23 of the Act provides that a relevant merger situation is created if two or more enterprises have ceased to be distinct and at least one of the turnover or share of supply tests is met.
- 3.15 Any two enterprises cease to be distinct if they are brought under common ownership or common control. As described at paragraph 3.6, British Salt acquired the entire issued share capital of NCSW on 24 February 2005. The reference was made on 26 May 2005. Enterprises carried on by or under the control of British Salt have

ceased to be distinct from enterprises carried on by or under the control of NCSW and did so not more than four months before the reference.

- 3.16 Under sections 23(3) and (4) of the Act, the share of supply test is met if British Salt increases its share of supply of goods or services of any description in the UK (or a substantial part of the UK) to at least one-quarter as a result of the merger, or if it already supplies at least one-quarter, it increases its share as a result of the merger.
- 3.17 The application of the share of supply test is different from the identification of market shares undertaken as part of any analysis of competition within an economic market. Nonetheless, the figures presented in Appendix C and discussed at paragraph 5.108 show that the British Salt and NCSW combined UK shares of supply of each of PDV salt and compacted salt are 68 per cent and 28 per cent respectively. Prior to the merger, British Salt's UK shares of supply of PDV salt and compacted salt were 57 per cent and 24 per cent respectively. The share of supply test is therefore met and we do not have to consider whether the turnover test is met.
- 3.18 We therefore found that, as a result of the merger, enterprises carried on by or under the control of British Salt ceased to be distinct from enterprises carried on by or under the control of NCSW. We also found that British Salt and NCSW together supplied more than one-quarter of both the PDV and compacted salt supplied in the UK and that, as a result, the share of supply test was met. We therefore concluded that there was a relevant merger situation within the meaning of the Act. This was not disputed by any party during the course of our inquiry.

4. Market definition

- 4.1 An important element in deciding whether a merger would result in an SLC is to define the relevant market or markets. There are normally two dimensions to the definition of a market, the product market and the geographic market. The products that should be included in the relevant market and the geographic boundaries of that market are determined by substitutability; that is, the extent to which customers can readily switch between substitute products, or suppliers can readily switch their facilities between the supply of alternative products. The generally accepted conceptual approach seeks to identify the extent to which customers could readily demand, or suppliers readily supply, adequate substitute products in response to a small but significant non-transitory increase in price (SSNIP) imposed by a hypothetical monopolist of a certain product or products and geographic candidate markets, such that the price increase would be unprofitable.

Market definition in the 1986 MMC report

- 4.2 As discussed in paragraphs 3.1 to 3.3, in 1986 the MMC undertook an investigation into the supply of vacuum salt (which it called white salt) in the UK. As British Salt pointed out to us, the MMC did recognize that there was 'in some cases' evidence of substitutability between white rock salt, and UV salt, PDV salt and granular salt. However, the MMC did not appear to consider this substitutability between vacuum salt and non-vacuum salt to be particularly extensive, and the focus of its investigation was vacuum salt. The MMC report is now nearly 20 years old and the nature of any substitutability may have changed as industrial processes and customers' technical specifications and preferences have evolved. We address at paragraphs 4.29 to 4.48 whether such possible substitutability as commented on by the MMC is still applicable.

Market definition in the European Commission K&S/Solvay merger decision

- 4.3 In 2001, two European salt manufacturers, Kali & Salz Aktiengesellschaft (K&S) and Solvay SA (Solvay) notified the European Commission that they proposed to combine their salt production and sales businesses to form a joint venture, ESCO. The European Commission declared the merger compatible with the common market and the EEA Agreement.¹⁰ In its decision, the European Commission discussed the appropriate market definition.
- 4.4 We noted that the European Commission stated that:
- [t]he requirements for the different applications [of salt] can be met by all three types of salt [rock salt, sea salt and vacuum salt] which consequently can be used interchangeably to a large extent. However, this is not true for pharmaceuticals ... which require a particularly high level of purity which can only be achieved by vacuum salt ...¹¹
- 4.5 In considering the product market, the European Commission identified eight applications of non-de-icing salt, but noted that '[t]he applications differ in specifications of purity level, grain size and additives' such that 'there is no demand-side substitutability'. Focusing on supply-side substitution, it also noted that 'some producers have confirmed that they would be able to shift their production of salt from one application into another application in the short term without incurring significant costs'.
- 4.6 The case is of limited assistance to us as the European Commission left the precise product market definition open since it considered that no competition problems would arise under any of the possible product market definitions. It did, however, use the working hypotheses of separate product markets for 'the overall salt market, de-icing salt, and each of the eight applications for non-de-icing salt'.
- 4.7 The European Commission considered that the relevant geographic markets were mainland/Continental Europe, the Nordic countries, UK and Ireland, and the Iberian countries. The rationale for these market definitions was primarily determined by the radius of 700 to 800 km from a production plant beyond which transport costs were considered uneconomical.

British Salt's view on market definition

- 4.8 British Salt told us that it considered that there was a single UK market for the supply of white salt, comprising vacuum salt, white rock salt and solar/sea salt. British Salt told us that it considered low sodium salt to be in the same market as conventional salt, and it also suggested that electronic water conditioning¹² was an alternative to water softening using salt.
- 4.9 British Salt considered that the only exception to a single UK market for white salt was pharmaceutical salt, which it considered was in a separate product market (as a result of high purity requirements and reputational and regulatory barriers to entry) that was at least European Economic Area (EEA)-wide.

¹⁰Case No COMP/M.2176—K&S/SOLVAY/JV 10/01/2002.

¹¹Paragraph 15 of the European Commission decision.

¹²In this report, we use the term 'water conditioning' to cover a range of water treatment/purification techniques, both chemical and non-chemical. Water softening is a particular form of water conditioning that involves the removal of hardness from water.

Product market

- 4.10 As explained in paragraph 2.5, British Salt and NCSW overlap in the production of PDV and compacted salt. For the product market definition in relation to this inquiry, the critical questions are therefore:
- (a) whether there are four separate product markets for UV salt, PDV salt, compacted salt and pharmaceutical salt, or whether there is a PDV and compacted salt product market; or
 - (b) whether vacuum salt is part of a wider white salt market containing all or any other white salt products such as white rock salt and solar/sea salt.
- 4.11 In the following sections, we first consider the particular case of salt used for de-icing. We then consider the questions set out in the previous paragraph, moving from a potentially narrower market definition (for vacuum salt or different types of vacuum salt) to a broader one (for white salt), looking at both demand-side and supply-side substitutability and using the SSNIP framework.

Salt for de-icing

- 4.12 Dissolving salt in water lowers the temperature at which it freezes. Salt can therefore be used in de-icing applications, for example to de-ice airport runways, roads and footpaths. Solid salt can be spread directly on to the surface, or it can be dissolved in water and then sprayed on to the surface in solution. We have been told that about 1 million tonnes of salt is used for de-icing during a typical UK winter, although clearly this can vary with the severity of the weather.
- 4.13 De-icing salt is generally low grade white rock salt, UK-produced brown rock salt, soiled vacuum salt or soiled solar/sea salt because purity and moisture content are not critical given its use. Most de-icing salt used in the UK is purchased by local authorities for highway de-icing using competitive tendering processes. We saw evidence that salt for de-icing was a lot cheaper than salt used for other applications. We did not believe that, if an SSNIP were carried out by a hypothetical monopolist supplier of white salt used in other applications, there would be significant switching of demand to de-icing salt, since it was already considerably cheaper (and not generally substitutable at a technical level).
- 4.14 We did not therefore consider that de-icing salt was in the relevant market(s) for the purposes of this inquiry, and British Salt has not disputed this. References to white salt products in this report should be considered to exclude the salt used for de-icing.

Types of vacuum salt: demand-side substitutability

- 4.15 Demand-side substitutability occurs because an increase in price makes a product less attractive to customers, who therefore decide to purchase less of it and more of substitute products.
- 4.16 We did not receive any evidence of widespread substitution by customers between the different types of vacuum salt (ie UV salt, PDV salt, compacted salt and pharmaceutical salt). Our customer survey indicated that a clear majority of PDV customers would not regard UV, compacted or pharmaceutical salt as realistic alternatives (85 per cent of respondents mainly using PDV said that UV was not very, or not at all, realistic as an alternative to PDV, and the corresponding figures in relation to compacted salt and pharmaceutical salt as alternatives to PDV were

81 per cent and 83 per cent respectively). Our customer survey also indicated that a clear majority of compacted salt customers would not regard UV, PDV or pharmaceutical salt as realistic alternatives (81 per cent of respondents mainly using compacted salt said that UV was not very, or not at all, realistic as an alternative to compacted salt, and the corresponding figures in relation to PDV salt and pharmaceutical salt as alternatives to compacted salt were 68 per cent and 83 per cent respectively).

- 4.17 British Salt told us that, in some applications where the salt was to be dissolved in a saturator for water conditioning (for example), either UV or PDV could be used, depending on the customer's handling facilities. British Salt also told us that there was some small scale substitutability between compacted salt and PDV (and ultimately UV) for regenerating water softeners. There may also be other opportunities for substitution, particularly in industrial applications.

Types of vacuum salt: supply-side substitutability

- 4.18 In this section we consider whether there is potential for supply-side substitution in relation to the different types of vacuum salt. Supply-side substitution occurs when a price rise prompts other firms to start supplying, at short notice, an effective substitute to the product in question. For each of UV salt, PDV salt, compacted salt and pharmaceutical salt, we examined whether firms might be able to start supplying the type of vacuum salt in question, at short notice and with little or no investment. This supply-side substitution would usually come from firms with existing facilities, providing similar products and/or operating in adjacent areas. We then considered whether, if a hypothetical monopolist of a certain type of vacuum salt raised its prices by 5 per cent, there would be a loss of demand as a result of customers switching their consumption to supply from other firms incentivized to produce at short notice, such that the price rise would be unprofitable.
- 4.19 To understand the costs and timescales involved in starting to supply each type of vacuum salt, we examined what would be required for salt producers to install capacity for converting between UV salt, PDV salt, compacted salt and pharmaceutical salt. If supply of an effective substitute can be profitably started at short notice (usually less than one year) with little investment, the different types of vacuum salt can be incorporated into our calculation of the size of the product market. An analysis of the production capacities of the UK vacuum salt producers and the main European white salt producers is set out in Appendix E.

Converting UV salt to PDV salt

- 4.20 British Salt told us that a new dryer with a cooling facility would cost in the region of £1 million to £1.25 million with a six- to nine-month lead time for a producer with no existing infrastructure. To add a PDV dryer to an existing drying facility would cost around £700,000, including additional conveyor belt capacity in and out, giving a drying capacity of around 250,000 tonnes a year.

Converting PDV salt to compacted salt

- 4.21 British Salt told us that production of compacted products could be increased at short notice by the addition of a compaction unit at a cost of approximately £250,000 to produce 6 tonnes an hour (which equates to around 50,000 tonnes a year if operated all day, every day or 12,000 tonnes a year if operated on a standard working week). We were told by British Salt that this was off-the-shelf technology and would require only a three- to four-month lead time. A distributor could easily buy PDV salt and

compact it, and we were given an example of a distributor that does this. British Salt estimated that a new facility to do this would take about nine months to become operational. The cost should be considered in the context of compacted sales in 2004 of about £[redacted] for British Salt and £[redacted] for Salt Union. However, in relation to block salt, British Salt told us that it would cost about £700,000 to install machinery to have a block salt capability (including a packaging facility), and this would take six to nine months.

Switching capacity to pharmaceutical salt

- 4.22 NCSW produces pharmaceutical salt on a ‘campaign’ basis which requires the plant to be shut down and purged before production can begin again. The build up of impurities after a short period requires that this process be repeated thereby limiting production significantly. [redacted] Following the completion of the infrastructure upgrades necessary to produce pharmaceutical salt, there was also an additional requirement to achieve accreditation acceptable to the customer. We understand that this accreditation process typically takes nine to 12 months but may take up to two years in some cases depending on the customer’s end use. This is in addition to the time taken to complete the infrastructure upgrades required.

Types of vacuum salt: conclusion

- 4.23 Despite British Salt’s information in relation to water softening, we did not find sufficient evidence to form the view that UV, PDV, compacted and pharmaceutical salt were generally substitutable on the demand side.
- 4.24 We noted that there were some differences between granular, tablet and block salt in terms of how readily they could be substituted for each other in water conditioning applications. However, we concluded that all these forms of compacted salt could be considered to be within the same product market given the level of demand-side substitutability between these products, and in particular between tablet and granular salt. We accepted that blocks might be slightly less substitutable but judged, for the purpose of our inquiry, that these differences were not sufficiently material to require treatment as a separate product market.
- 4.25 We did not consider that there was supply-side substitutability between pharmaceutical salt and the other types of vacuum salt, given the timescale (over one year) and investment (as a result of the associated complexities) involved in commencing production of pharmaceutical salt.
- 4.26 We considered PDV salt and compacted salt to be in the same market for the purposes of this inquiry on the basis of supply-side substitutability, and all our subsequent analysis was carried out on this basis. All PDV manufacturers are currently able to compact their own PDV. In addition, we were aware of at least one distributor which purchases PDV and compacts it. This suggested that there might be firms which could profitably start supplying compacted salt at short notice and without incurring substantial sunk costs in response to a SSNIP.
- 4.27 We considered sales of UV salt to be in a separate market to PDV and compacted salt for the purposes of this inquiry on the basis that:
- (a) the cost and timescales for installing UV-to-PDV salt drying capacity appeared to be significant;

- (b) we were aware of only one firm (in Northern Ireland) that purchases UV salt and dries it itself to produce PDV. UV production by British Salt and Salt Union was co-located with their PDV production; and
- (c) NCSW does not (and cannot) produce UV salt as a separate product because of its plant design.¹³

4.28 We did not consider that the inclusion of UV salt in the market definition would have made a difference to our analysis of the effect on competition of the merger between NCSW and British Salt because NCSW does not and cannot produce UV salt as a separate product.

Types of white salt: demand-side substitutability

4.29 As explained previously, for the purposes of this inquiry, vacuum salt, solar/sea salt and white rock salt are collectively termed white salt. In this section we consider the potential for substituting solar/sea salt and white rock salt for the different types of vacuum salt (in particular, PDV and compacted salt) on the demand side. We consider (a) physical properties, (b) end-user perceptions (c) the presence of any switching costs, and (d) the product market definition using a SSNIP framework.

Physical properties

4.30 We found that the substitutability of different types of white salt depended on the intended end use. The physical properties of the different types of white salt, and their principal end uses, are set out in Table 2 of Appendix C. British Salt's best estimates regarding the split of the different types of white salt by end-use application in the UK are set out in Table 4 of Appendix C.

4.31 Several parties told us that white rock salt was a substitute for vacuum salt in animal feed production, preparation of hides and skins and water conditioning, and gave us specific examples of customers making these substitutions. The 1986 MMC report also recognized the potential for these substitutions.

4.32 It was suggested that, as white rock salt from Germany and solar/sea salt met the food standard BS998, they could be used in the food industry. Indeed, Broste Limited (Broste), a distributor, told us that it had invested in handling facilities to allow it to import salt in bulk for food use. It was also pointed out that white rock salt and solar/sea salt appeared to be used in reasonable volumes in the food industry across Europe. We noted, however, that both solar/sea salt and white rock salt lacked vacuum salt's very high levels of purity and the benefit that vacuum salt had of a production process with inherently low risks of contamination.

4.33 We were also given examples of customers changing from compacted vacuum salt to compacted solar/sea salt for water softening.

End-user perceptions

4.34 As stated in paragraph 1.2, we carried out a survey of UK salt purchasers. The survey showed that, of respondents mainly using PDV today, 77 per cent would

¹³We were told that it was highly unlikely that NCSW would want to reconfigure its plant to produce UV salt as an additional product line given the limited continuing demand for UV salt in the UK and the extensive investment costs that would be required.

consider non-vacuum salt either not very, or not at all, realistic as an alternative. For compacted salt, the figure was 74 per cent.

- 4.35 Broste told us that, because white rock salt and solar/sea salt were not natural resources in the UK, the market developed in such a way that vacuum salt was the predominant type of white salt used. In relation to white rock salt, whilst Broste considered that there was generally no reason why it could not be used in most applications, there were some applications (such as food production) where it felt it was difficult to envisage increased use in the UK.

Switching costs

- 4.36 Switching costs matter in defining a market because, if prices rise, the existence of switching costs may prevent customers from substituting one product for another. We did not find that there were many switching costs for customers in changing between vacuum salt and solar/sea salt or white rock salt, apart from the potential need to change production processes slightly to accommodate different grain sizes or chemical compositions and additional due diligence costs for end-uses where traceability was important (for example, the food industry).

Application of the SSNIP framework

- 4.37 To apply a SSNIP framework it is necessary to have an understanding of the effect of a price rise. Whilst British Salt stated that no general statements could be made as to the price sensitivity of particular customer groups, it considered that demand for salt products was generally not sensitive to changes in price. We found that, for many customers, salt was not a high percentage of their expenditure and hence they were not particularly sensitive to changes in price. Around 40 per cent of the respondents to our customer survey said that salt was less than 1 per cent of their overall operating cost base, and approximately a further 40 per cent said that it was 1 to 4 per cent of their overall operating cost base. Our customer survey indicated that reliability of delivery and meeting tight technical specifications had similar levels of importance to low price in customer choice of salt supplier.
- 4.38 One way of approaching the SSNIP test is to estimate the sales that must be lost before a given price increase would be unprofitable; the 'critical loss' volume. This volume can then be judged against the likelihood of such a loss occurring. This potential loss of volume can be examined on both the demand side and the supply side.
- 4.39 Both British Salt and Salt Union provided evidence of the loss of volume which would render a 5 per cent price increase unprofitable. For British Salt, this was [X] of volume for both PDV and compacted salt. This equated to volumes of [X] tonnes for PDV and [X] tonnes for compacted salt. For Salt Union, the volume loss was [X] per cent for PDV and [X] per cent for compacted salt; that is around [X] tonnes for PDV and [X] tonnes for compacted salt.
- 4.40 We considered whether, if a hypothetical monopolist raised its prices by 5 per cent for PDV and compacted salt, there would be a loss of demand to other white salt products of [X] per cent or more (in the case of PDV salt) or of more than [X] per cent (in the case of compacted salt), such that the price rise would be unprofitable. If there were losses of such magnitude, we would then consider those other white salt products to be in the same market as PDV and compacted salt.

- 4.41 We took the view that a 5 per cent price increase would not be sufficient for enough customers to switch in the case of PDV salt. This is primarily because of the price differences between solar salt, white rock salt and PDV salt, which are discussed further in Appendix D. Appendix D shows that British Salt's PDV bulk prices in the UK appear to be around [X] per cent more expensive than an overseas salt producer's white rock salt used for food or industrial purposes. (The reasons why these price differentials do not appear to have caused widespread customer substitution of white rock salt for PDV are discussed in paragraphs 4.32 to 4.36.) British Salt's PDV bagged prices appear to be around [X] per cent cheaper than another overseas salt producer's bagged solar salt prices, although some solar salt price estimates provided by a distributor and another producer suggested that this difference was nearer 10 per cent (the reasons for this difference are unclear). British Salt told us that its PDV prices would need to rise by 10 to 15 per cent before some customers would consider switching to imported (solar or white rock) salt.
- 4.42 In relation to compacted salt, we did not have price information regarding compacted salt made from vacuum salt, solar/sea salt and white rock salt.

Types of white salt: supply-side substitutability

- 4.43 We now turn to whether a 5 per cent price rise by a hypothetical vacuum salt monopolist could cause another firm to start supplying, at short notice, an effective substitute to the product in question. This supply-side substitution would usually come from firms with existing facilities providing similar products and/or operating in adjacent areas. Supply-side substitution could potentially come from existing UK producers and foreign producers, and possibly even distributors; that is, a white rock salt or solar/sea salt producer (or indeed anyone else) switching to manufacturing vacuum salt at short notice in response to a SSNIP in relation to vacuum salt.
- 4.44 We were told that the facilities required to manufacture vacuum salt were completely different from the facilities required to manufacture white rock salt or solar/sea salt, and we therefore considered that the switching of such manufacturing capability would not be possible in the short term (ie within one year) and without substantial investment.

Types of white salt: conclusion

- 4.45 Although we noted examples of customers substituting between vacuum salt and both solar/sea salt and white rock salt, we considered these to be small-scale substitutions which were insufficient for us to form a view that there was widespread demand-side substitutability in the UK between the different types of white salt. For example, the figures in Table 4 in Appendix C show that 93 per cent of salt used in the UK for food and food processing is vacuum salt, 98 per cent of salt used in the UK for chemicals is vacuum salt and 99 per cent of water conditioning salt used in the UK is vacuum salt. The only exception to this appears to be in 'general industrial' applications (which we understand to include some very low priced applications such as fertilizers and fish curing), where only 56 per cent of salt is vacuum salt. Our customer survey indicated that a significant majority of vacuum salt customers did not regard white rock salt or solar/sea salt as realistic alternatives. We did not consider that solar salt and white rock salt would pass an SSNIP test in relation to PDV salt.
- 4.46 We saw no evidence that would have led us to conclude that there was supply-side substitutability between vacuum salt, white rock salt and solar/sea salt.

- 4.47 We therefore concluded that the relevant product market based on both demand- and supply-side substitutability was no larger than vacuum salt, and did not include white rock salt or solar/sea salt.
- 4.48 We noted that the evidence indicated that there might be more substitutability between white rock salt, solar/sea salt and vacuum salt in continental Europe than in the UK. In our view, this reflected the fact that all white rock salt and solar/sea salt was imported to the UK and therefore (a) it was subject to the various barriers to imports that are set out in the Geographic market section of this report in paragraphs 4.66 to 4.78 and (b) due to lack of indigenous production of white rock salt and solar/sea salt, the UK market had developed in such a way that vacuum salt was the predominant type of white salt used. We considered that, even if white rock salt and solar/sea salt were included within the same product market as vacuum salt, this would not have had a significant effect on our analysis of the impact of the merger on competition in the relevant market(s).

Product market: conclusions

- 4.49 As a result of the analysis in the preceding sections, we considered that the relevant product markets for the purposes of this inquiry were:
- (a) the market for PDV and compacted salt; and
 - (b) the market for pharmaceutical salt.
- 4.50 We did not see any evidence that bulk and bagged versions of PDV were in separate product markets, nor that bulk and bagged versions of granular salt were in separate product markets. Further, although different salt producers and distributors vary in the extent to which they focus on different types and sizes of customer, we did not find sufficient evidence to conclude there were separate customer markets (or segments of markets that need to be considered separately).
- 4.51 We found that, despite similarities in marketing and the fact that some consumers may be prepared to substitute low sodium salt for conventional salt on health grounds, low sodium salt was not in the same product market as conventional salt as a result of its significantly higher price.
- 4.52 We did not see any evidence of customers switching to electronic water conditioning despite its apparent cost advantage compared with water softening using salt. We did not therefore consider that electronic water conditioning was an economic substitute for water softening using salt.

Geographic market

- 4.53 In this section we consider the appropriate geographic market definition for each of the product markets identified in the previous section.

Pharmaceutical salt

- 4.54 In relation to pharmaceutical salt, British Salt suggested that the market for pharmaceutical salt was at least EEA-wide. We were told that NCSW, the only UK producer of pharmaceutical salt, exported about [§] per cent of its production to customers in [§]. British Salt told us that Demetree Salt, LLC, a US company which had a substantial common shareholder with BS Holdings, was active in the production of pharmaceutical salt and exported between one-fifth and one-quarter of

its production around the world, including to South America, the Far East, Mexico and Australia. We were also aware that at least [X] per cent of pharmaceutical salt used in the UK is imported. We therefore took the view that the relevant geographic market for pharmaceutical salt was at least Europe, and might even be wider. The remainder of this section therefore relates to PDV and compacted salt only.

PDV and compacted salt

- 4.55 British Salt suggested that, leaving aside pharmaceutical salt, the relevant market for the purposes of this inquiry was the market for white salt in the UK. However, as explained in the previous section, we concluded (leaving aside pharmaceutical salt) that there was a single market containing both PDV and compacted salt and that UV salt, white rock salt and solar/sea salt were not in this market. In relation to PDV and compacted salt, we considered three questions:
- (a) whether the geographic market was wider than the UK and the Republic of Ireland;
 - (b) whether the geographic market was Great Britain or the UK and the Republic of Ireland; and
 - (c) whether there were separate geographic markets within Great Britain.
- 4.56 There did not appear to be any significant product differences between PDV and compacted salt in the UK and EU. All vacuum salt must meet required quality control standards and products are relatively homogeneous. In the context of the application of a SSNIP framework to the geographic market, we therefore looked at (a) geographic strategies, (b) pricing differences, and (c) the role of imports (and, in particular, the barriers to imports) to help us answer the questions set out in the previous paragraph.

Geographic market wider than the UK and the Republic of Ireland?

Geographic strategies of firms

- 4.57 British Salt, Salt Union and the major European salt producers each seemed to view Continental Europe as a separate strategic market from the UK and the Republic of Ireland in relation to PDV and compacted salt. Within the UK, the existence of national distribution networks and national purchasing agreements suggested that the UK might be a separate market to the rest of the EU. Moreover, British Salt stated that it did not advertise in any region outside the UK. (The relationship between Great Britain, the UK and the Republic of Ireland in terms of salt supply and its impact on the appropriate geographic market definition is addressed in paragraphs 4.80 to 4.84.) We consider in paragraphs 4.70 to 4.72 the geographic strategies of customers.

Pricing differences

- 4.58 Price differences are another factor that suggests that the UK and the Republic of Ireland are not in the same market as continental Europe. Salt is a relatively low value product with high transport costs (and high fixed costs of production).

Appendix D shows that UK¹⁴ prices are higher on a delivered basis than prices in Continental Europe and the cost of shipping bulk or bagged salt to a UK port is £12 to £17 a tonne on a cost, insurance and freight (CIF) basis.

- 4.59 British Salt argued that, in response to a 5 per cent price increase in the UK by a supplier of PDV or compacted salt, UK distributors would react quickly by sourcing increased volumes of vacuum (and other) salt products from overseas suppliers with whom they have existing, long-established supply arrangements. We heard little evidence of this type of behaviour by distributors and considered that it would not make an SSNIP in relation to UK PDV and compacted salt unprofitable. The role of distributors in relation to competition in the relevant market(s) is discussed further in paragraphs 5.66 to 5.74.

The role of imports

- 4.60 It is important to examine the role of imports for the purposes both of defining the appropriate geographic market and understanding the extent to which imports are a competitive constraint within any relevant market we define. There is considerable overlap in the analysis that must be carried out to address these two issues. Even if the market were to be defined as no wider than the UK and the Republic of Ireland, imports may provide a competitive constraint in that market. This is discussed further in paragraphs 5.55 to 5.65.
- 4.61 The 1986 MMC report noted that the competition from imports was principally confined to white rock salt. A small quantity of solar salt was also imported. It was suggested that the purchaser's requirement for small regular deliveries tended to limit the scope for imports. It pointed out that any potential importer would have to set up some form of warehousing or bagging plant between the port and customers to meet requirements on delivery. Moreover, the MMC noted the existence of double handling costs and costs of transportation. We noted, however, that many UK distributors had storage and delivery facilities in the UK which enabled them to make deliveries in line with customer requirements.
- 4.62 When the price controls on the UK white salt industry were lifted in 2001 following the change in ownership of British Salt, the Director General of Fair Trading noted that 'overseas suppliers such as Frima (a Dutch manufacturer), Akzo, and Solvay were identified as major and increasingly important sources of actual and potential salt imports'. We consider the trend in imports since the lifting of the price controls and the competitive position of foreign producers in Appendix F and paragraphs 4.63 to 4.65.

Import data and trends

- 4.63 We examined statistics from two different sources regarding the levels of salt imports to the UK (covering both vacuum salt and other types of white salt). We also collected data from ESCO, Akzo and Salins du Midi (since British Salt told us that these were their primary import competitors) regarding the volume of salt they have supplied to the UK in the period 2002 to 2004. Our analysis of this data is set out in Appendix F.
- 4.64 It appeared from the data in Appendix F that, although the total level of imports varies a little from year to year, imports had only had a limited share of white salt sales in

¹⁴The use of UK data throughout this report is not intended to imply anything about the appropriate scope of the geographic market, and simply reflects the basis on which data has been made available to us during the course of our inquiry.

the UK. Although there appeared to have been an upturn in white salt imports to the UK in 2004, we did not see evidence to suggest a persistent growth trend in vacuum salt imports over the last five years, either in absolute terms or in terms of the proportion of UK demand met by imports.¹⁵ Combined vacuum salt import volumes from the major European salt producers appeared to have been relatively stable over recent years, although they had had some successes in relation to certain end-use applications.

Switching to and from importers

- 4.65 We obtained data from the three major European salt producers regarding the number of customers and volume of salt that had switched to and from them in the period 2002 to 2004. This is set out in Appendix G. In terms of customer numbers, the analysis does not reveal much switching from UK producers directly to foreign producers.

Barriers to imports

- 4.66 As part of our application of an SSNIP framework, we considered the barriers to imports to be:
- (a) transport costs;
 - (b) customer behaviour;
 - (c) security of supply;
 - (d) exchange rate risk; and
 - (e) (in the case of imports from outside the EU) import duties.

Transport costs

- 4.67 We set out our analysis of the evidence we have received in relation to transport costs in Appendix D.
- 4.68 We were told and accepted that UK-based salt producers had a competitive advantage over foreign producers in servicing UK customers because foreign producers incurred additional freight costs in transporting salt into the UK. These freight costs were increased by the UK's adverse balance of trade in goods generally with Continental Europe. We were told that transport costs from Continental Europe to the UK were more than double transport costs from the UK to Continental Europe because more loads were coming into the country than were leaving, resulting (for example) in lorries returning to Europe without a backhaul load.
- 4.69 British Salt argued that foreign producers which had a long-term commitment to exporting salt to the UK were prepared to absorb variations in transport costs in order to develop and maintain relationships with distributors and customers in the UK. Whilst this may be the case, the higher transport costs that they face in order to sell

¹⁵The market share figures presented in Table 1 of Appendix C relate to shares of the relevant product market of PDV and compacted salt (not white salt). Figure 2 in Appendix E indicates demand for PDV and compacted salt in the UK from 2000 to 2004. In the absence of evidence of persistently decreasing demand and increasing import volumes of PDV and compacted salt, we concluded that imports have been a relatively stable proportion of UK demand for PDV and compacted salt over the last few years.

in the UK must inflate their overall cost base and influence their decisions (and limit their ability) in relation to exporting salt to the UK.

Customer behaviour

- 4.70 Depending on the end use of the salt, quality of product was mentioned during hearings and in responses to questionnaires as a key requirement for customers and a potential barrier to customer switching and, hence, to new entry. Customers may act on their perceptions that imports are of poorer quality, even though we were told that the major European salt producers met all relevant standards, and that their vacuum salt products were clearly accepted by end-users in Continental Europe for use in the full range of applications. (Substitutability and customer perceptions of imported white rock salt and solar/sea salt have already been discussed in paragraphs 4.30 to 4.35.)
- 4.71 Our customer survey indicated that 56 per cent of customers who mainly purchased PDV felt that switching to imported PDV salt was not very, or not at all, realistic, and the figure was 54 per cent among customers who mainly purchased compacted salt.¹⁶ The main reasons that imported salt was felt not to be realistic were price (too expensive), transport costs, insufficient required volumes to be worth importing and the potential for delivery problems. In contrast, only 19 per cent and 21 per cent of customers felt that it was not very, or not at all, realistic to switch to an alternative British salt supplier of PDV salt and compacted salt respectively.
- 4.72 We acknowledge that this analysis and the customer survey results may understate the number of customers switching to imported salt supplied via distributors. Foreign producers' import volumes to the UK have fluctuated in this period, and customers may not realize that, in purchasing salt from a UK distributor, they may be purchasing imported salt.
- 4.73 British Salt suggested that the food industry was generally risk averse in sourcing products and that importation of bulk PDV from overseas producers might be perceived as a higher risk source, for example in relation to contamination. British Salt told us that this was not an issue for bagged PDV or for bulk PDV that was imported by tanker, but only for 'loose' bulk PDV (ie bulk PDV not imported by tanker). As with perceptions of quality, customers may nevertheless act on their perceptions that imported salt has an increased risk of contamination, even if this is not necessarily the case.
- 4.74 We were also told that incumbent salt suppliers had a distinct advantage when it came to quoting prices which further inhibited customer switching to imports. Akzo stated that UK customers often gave their current salt supplier the opportunity to provide the last quote as a consequence of the longstanding business relationships that existed. British Salt also told us that it hoped to have an opportunity to provide the last quote in a price negotiation with an existing customer. We considered that this gave the incumbent supplier a negotiating advantage over its competitors and highlighted the importance of customer relationships and inertia.
- 4.75 As discussed further in paragraph 5.46, there is considerable evidence of inertia among salt purchasers in the UK. This acts as a barrier both to switching in general, and to switching to imports in particular.

¹⁶37 per cent of customers who mainly purchased PDV either already used imported salt or considered that it was very, or quite, realistic to switch to imported salt. The figure for compacted salt was the same.

Security of supply

- 4.76 Producers, distributors and customers noted the importance of security of supply as a factor when deciding upon a salt supplier in hearings and in responses to questionnaires. This was confirmed by our customer survey in which 77 per cent of all respondents said that reliable delivery was a very important factor in their choice of supplier. Many customers operate on a just-in-time basis or do not have the storage facilities to keep large stores of salt which means that suppliers need to be able to ensure ready supplies of salt. This has led to many customers preferring to purchase directly from UK salt producers as they believe that this will give the best security of supply in comparison to relying on foreign producers directly or through a distributor. Our survey identified that customers felt that delivery problems were a significant reason why imported salt was not seen as a realistic alternative to UK-sourced supplies. We acknowledge that many of the large UK salt distributors operate storage depots and distribution warehouses throughout the UK such that they too can offer just-in-time deliveries to customers. However, again it seems that customer perceptions may influence purchasing behaviour. Further, distributors would incur costs for building and operating storage facilities which must also be taken into account.

Exchange rate risk

- 4.77 We were told by a prominent distributor and other market participants that the exchange rate risk could influence their salt buying decisions. There is an inherent risk that any variation of the exchange rate from the time of entry into a purchasing agreement could potentially result in unforeseen costs. Although either the customer or the supplier can hedge against such risks to some extent, it is more difficult to hedge against longer-term shifts in exchange rates. Variation in exchange rates is therefore an additional issue faced by firms seeking to import salt into the UK not faced in relation to UK-produced salt. We were told that fluctuation in exchange rates was one reason that distributors might seek (but not necessarily receive) price support from foreign producers (price support is discussed further in paragraph 5.70). For these reasons, variation in exchange rates acts as a barrier to imports in our view.

Import duties

- 4.78 A tariff of up to €2.60¹⁷ a tonne applies to imports of some salt products from outside the EU. We were told that it was feasible to import some salt products from Chile, Brazil, Morocco and Israel.

Geographic market wider than the UK and the Republic of Ireland: conclusion

- 4.79 The analysis set out in the previous paragraphs has shown that imports of PDV and compacted salt from outside the UK and the Republic of Ireland hold a limited share of supply in the UK¹⁸ and, although there is variation between years, there is little sign of the sort of overall growth that might indicate that they are playing an increasingly important role in competing with the UK producers. Transport costs, long-standing business arrangements, opportunities for incumbent suppliers to quote

¹⁷Equivalent to £1.77 at the time of writing.

¹⁸As will be described in further detail in paragraph 4.81, vacuum salt is not manufactured in the Republic of Ireland and therefore no vacuum salt is imported into the UK from the Republic of Ireland. We did not have data on the extent of non-UK vacuum salt imports into the Republic of Ireland so were unable to consider the share of supply of non-UK vacuum salt in the Republic of Ireland.

last, customer perceptions, costs incurred to ensure comparable levels of security of supply, exchange rate risk and, for imports from outside the EU, import duties, all provide barriers to imports through the imposition of additional costs and risks on non-domestic manufacturers or distributors who import salt. Consistent with the operation of such barriers, we observed ex-works prices in the UK to be higher than in Continental Europe. Even if UK producers were currently engaged in pricing at a delivered price similar to imports, we considered that a 5 to 10 per cent price rise could take place profitably owing to non-price factors, such as customer perceptions. Taking all these barriers together alongside the evidence on prices and the relative stability in the level of imports over time, we considered that an SSNIP by a hypothetical monopolist of production of PDV and compacted salt in a UK and Republic of Ireland market would not lead to sufficient imports from outside the UK and Republic of Ireland to make such a price increase unprofitable. In reaching this view we noted that the relevant critical loss volume (based on the estimates produced by British Salt and Salt Union)¹⁹ would appear to be broadly similar to the total volume of imports of vacuum salt in 2004. Therefore we considered the appropriate geographic market to be no wider than the UK and the Republic of Ireland and potentially limited to Great Britain.

Geographic market: UK and the Republic of Ireland or Great Britain?

- 4.80 Given that we considered that the market was not wider than the UK and the Republic of Ireland, one issue that needed to be addressed was whether the market should be confined to Great Britain or whether it should also include Northern Ireland and the Republic of Ireland.
- 4.81 We were told that there were no manufacturers of vacuum salt in Northern Ireland or the Republic of Ireland, although there was a rock salt mine that produces de-icing salt in Carrickfergus. British Salt accesses the Northern Irish market through its wholly-owned distributor, Irish Feeds, and supplied [redacted] tonnes of PDV and [redacted] tonnes of compacted salt in 2004. British Salt stated that competing suppliers of white salt products in Northern Ireland included Walkers Eurosalt, Devenish, Salinity, Univar and Albion Chemical Distribution (Albion).
- 4.82 British Salt told us that it considered it was possible that Northern Ireland and the Republic of Ireland were one geographic market, and that Great Britain was a different geographic market as a result of the transport costs for shipping salt across the Irish Sea. Further, it told us it believed that pricing was comparable in Northern Ireland and the Republic of Ireland.
- 4.83 [redacted] We were also told that distributors from Northern Ireland and the Republic of Ireland sold to customers across the island of Ireland.
- 4.84 However, the inclusion of Northern Ireland and the Republic of Ireland within the relevant geographic market is not material to our inquiry. This is because there are no manufacturers of vacuum salt in either Northern Ireland or the Republic of Ireland, and the small volumes sold there have little effect on market shares. We therefore considered that the geographic extent of the market for PDV and compacted salt was the area covered by Great Britain, and might include Northern Ireland and the Republic of Ireland as well, but was no wider than that.

¹⁹See paragraph 4.39.

Separate geographic markets within Great Britain?

- 4.85 We saw some evidence that salt demand in Great Britain was clustered near the existing vacuum salt plants in Cheshire where certain large customers had chosen to locate to minimize transport costs. Also, we heard evidence that imports might be more of a competitive constraint in some areas than others, for example around the main ports, particularly those on the east coast of Great Britain. However, having considered the location of customers that have switched between British Salt and NCSW, and the location of distributors' storage and warehousing facilities, we did not find sufficient evidence to support the view that there were separate geographic markets within Great Britain.

Conclusions on market definition

- 4.86 We concluded that the relevant markets for the purposes of this inquiry were:
- (a) the supply of pharmaceutical salt in Europe or more widely; and
 - (b) the supply of PDV and compacted salt in Great Britain or in the UK and the Republic of Ireland;

and all subsequent analysis was carried out on this basis.

- 4.87 We did not consider that our decision on whether or not the appropriate geographic extent of the market for PDV and compacted salt was Great Britain or the UK and the Republic of Ireland would alter our assessment of the effect of the merger on competition in the relevant markets.

5. Assessment of the competitive effects of the merger

- 5.1 In this section we look at the competitive effects of the acquisition of NCSW by British Salt in the relevant markets. We first consider what was likely to have happened if the merger had not occurred (the counterfactual). We then discuss factors affecting rivalry in the relevant markets, existing levels of competition and market entry. We finally consider the expected impact of the merger.

The counterfactual

- 5.2 For the two years prior to the merger, NCSW was trading profitably.²⁰ We considered whether, absent the merger, NCSW would have continued to operate as a viable competitor in the market.
- 5.3 We began our consideration of the counterfactual by considering the views of British Salt and the former shareholders of NCSW regarding the future of NCSW, had the merger not taken place. We next examined the issues they identified as being relevant to NCSW's continuing viability. In particular, we considered the former shareholders' perceptions of these issues and what they intended to do with NCSW in the light of their perceptions. We then considered whether and, if so, how and when the former shareholders would have brought to a conclusion their plans for the NCSW business (see paragraphs 5.7 to 5.15).

²⁰See Table 3 in Appendix B.

The views of the former shareholders of NCSW and British Salt

- 5.4 Despite strong financial results in 2004 and positive financial projections for 2005, the former shareholders of NCSW initially told us that they believed that NCSW was not a viable economic entity in the medium term and that, had they not sold it, it would almost certainly have closed in the short to medium term. After the publication of our provisional findings report, the former shareholders told us that, as a result of certain market developments discussed further in paragraph 5.17, if British Salt had not acquired NCSW, they would have expected NCSW to have ceased salt production during 2006, if not before. Similarly, British Salt initially submitted that NCSW's viability beyond the short term was threatened. After publication of our provisional findings report, British Salt told us that, because of the same changes to market developments cited by the former shareholders, it was its view that, absent the merger, the former NCSW shareholders would have accelerated their plans to close NCSW. In particular, British Salt told us that it expected that NCSW would be cash negative in December 2005, and that it would continue to be so, on a month-by-month basis, from then onwards.
- 5.5 The former shareholders of NCSW further argued that, even if the issues facing NCSW would not have caused NCSW to cease salt production during 2006, NCSW's competitive impact would—on a forward looking basis—have been expected to diminish over time as a result of these issues and would have certainly been less than its current market share would otherwise suggest.

The issues facing NCSW and the stated strategy of the former shareholders

- 5.6 The main issues that affect the commercial viability of NCSW, as identified by the former shareholders of NCSW and/or British Salt, were:
- (a) the risk of subsidence caused by NCSW's method of extraction of brine from the ground;
 - (b) NCSW's inability to secure commercially viable alternative sources of brine and, therefore, its inability to grow its market share;
 - (c) NCSW's susceptibility to increasing energy costs;
 - (d) NCSW's susceptibility to other additional costs arising from environmental issues (the climate change levy and waste management);
 - (e) NCSW's susceptibility to price deflation;
 - (f) the risk of increasing supplier base rationalization by major customers;
 - (g) increased competitive pressure on NCSW from British Salt in the absence of the merger as a result of British Salt's loss of sales of UV salt due to the closure of the Albion Inorganic Chemicals chlor-alkali plant, to take effect in November 2005 (as discussed at paragraph 3.13);
 - (h) the risk of adverse regulatory changes and the consequential additional burden on NCSW's limited management resources; and
 - (i) NCSW's inability to identify suitable successor management.
- 5.7 The former shareholders of NCSW told us that in about 1997, they came to the conclusion that 'NCSW's days were numbered and it simply could not continue as it

was'.²¹ By 2003, the former shareholders had concluded that they wanted to exit the business as fast as possible but, in doing so, they wanted to meet NCSW's liabilities and generate value for the shareholders (which, at that time, they anticipated would take two or three years). These liabilities included legal obligations to creditors and in relation to site rehabilitation, and both legal and perceived moral obligations to employees.

- 5.8 The former shareholders also told us that they had sought to explore all the options available for NCSW, including diversification, the takeover of British Salt, alternative sources of brine (see paragraph 11 in Appendix I), receivership, short-term trading, sale to a foreign company, sale of the NCSW site for property development, trade sale to an existing UK salt producer and the possibility of NCSW becoming a distributor or only manufacturing and selling pharmaceutical salt.
- 5.9 The former shareholders told us that they had briefly considered the option of putting NCSW into receivership in 2003, but, they said, such an option would only have been pursued if NCSW were to lose a major customer in a critical market area such as pharmaceutical salt, or there were to have been a sudden worsening in the subsidence problem, or there were to have been any [✂].
- 5.10 The former shareholders told us that, from early 2003 until the sale to British Salt was completed in 2005, they had actively pursued short-term trading as an option (ie running the business for only as long as it took to achieve as fast as possible the objectives of (a) paying off all creditors; (b) providing employees with at least the statutory minimum redundancy payments (and, if possible, more); and (c) returning any residual value to shareholders. In January 2003, it was anticipated that it might have taken two or three years to generate sufficient cash to meet these objectives.
- 5.11 The former shareholders told us that, if market conditions improved such that they could have met these objectives more rapidly, most of them would have wished to bring forward their exit from the business. They also told us that, if market conditions had deteriorated such that the achievement of these objectives was jeopardized, this would also have brought forward their exit from the business.
- 5.12 After the publication of our provisional findings report, the former shareholders made clear to us that, although they had been pursuing the possibility of a trade sale of NCSW to an existing salt producer, after May 2003 they did not take this any further (until they were again approached by British Salt in 2004) as a result of their understanding that any trade sale to British Salt or Salt Union would be referred by the OFT to the CC.
- 5.13 By 2004, when British Salt again made overtures regarding a merger with NCSW, NCSW had already cleared the £1.5 million of bank loans that it had held when the two companies had discussed merging in 2000/2001. It also had a positive cash balance of £0.25 million. The former Managing Director of NCSW told us that he believed that, at this point, if British Salt had not again expressed interest in purchasing NCSW, and depending on how well the business performed, he was still approximately two to three years away from being in a position to wind up the company in a satisfactory manner, which would include enhanced redundancy payments, paying off all creditors and a return to shareholders, provided there were no adverse market developments in the meantime. The former shareholders told us that a major concern for them was that, whatever direction the company took, it was

²¹Paragraph 29 of the third party submission of the former shareholders of NCSW available at www.competition-commission.org.uk.

important not to signal to the market that the company was being wound down as this would only have hastened any decline.

- 5.14 After the publication of our provisional findings report, the former shareholders told us that they had regarded paying off the creditors and the making of the statutory minimum redundancy payments as core objectives. They stated that they would not have delayed their exit from the business—and risked an erosion of the assets available to them to meet their core objectives—in order to achieve the other objectives of paying employees more than statutory redundancy payments and making any substantial return of capital to shareholders.
- 5.15 Following the publication of our provisional findings report, the former shareholders told us that by January 2005, NCSW had had sufficient funds to meet these core objectives. They argued that, from that point on, had British Salt not purchased NCSW, the former shareholders would easily have been able to take the decision to exit the NCSW business in the event of deteriorating market conditions to avoid erosion of the assets available to them to meet their core objectives. They further argued that the steep increases in energy prices had led them to expect that, although they did not have access to NCSW's financial data following the acquisition in February 2005, absent the merger, NCSW would have ceased salt production during 2006, if not before.

Our assessment of the counterfactual

- 5.16 The issues facing NCSW as set out in paragraph 5.6 appeared to us to fall into four categories:
- (a) issues relating to how it obtained brine (issues (a) and (b) in paragraph 5.6);
 - (b) issues relating to future increases in costs (issues (c) and (d) in paragraph 5.6);
 - (c) issues relating to future decreases in revenues (issues (e) to (g) in paragraph 5.6); and
 - (d) issues relating to the scarcity of management resources (issues (h) and (i) in paragraph 5.6).
- 5.17 The effect of increasing costs on NCSW is analysed in detail in Appendix H, and the other issues facing NCSW are discussed in Appendix I. On the basis of the analysis set out in those Appendices, we took the view that:
- there were a number of serious issues facing NCSW. The most significant cost-related issue was rapidly increasing actual and projected energy costs in the context of a salt production process at NCSW that was inherently more energy intensive than those of its major UK competitors;
 - rising energy costs would have led, in the absence of a merger, to a sharp reduction in NCSW's EBITDA;²²
 - even though our estimates of NCSW's EBITDA in 2005 and 2006 depended on the precise assumptions made in relation to energy costs, reductions in other costs and the extent of NCSW's recovery of rising costs through increased

²²EBITDA was the focus of the analysis since this provided a reasonable approximation to the ability of NCSW to generate cash from trading.

sales prices, our sensitivity tests indicated that the overall effect on NCSW's EBITDA would still have been sufficiently negative to cause the former shareholders to review their exit strategy;

- in reviewing their exit strategy, the former shareholders would have been influenced by their perception that further material cost cutting was not possible; and
- they would also have been influenced by their perception of the high risk of a successful claim against NCSW as a result of subsidence linked to NCSW's method of brine extraction (known as wild brine pumping). Taken together with rising costs, we therefore needed to consider whether these matters would have altered the former shareholders' assessment of the balance between the rewards and risks of continuing the NCSW business.

5.18 In view of the issues affecting NCSW's continuing viability, the former shareholders' perceptions of these issues and our own analysis, we considered:

- (a) whether the former shareholders would have exited the business, and, if so, how;²³
- (b) the timing of any such exit; and
- (c) what would have happened to NCSW's customers in the event of such exit.

Would the former NCSW shareholders have exited the business, and, if so, how?

5.19 We believed that the various issues discussed previously were seen as significant by the former shareholders of NCSW, and we did not doubt that these issues had been critical factors in their decision to pursue options which would have enabled them to exit the NCSW business. We accepted that they had been seeking a managed exit from the business. We noted that there was evidence that, during this time, they had continued to see value in the NCSW business. For example, whilst they were keen to exit from salt production, they had not wished to advertise this, as they felt this could have damaged their relationships with their customers. Further, the former shareholders had not rushed to sell NCSW, but investigated a wide range of alternatives, as set out in paragraph 5.8.

5.20 In the light of the evidence of the former NCSW shareholders regarding their strategy, and our analysis of the issues facing the NCSW business as set out in Appendix I, we formed the expectation that, absent the merger, the former shareholders would have closed NCSW following a period of short-term trading.

Timing of closure

5.21 The former shareholders of NCSW told us they were unable to identify a family successor to the former Managing Director of NCSW. For that reason, we considered that September 2007, the date at which the former Managing Director would have reached his contractual retirement age, was clearly a focal point for the former shareholders of NCSW. Given (a) significant increases in gas prices during the course of 2005 and (b) forward gas prices that for the next two years at least are projected to remain significantly above the levels of the past few years, we considered whether, absent the merger, the former shareholders would have closed

²³See paragraph 5.8 for a list of the options considered by the NCSW former shareholders.

NCSW any earlier than that. To answer this question, we analysed revised financial projections for NCSW for 2005 and new financial projections for 2006, provided to us after publication of the provisional findings report. This analysis is set out in Appendix H.

- 5.22 In the trading forecast for NCSW provided to us by British Salt in June 2005, the EBITDA for 2005 appeared stable compared with previous years. However, British Salt's revisions to this forecast and its projections for NCSW for 2006, both provided in September 2005, showed a substantial deterioration in the EBITDA for 2005 and a negative EBITDA in 2006. Our adjusted projections of the forecasts provided by British Salt to reflect the production levels that we believed would have been achieved by NCSW absent the merger—and some additional costs that we believed would also have been incurred by NCSW absent the merger—indicated a similar trend. When the range of EBITDA figures from Appendix H is seen alongside the historic EBITDA figures for the NCSW business in Appendix B, it is clear that, absent the merger, the former shareholders would have been faced with an adverse step change in EBITDA in 2005 and 2006, compared with previous years. We did not consider it material whether the EBITDA would have remained small but positive, or would actually have been negative over 2005 and 2006. In either case, we believed that this step change in performance, largely as a result of escalating gas costs impacting more heavily on NCSW than on its major competitors, would have altered the former shareholders' assessment of the risk-reward balance in continuing the NCSW business. Based on forward gas price data for the next three years that we obtained from Heren Energy Limited (Heren), a specialist energy data provider, it was apparent that an improvement in these trading conditions was not to be expected over that period.
- 5.23 The former shareholders told us they had had sufficient funds by January 2005 to pay off NCSW's creditors and make the statutory minimum redundancy payments to employees. If faced by the adverse step change in performance indicated by our financial projections, we considered that the former shareholders would have been likely to take a decision during winter 2005/06 to close the business. They would have had little expectation of any reward for continuing to run the business since, at best, our analysis indicated they could only expect small positive cash flow. Further, the longer they had continued to run the business, the greater the risk of the assets already available to them being eroded as a result of negative cash flow and/or a claim for damages as a result of subsidence, as discussed in paragraph 8 in Appendix I. In view of the evidence of the former shareholders, we believed they would also not have wished the former Managing Director of NCSW to keep the business running for longer than necessary, given [REDACTED].
- 5.24 As shown by the forward gas price data we obtained from Heren, gas prices are strongly seasonal. Having taken the decision during winter 2005/06 to close the business, and given the time required to do this, we considered that, on the balance of probabilities and in view of the information now available to us, absent the merger, production at NCSW would have continued during spring and summer 2006. This would have allowed the former shareholders to take advantage of the seasonal dip in gas prices. We further considered that production at NCSW would have ceased in late 2006 as seasonal gas prices would be due to rise at that time (although we expected that the former shareholders would have been preparing the business for closure prior to then).

NCSW's customers

- 5.25 We needed to form an expectation as to what would have happened to NCSW's customers following the closure of NCSW. The former shareholders told us that,

once NCSW was closed down, they would have sought to realize what value they could from the remaining assets of the business, principally the land. Whilst we considered it likely that the former shareholders would have attempted to sell the NCSW customer list (for PDV, compacted and pharmaceutical salt) to a new or existing market participant (or participants), we noted that the customer list would have little value except in conjunction with a secure source of salt to supply those customers. For the reasons discussed in paragraphs 4.70 and 4.73, many customers prefer to source salt from UK producers, making British Salt and Salt Union the two most likely purchasers of the customer list. Therefore, while we expected that the former NCSW shareholders would have tried to sell the customer list on the closure of NCSW, we did not expect that any such sale would have been to a non-UK producer or would have led to a new entrant into the relevant market.

- 5.26 If NCSW had closed without selling its customer list, customers would have been forced to choose a new supplier. Since we had no evidence to suggest otherwise, we expected that NCSW's customers would have been dispersed across the remaining salt producers approximately in accordance with those firms' market shares.²⁴

Pharmaceutical salt and the counterfactual

- 5.27 In the case of NCSW's pharmaceutical salt customers, we noted that there were no other UK producers of pharmaceutical salt and therefore that these customers would have had to replace any volumes previously supplied by NCSW with imported pharmaceutical salt. If, absent its merger with NCSW, British Salt had entered the pharmaceutical salt market, it would have had to go through a lengthy accreditation process (see paragraph 4.22) and it would also have had to establish its reputation in this market. Hence we considered it unlikely that British Salt would have been able to establish a significant presence in the pharmaceutical salt market in the short to medium term.

Counterfactual: conclusions

- 5.28 We concluded that the appropriate counterfactual for the purposes of our inquiry was that NCSW's former shareholders would have closed NCSW in late 2006 and that the NCSW customer list would either have been sold to another UK producer or NCSW's customers would have been dispersed across the remaining salt producers approximately in accordance with those firms' market shares. In the light of our analysis in paragraphs 5.124 to 5.126 of the effect of the merger on competition in the period after closure of NCSW, we did not need to come to a conclusion on which of the latter alternatives would have occurred. Nor, given our assessment in paragraph 5.27 above that British Salt was unlikely to establish a significant presence in the pharmaceutical salt market within the short to medium term, did we find that the merger was likely to cause an SLC in the European or wider market for the supply of pharmaceutical salt. The remainder of this report therefore focuses on the other relevant market, namely the market for the supply of PDV and compacted salt in Great Britain or the UK and the Republic of Ireland.

²⁴For these purposes, customers purchasing salt from distributors are considered to be part of the market share of the salt producer supplying that distributor, in accordance with Table 1 in Appendix C.

Factors affecting rivalry in the relevant market prior to the merger

Concentration

5.29 We took as a starting point for the assessment of rivalry in the market for the supply of PDV and compacted salt in Great Britain or the UK and the Republic of Ireland the level of concentration. Appendix C presents the market share information for the relevant market. Table 1 sets out the market shares based on volumes sold in 2004 for British Salt and NCSW, and the corresponding two-firm concentration ratios²⁵ and Herfindahl-Hirschman Index (HHI)²⁶ values for the relevant market prior to the merger. For illustrative purposes, it also shows market shares and measures of concentration assuming that there are separate product markets for PDV salt and compacted salt. Table 1 indicates that, prior to the merger, the relevant market was highly concentrated. This is also the case if PDV salt and compacted salt are considered separately.

TABLE 1 Pre-merger market concentration (based on 2004 volumes sold)

	Market for PDV salt	Market for compacted salt	Market for PDV and compacted salt
British Salt market share, %	57	24	50
NCSW market share, %	11	4	9
Two-firm concentration ratio (British Salt and Salt Union), %	83	90	85
HHI	4,062	4,977	3,790

Source: CC analysis of 2004 sales data provided by each party.

5.30 To further examine the extent of existing competition in the relevant market, we next considered the supply and demand balance, arrangements and negotiations between customers and suppliers, switching, market entry, the extent of the competitive constraint offered by imports and distributors, the business strategies pursued by NCSW and British Salt and the extent of the competitive constraint between NCSW and British Salt. There was a broader competitive dynamic in the relevant market which included the interactions between British Salt, NCSW, Salt Union, foreign salt producers and distributors. Data was not available to allow us to analyse these interactions in as much detail as we did in the case of NCSW and British Salt. In examining the extent of the competitive constraint imposed by NCSW, we looked at NCSW's production capacity, customers' perceptions of NCSW, the involvement of NCSW in competing for and gaining customers from British Salt and (where data was available) Salt Union, and finally, the price competitiveness of NCSW compared with British Salt.

Supply and demand

5.31 Many parties told us that overall demand for vacuum salt was declining in the UK. UV salt has seen the largest reduction, principally as a result of the decline of the chlor-alkali industry in the UK. It was also put to us that the use of PDV in the food industry was declining, as a result of increasing concerns about the effect of salt consumption

²⁵We have adopted two-firm concentration ratios because this is a market with two players which are substantially larger than all other rivals.

²⁶The HHI is a measure of market concentration calculated as the sum of squared market shares.

on human health.²⁷ However, some parties told us that there might be modest growth in the use of salt for water softening, and also for nitrate removal by some water companies, whilst demand for salt for other applications, such as animal feed and hide and skin processing, was static.

- 5.32 Appendix E sets out UK salt demand over the last five years, alongside the vacuum salt production capacities of the UK salt producers and some major non-UK salt producers. It is clear that there is over-capacity in terms of UK production capacities for PDV and compacted salt as compared with current demand. Without significant increases in overall demand for salt in the future—for which we saw no evidence—over-capacity is likely to remain a feature of UK vacuum salt production. We noted that spare capacity for PDV and compacted salt was not evenly distributed between the UK vacuum salt producers but was disproportionately held by British Salt, and that British Salt had more flexibility than its UK competitors in production of different types of vacuum salt.

Supply arrangements and negotiations

- 5.33 There is a range of sizes of customer for PDV and compacted salt, but even the largest customers for PDV salt represent only small proportions of the UK producers' volumes and sales values. The largest compacted salt customers (which are often distributors) have a higher share of producers' volumes because of the prevalence of distributors in selling compacted salt to end users. For example, British Salt sells 7 per cent of its PDV salt production volume to its largest PDV customer, and 19 per cent of its compacted salt production volume to its largest compacted salt customer. The equivalent figures for NCSW are [x] per cent and [x] per cent respectively.
- 5.34 We saw evidence that customers tend to have long-term relationships with their salt suppliers. Our customer survey indicated that, among respondents mainly using PDV salt, the average length of relationship with their principal supplier was about nine years, whilst for compacted salt, the figure was about 8.5 years.
- 5.35 In our customer survey, the most frequently quoted reason for choosing a particular supplier was low price. However, delivery reliability scored most highly in terms of importance when respondents were asked to rate different factors in supplier choice, followed by low price and ability to meet tight technical specifications. Our customer survey also indicated that, for the vast majority of respondents, salt was less than 4 per cent of their overall operating cost base, and for many, particularly PDV customers, it was less than 1 per cent. This was also confirmed by what some large users of salt told us during hearings.
- 5.36 We were told that customers for whom salt was a critical input to their production processes valued the ability to obtain salt at short notice, and that they considered that direct relationships with (and proximity to) the UK producers enhanced their security of supply.
- 5.37 We also saw evidence that a minority of customers and distributors dual-sourced (or in some cases multi-sourced) salt, making switching between producers easier. Our customer survey found that 25 per cent of respondents used more than one supplier. British Salt told us that around 3 per cent of its combined customer base dual-sourced from British Salt and NCSW.

²⁷The UK Food Standards Agency has adopted targets to reduce salt intake from 10g to 6g a day by 2010, with an interim target of a 10 per cent reduction by 2005/06.

- 5.38 We were told that some large customers, particularly in the utilities sector, operated a formal tendering process for their salt requirements. However, this seemed to be an exception to the more informal arrangements that were usually in place.
- 5.39 British Salt told us that it had three forms of supply agreement with its customers, as well as undertaking ad-hoc sales to customers with whom it had no ongoing relationship. It has formal contracts for a small number of large customers (as does NCSW), with terms that range from six months upwards, with a very small number having terms of over 12 months. It also has what it calls 'letter agreements', whereby, following a price negotiation, British Salt commits to supply the customer at an agreed price for a fixed period, typically 12 months, in return for an expectation that a customer will take a particular volume of salt. British Salt told us that it acted on the basis that it was bound to the price in such letters, but that there was no binding volume commitment on behalf of the customer. Thirdly, British Salt has what it terms 'non-contract customers', to whom British Salt offers a price in expectation of a particular volume of business until further notice.
- 5.40 British Salt told us that negotiations for the supply of salt typically involved initial discussions over the telephone or via email between sales representatives and purchasing managers. Prices were negotiated individually with each customer. Salt Union told us that it tended to write to small customers first when it wished to change its prices, and then over the course of the next few months to renegotiate with large customers and distributors. Distributors were often given one month to inform their customers.
- 5.41 Both UK and non-UK producers told us that they did not operate or publish standard price lists. British Salt told us that it held a price list for internal reference for sales to spot purchasers with whom it had no existing supply relationship. British Salt estimated that [X] per cent of its sales were made at list price. As part of the negotiation process, British Salt told us it used a different set of minimum prices as an internal guide for sales staff, below which they had to obtain authorization to negotiate. NCSW maintained an internal price list which was used by its sales staff as the basis for negotiation.
- 5.42 We were told by different salt producers that the negotiation process might take anything from one week to a few months. British Salt considered the length of the negotiation process was a function of volume, such that negotiations with larger customers tended to take longer.
- 5.43 We received data from British Salt regarding the competitive bidding situations in which NCSW had participated since 2002. An analysis of this data is set out in Appendix G.
- 5.44 When customers negotiated prices for renewal of agreements with an existing supplier, we were told that typically the incumbent supplier was given the opportunity to make a last offer. This gave the incumbent supplier a distinct competitive advantage and might be a factor contributing to low levels of customer switching, as set out in the following paragraphs.

Switching

- 5.45 British Salt gave us a list of British Salt and NCSW customers that had switched between the two companies in the period 2000 to 2004. Our analysis of this data is set out in Appendix G. As discussed in paragraph 5.94, our customer survey indicated that switching ranges somewhere between 6 per cent and 10 per cent a year (of a particular supplier's customer base).

5.46 British Salt stated that there were no technical barriers to switching between suppliers and no legal restrictions. Switching costs have already been discussed in relation to substitutability between vacuum and non-vacuum salt (see paragraph 4.36). Whilst the costs of switching may not be high in absolute terms, we consider that they may be high for many customers in relation to the cost of salt purchased. In addition, we saw no evidence of these costs being offset by benefits targeted at switchers, for example through introductory price offers to encourage switching. The costs of switching between suppliers in general include:

- (a) due diligence costs. Where traceability is important there may be a need to carry out due diligence on the product before it can be used, for example in the food and animal feed industries;
- (b) changing production processes. Different specifications of salt may require production processes to be modified to accommodate different grain sizes or chemical compositions; and
- (c) customer preferences. Customers in general appear not to change supplier much, as shown in Appendix G. This appears to be because their perception is that the risks of switching, in terms of security of supply, losing access to a 'tried and tested' product and additional management effort, are greater than the reward of potentially lower prices for a relatively low value product which is nevertheless often a key input. Moreover, salt customers tend to place a reliance on maintaining long term supplier relationships.

Market entry

5.47 There are two important questions in relation to entry to the market for PDV and compacted salt (regardless of whether the geographic scope of the market is considered to be Great Britain or the UK and the Republic of Ireland):

- (a) is there an ability and incentive to enter into production from within the relevant geographic market; and
- (b) is there an ability and incentive to begin to import PDV and compacted salt into the relevant geographic market?

5.48 To understand the scope for market entry, we examined the behaviour of existing market participants and how this might relate to the desirability of market entry. Salt Union told us that, due to declining overall demand, it would not commit to any significant new capital expenditure to expand salt production. British Salt and the former shareholders of NCSW had similar attitudes to that of Salt Union in relation to further significant investments. We considered that such investments were not likely in this industry in order to expand production.

5.49 Imported PDV and compacted salt is available in the market both via direct purchases from foreign vacuum salt producers and via UK distributors. For the reasons set out in paragraph 4.79, imported PDV and compacted salt has a limited market share and there is no pattern of overall growth in vacuum salt imports (either in absolute terms, or in terms of market share, although there was an upturn in relation to white salt imports in 2004). [X] Akzo has recently put its Salt Specialties business²⁸ up for sale.

²⁸Akzo's Salt Specialties business includes industrial grade, food grade and pharmaceutical grade salt products.

- 5.50 In relation to the new entry of imported salt products into the relevant market via UK distributors, we were told by some distributors that they sourced and imported new salt products specifically to meet niche customer needs. It appeared that such new products were often sourced from salt producers who already had a long-term presence in the UK.
- 5.51 Historically, there had been some entry and exit among salt distributors. For example, Avon Salt was launched in 1989 and Salt Union purchased Direct Salt in 2004 (Direct Salt continues to distribute both Salt Union products and other domestic and imported salt products). See paragraphs 5.66 to 5.74 for a discussion of the extent of the competitive constraint offered by distributors in the relevant market.
- 5.52 Overall, we considered that entry of new firms (from either inside the geographic market, or outside the geographic market for supply into it) was most unlikely. This was because of declining demand for salt within the market, the existing excess capacity in UV salt feedstock production (and, to a lesser extent, in PDV drying capacity). Further, the reluctance among existing market participants located within the relevant market to make any significant investments indicated to us that new firms would be unlikely to make the necessary investments to enter the market.
- 5.53 We identified several barriers to entry to the relevant market. These included the set-up costs for a vacuum salt production facility (including obtaining access to brine). Further, to enter the relevant market, a firm must build demand, which requires at the least accessing customers, transporting salt to them and building a reputation for quality, reliability of delivery and overall security of supply. We saw evidence of significant barriers to building demand, including low levels of switching, long-established customer relationships, the ability of the incumbent salt supplier to make a final offer during negotiations, and the lack of customer strategic focus on salt (since for most customers it is a small fraction of their overall cost base), resulting in considerable customer inertia.
- 5.54 We therefore considered that new entry or the threat of new entry was unlikely to be sufficient to constrain the behaviour of the existing firms in the market for PDV and compacted salt. We further considered it unlikely that the merger of NCSW and British Salt would have a significant effect on barriers to entry to the relevant market as these barriers to entry would remain unchanged.

Imports

- 5.55 Imports have already been considered in the context of defining the extent of the relevant geographic market(s) (see paragraphs 4.60 to 4.78), and in the context of market entry (see paragraphs 5.49 to 5.50). As indicated earlier, we concluded that the geographic extent of the market for PDV and compacted salt was at least Great Britain, and might include Northern Ireland and the Republic of Ireland, but was no wider than this, and that there was at least a European market for pharmaceutical salt, and possibly a wider market. We also concluded that it was unlikely that new firms—from either within or outside the geographic market—would enter the relevant market.
- 5.56 We now consider the extent to which imports are a competitive constraint on the market for PDV and compacted salt in Great Britain or the UK and the Republic of Ireland.
- 5.57 British Salt argued that absolute volumes of imported white salt had been increasing significantly over the last five years, and that the increases were even more pronounced as a proportion of the volume of white salt sold in the UK. British Salt

considered that import volumes would continue to increase as a result of large foreign producers responding to declining demand in their home markets and seeking to use their excess production capacity by exporting, and also as a result of production costs rising faster for UK producers than for the main European producers.

- 5.58 British Salt further argued that the major European white salt producers represented a competitive constraint on the relevant market, being well-resourced and obtaining higher revenues from salt sales than British Salt or NCSW. For example, British Salt considered that, in response to a 5 per cent price increase in the UK by a supplier of PDV or compacted salt, UK distributors would quickly react by sourcing increased volumes of vacuum (and other) salt products from overseas suppliers with whom they had existing, long-established supply arrangements. British Salt told us that it tried to price its salt products in a way which discouraged customers switching to imports. British Salt believed that the competitive constraint from imported salt came not only from customers switching to imported salt, but also from customers threatening to switch to imported salt in order to win concessions from the UK producers.
- 5.59 PDV and compacted salt are bulky, with transport costs representing a significant part of the delivered price. We were told that the cost of shipping bulk or bagged salt to a UK port is £12 to £17 a tonne on CIF basis. Comparison of the average transport costs for British Salt with those provided by a European salt producer for delivery to the door of a customer within the UK illustrates the scale of differences in transport costs (see Appendix D). Foreign producers face the additional uncertainty and costs associated with exchange rate fluctuations as well. Although it is possible to hedge against short-term exchange rate risks to some extent, it is difficult to protect the value of fluctuating cash flows in foreign currency in the longer term. We were told by a European producer that it does not necessarily have to be the case that salt producers from continental Europe have cost advantages compared with British Salt as a result of their higher production volumes. It pointed out that its total production was spread across several different plants, one of which was smaller than British Salt's plant.
- 5.60 Imported salt historically has had a low share of the relevant market. There has been no persistent growth trend, and the major northern European white salt producers have had mixed success in selling into the UK. Many customers perceive that quality and security of supply is higher with UK producers and that imported salt is not a realistic alternative. We noted that sales via distributors who purchased both domestic and imported salt might mean that customers were sometimes unaware of the origin of the salt they used. However, when customer perceptions were coupled with the low level of customer switching and the high transport costs into the UK, importers appeared to have found it difficult to grow the volumes they sold.
- 5.61 In relation to threatened rather than actual switching, we considered that, if customers did not actually switch, this undoubtedly placed a limit on the extent to which importers could increase their supply of salt into the UK. Threatened switching to imported salt will be less of a competitive constraint than actual switching.²⁹
- 5.62 Whilst the existence of imports may offer some competitive constraint (both from actual and threatened customer switching), we considered this to be limited and we have not seen sufficient evidence to expect that this will change in the period relevant to our inquiry.

²⁹We considered that the threat of switching to NCSW (as discussed in paragraphs 5.86 and 5.91 to 5.99) represented a more significant source of competitive constraint than in the case of imports because of the adverse customer perceptions of imports.

- 5.63 British Salt argued that, according to the evidence of European producers and distributors, there were few barriers to importing salt into the UK, and that the CC had failed to consider the margin that these companies could generate on the salt they imported. Further, British Salt noted that the apparent transport cost disadvantage faced by importers was less than the production cost disadvantage that NCSW would have faced compared with British Salt in 2006, which in British Salt's view (together with lower production costs for overseas producers) suggested that imported salt could be more of a competitive constraint on British Salt than NCSW.
- 5.64 We noted the views of distributors that they were able to import salt into the relevant market; however we considered that this was not sufficient for imports to represent a significant competitive constraint. We heard evidence from European producers that indicated that they saw significant barriers to importing. We also received evidence (from customer hearings and the customer survey) of inertia, the value placed in long-term relationships and the importance of security of supply. We considered that the evidence in the round supported our view that imports represented a limited competitive constraint.
- 5.65 We considered that a comparison between the relative cost disadvantages faced by NCSW and salt importers was not relevant. Firstly, customer attitudes represented an additional barrier to imports not faced by NCSW. Secondly, overseas producers were able to avoid the additional costs incurred in importing salt by selling their salt elsewhere, an option that was not open to NCSW, which had strong incentives to sell its salt in the UK.

Distributors

- 5.66 British Salt argued that there was a strong, independent salt distribution sector in the UK, and that an increasing volume of salt was being handled via distributors. British Salt considered that distributors provided an effective route to market for overseas manufacturers. It believed that both the distributors themselves, and the fact that they provided a channel to market for imported salt, acted as competitive constraints on the relevant market.
- 5.67 There are a large number of different types and sizes of distributor supplying salt into the relevant market. Some only or mainly sell salt, targeting customers for whom it would be uneconomic to deal directly with the producers because of their size or the frequency with which they require small deliveries. Others provide a range of related products of which salt is only one, so that they can offer a 'one-stop shop' to customers. Some distributors service local geographies within the UK or particular end-use applications, for example water softening.
- 5.68 About [redacted] of the 2004 UK sales values of British Salt and Salt Union were to UK distributors (not including Salt Union's sales through its wholly owned subsidiary, Direct Salt), whilst the figure for NCSW was only [redacted] per cent, reflecting NCSW's stated preference to selling direct to end-user customers rather than to distributors. We did not see any evidence that the overall sales of PDV and compacted salt via distributors in the UK was increasing, although British Salt told us that its own sales via UK distributors had increased between 2001 and 2004.
- 5.69 Even the largest distributors accounted for only a fairly small percentage of the total sales volumes of the UK vacuum salt producers. For example, Albion's PDV and compacted salt purchases from British Salt amounted to about [redacted] per cent of British Salt's PDV and compacted salt sales volumes in the UK. A number of the major distributors obtained salt from more than one source, and, for many, at least one of

these sources was a foreign salt producer. However, volumes purchased from second suppliers could be small. [✂]

- 5.70 We examined the prices at which UK distributors purchased salt, from both UK and foreign producers, but found no evidence that distributors could always purchase salt from the producers at prices lower than the generality of customers. Some distributors told us that, if one of their potential end-user customers appeared to require a lower price than the distributor had been able to offer, the distributor might seek (and possibly be provided with) 'price support' from the producer in order to improve its chances of winning the customer. Producers had an incentive to offer lower prices to distributors in such circumstances to avoid the logistical difficulties of dealing with the end-user customers themselves.
- 5.71 We found that several distributors were well represented in geographic terms, and that others had storage depots at a range of locations, together giving reasonable coverage of Great Britain. This confirmed British Salt's view that distributors were typically able to match the lead times (and the security of supply) of the UK producers even when relying on imported salt, although we were also told that customers did not always perceive this to be the case. We found that distributors sold to all sizes of customer.
- 5.72 In economic markets in general, we noted that distributors could act as an additional competitive constraint in certain circumstances. This might arise where distributors had a lower cost structure for distribution than the producers (for example, the one-stop shop proposition as described in paragraph 5.67, which also lowered transaction costs for end-users) or were able to exert considerable buyer power on upstream producers.
- 5.73 In relation to the relevant market, we did not consider that there was evidence that a one-stop shop distributor was a particularly attractive proposition for customers, given the proportion of salt sold by producers directly to end-users (see paragraph 5.68). We also saw little evidence of buyer power among distributors, given that even the largest distributors accounted for only a small percentage of the total sales volumes of the UK vacuum salt producers (see paragraph 5.69) and that there was no evidence that distributors can always purchase salt from producers at prices lower than the generality of customers (see paragraph 5.70).
- 5.74 Whilst distributors may provide some competition for end-user customers, all salt ultimately must be bought from producers (whether UK or foreign) and the distributors are themselves customers of the salt producers. Although some customers may benefit on occasion from the ability of distributors to broker between different sources of salt and specialize in serving (with a lower cost structure) certain parts of the market, the ultimate constraint on distributors is the price at which they purchase salt. This price is determined by the pricing behaviour of the salt producers both in the UK and abroad. To the extent that distributors purchased salt from the UK salt producers, we did not consider that they offered an additional competitive constraint in the relevant market as a result of the evidence of their limited ability to exploit a lower distribution cost structure and of their limited buyer power. To the extent that they purchased salt from salt producers abroad, we considered that distributors could not provide a significant competitive constraint for the reasons outlined in paragraphs 5.55 to 5.65.

Business strategies pursued by British Salt, NCSW and Salt Union

- 5.75 We considered that British Salt and NCSW implemented significantly different business strategies. We considered the key factors to have been:

- (a) The differing scale of NCSW and British Salt. For example, British Salt's UK sales of PDV salt in 2004 were about [redacted] tonnes, and NCSW's were about [redacted] tonnes. For compacted salt, the figures were about [redacted] tonnes and about [redacted] tonnes. This restricted NCSW's interest in supplying the very largest customers.
- (b) The differing cost structures of NCSW and British Salt. The differing cost structures are in part due to NCSW's small scale, and in part due to the fact that it has a three-effect evaporation plant and British Salt has a six-effect plant. As explained previously, a three-effect plant is less energy efficient than a six-effect plant, and British Salt told us that it used about [redacted] therms of gas to produce a tonne of vacuum salt, whereas NCSW used about [redacted] therms.³⁰ This has a significant impact because energy costs are the biggest variable cost in vacuum salt production.
- (c) NCSW's stated policy of selling sufficient PDV to use its capacity fully, having taken account of its compacted and pharmaceutical salt production. (Data on NCSW's production capacity is set out in Appendix E.) This was more important for NCSW than for the other UK vacuum salt producers because of its relative inefficiency. At the same time, NCSW acted in the belief that there would be no point in selling any further PDV salt than necessary, since it considered that it was unable to expand its PDV capacity due to the costs and perceived risks of doing so (discussed in paragraph 5.6 and Appendix I).
- (d) NCSW's focus as a result on converting some of its PDV production into small volume, higher-margin salt products such as pharmaceutical salt, block salt and retail salt.

5.76 Whilst the former Managing Director of NCSW told us that NCSW monitored its PDV sales carefully, this was on the basis of achieving a certain threshold of throughput, beyond which it would not have the capacity to supply any further customers. We were told that NCSW might occasionally try to switch existing lower-margin PDV customers for higher-margin PDV customers. British Salt, on the other hand, has considerable spare UV and PDV production capacity and a larger plant. British Salt's attitude to the pharmaceutical market prior to its acquisition of NCSW (namely that the volumes involved were not large enough to make it decide to produce pharmaceutical salt despite the higher margins available) confirms its production-led philosophy.

5.77 We considered that Salt Union's business strategy reflected the ways in which it was similar to (and different from) British Salt:

- like British Salt, Salt Union had some excess capacity in relation to PDV and granular salt;
- Salt Union had a slightly different cost structure from British Salt due (among other things) to its 'take or pay' energy supply arrangements, giving it an incentive to produce at least the volume of salt required to use the amount of energy it was obliged to pay for in any event; and
- Salt Union told us that it sought a wide diversity of customers to avoid over-reliance on a small number of large customers. As part of this strategy, Salt

³⁰British Salt told us after publication of our provisional findings report that the actual gas usage rate for NCSW was [redacted] therms a tonne of salt produced despite the lower rate of [redacted] therms a tonne being used for budgeting purposes. Similarly, British Salt told us that its own usage rate was [redacted] therms a tonne rather than the lower rate of [redacted] therms a tonne being used for budgeting purposes. We considered that these differences were not material.

Union had purchased Direct Salt, through which it was able to service a large number of small customers.

Extent of competitive constraint between NCSW and British Salt

5.78 We examined both the extent to which British Salt was a competitive constraint on NCSW, and the extent to which NCSW was a competitive constraint on British Salt.³¹ We needed to assess the competitive dynamic between British Salt and NCSW from the perspective of different groups of customers.

5.79 British Salt is a clear competitive constraint on NCSW in relation to the prices NCSW charges its customers. British Salt provided us with data on the occasions on which NCSW bid for customers from 2002 to 2004, summarized in Table 2. This data shows that NCSW was involved in 261 competitive bidding situations between 2002 and 2004 (ie on average 87 occasions a year). There were around 56 occasions (21 per cent of those listed) between 2002 and 2004 in which NCSW bid competitively against British Salt (ie on average 19 occasions a year). Of these, there were 44 occasions in which British Salt competed for existing NCSW customers.

TABLE 2 NCSW competitive bidding situations, 2002 to 2004

No of bids	2002	2003	2004
NCSW competitive bids	100	87	74
BS also bidding	21	18	17

Source: CC analysis of British Salt data.

5.80 For NCSW's existing customers, the merger between British Salt and NCSW removed this competitive constraint.

5.81 We next considered the extent of the competitive constraint offered by NCSW in the relevant market; and in particular the argument that NCSW's lack of additional production capacity meant that it had little or no ability to respond to increasing demand from new or existing customers, and hence neither the incentive nor ability to provide effective price competition to British Salt and Salt Union. In order to assess the extent of the competitive constraint offered by NCSW, we examined evidence on:

- (a) NCSW's production capacity and constraints arising from this;
- (b) whether NCSW was perceived to be a viable alternative for customers;
- (c) the role played by NCSW in the negotiation of customer prices and the extent to which NCSW featured in customer switching; and
- (d) NCSW prices compared with those of its competitors (in practice, we only had data to do a detailed comparison with British Salt).³²

³¹As noted at paragraph 5.30, we recognized that the competitive dynamic in the relevant market also encompassed interactions between British Salt, NCSW, Salt Union and salt importers and distributors. We only had data in relation to British Salt and NCSW that allowed us to analyse the competitive constraint between those two companies in detail.

³²As set out in this paragraph, the price competitiveness of NCSW is not the sole determinant of whether NCSW acts as a competitive constraint. It is a necessary but not sufficient condition for the existence of a competitive constraint.

Constraints arising from NCSW's production capacity

5.82 British Salt told us that NCSW had a theoretical maximum production capacity of some 80,000 tonnes a year (its nameplate capacity), though the actual level of maximum production depended to some extent on the proportions of PDV, compacted and pharmaceutical salt produced, and would likely be less than this. In particular, pharmaceutical salt is prepared in batches; its production requires the preparation of the salt evaporator plant which typically takes [X] from time of production of a batch of pharmaceutical salt to resumption in the production of PDV or compacted salt. We were told that, in the event that NCSW were to produce pharmaceutical salt to its full capacity of [X] tonnes a year (under its current production practices), its overall production capacity would be reduced to a theoretical 74,000 tonnes.

5.83 Table 3 shows NCSW sales volumes over the last five years. Taken together with the information in the previous paragraph, this suggests that NCSW probably had some spare capacity in 2002 and 2003 (between [X] and [X] tonnes) but that in 2004 its capacity was more fully utilized, based on a maximum production capacity of 80,000 tonnes a year.

TABLE 3 NCSW sales volumes, 2000 to 2004

Tonnes	2000	2001	2002	2003	2004
PDV					
Compacted					
Pharmaceutical					
Total			X		
Maximum spare capacity					

Source: British Salt.

5.84 We identified from the NCSW bidding data those occasions where NCSW tried to win customers from British Salt, Salt Union or a distributor (ie we left aside—for these purposes—the 44 occasions in which British Salt competed for existing NCSW customers). Over the past three years, NCSW tried to win new customers on 33 occasions, of which 12 were where NCSW and British Salt both bid for non-NCSW customers. Table 4 shows capacity utilization and EBITDA over the past five years and NCSW's competitive behaviour over the last three years.

TABLE 4 NCSW competitive behaviour

	2000	2001	2002	2003	2004
Capacity utilization (based on 80,000t), %	(✂)
EBITDA £	885,662	605,490	544,986	871,080	985,823
Competitive quotes for non-NCSW customers	N/A	N/A	17	11	5
Of which, existing British Salt customers	N/A	N/A	7	5	3
And, of which, British Salt also bid	N/A	N/A	5	5	2
Total competitive quotes won by NCSW for new customers	N/A	N/A	13(76%)	2 (18%)	0

Source: CC analysis of British Salt data.

Notes:

- Five of the 33 occasions when NCSW bid competitively for non-NCSW customers relate to compacted salt, the rest relate to PDV salt.
- N/A = not available.

5.85 Table 4 suggests that, over the last three years, as NCSW has become more cash generative (as indicated by the growth in EBITDA) with less spare capacity, its level of active competition in the market, as suggested by the number of times it has tried to win new customers, has decreased.³³ It is consistent with the view, put to us by the former owners of NCSW, that NCSW sought to retain existing customers and actively sought new customers whenever it had spare capacity (for example, due to the loss of a customer or a decline in demand from its existing customers).

5.86 The data nevertheless shows that in 2004, when NCSW's capacity utilization was at its highest, NCSW did bid to supply one new customer with in excess of 2,000 tonnes of PDV (and, in 2003, NCSW bid to supply another customer with around 2,000 tonnes of PDV). Assuming there are no other barriers to switching, bids do not need to be successful to act to constrain competitors, provided competitors are aware of other potential bidders. Bids from NCSW do not therefore need to be successful to constrain British Salt's behaviour providing British Salt is aware of NCSW's potential to bid. Both British Salt and the former shareholders of NCSW told us that NCSW was prepared to drop lower-margin business to take on higher-margin business. Even under circumstances where NCSW's capacity utilization was at its highest, therefore, it is clear that NCSW did not entirely withdraw from competing for new customers.

5.87 We were told by British Salt that it intended to shift all of NCSW's production from the NCSW site at Northwich to its own plant at Middlewich, allowing the plant at Northwich to be closed. It is clear therefore that the merger will eliminate NCSW's production capacity from the relevant market entirely (rather than simply joining NCSW's production capacity with that of British Salt).

Salt users perceptions of NCSW as an alternative supplier

5.88 The customer survey showed that 14 per cent (around 40) of those respondents buying from a supplier other than NCSW considered NCSW as the main alternative if they could no longer buy from their current supplier. The proportion seeing NCSW as

³³NCSW's profitability has also increased over the same time period, as shown in Table 3, Appendix B.

the main alternative was lower among those buying more than 1,000 tonnes a year, but broadly similar across all those buying less than that amount.

- 5.89 Focusing on current British Salt PDV customers that responded to the survey, 25 (17 per cent) said that NCSW was the main alternative and 41 (27 per cent) said that they would switch to Salt Union. Some 31 per cent of British Salt's PDV customers that responded to the survey said that they did not know who would be their main alternative.
- 5.90 Whilst we did not attribute great weight to the specific percentages involved, the survey data suggested that NCSW was seen as a viable alternative by a significant number of existing customers of British Salt and Salt Union.

The role played by NCSW in the negotiation of customer prices and switching

- 5.91 We examined data provided by British Salt and Salt Union to understand the nature of the competition NCSW provides in the relevant market. We did this by assessing the extent to which NCSW participated in customer negotiations and customer switching, and how this compared with what we might have expected to see given NCSW's market share.
- 5.92 As stated paragraph 5.79, the data from British Salt revealed that there were around 56 occasions (21 per cent of those listed) between 2002 and 2004 in which NCSW bid competitively against British Salt (ie on average 19 occasions a year). Figure 1 in Appendix G shows a comparison of bids for the 11 occasions where NCSW bid for non-NCSW customers of PDV salt and British Salt also bid. It shows that bid prices were broadly similar when viewed against a 45-degree line (the point at which bid prices are equal). Analysis of the data shows that NCSW was cheaper on two of the 11 occasions. Whilst we noted that there were a limited number of occasions in absolute terms on which NCSW bid for non-NCSW customers of PDV salt and British Salt also bid, we considered these figures in the context of the low level of bidding in the market as a whole.
- 5.93 As noted at paragraph 5.34, the customer survey showed that the salt industry is characterized by long-term relationships between supplier and customer with relatively infrequent switching. Among respondents mainly using PDV salt, the average length of relationship with their principal supplier was about nine years, whilst for compacted salt, the figure was about 8.5 years. Nearly 40 per cent of respondents said they had been with their existing supplier for ten years or more.
- 5.94 The customer survey also showed us that 20 per cent of respondents had stopped using a supplier within the last three years.³⁴ This figure, and the length of customer relationships, taken together, suggested that the level of switching overall was in the range 6 to 10 per cent a year (of a particular supplier's customer base). The lower bound is based on what the customer survey told us about the frequency with which respondents terminated supplier relationships, and the upper bound is based on the length of customer relationship.
- 5.95 The switching data provided by British Salt showed 28 customers had switched from British Salt to NCSW in the last four years (2000/01 to 2003/04). This amounted to an average of seven switchers a year ([✂] per cent of British Salt's customer base).

³⁴This may be an underestimate of switching due to customers switching volumes between suppliers without terminating a supplier relationship completely.

- 5.96 Our analysis of NCSW data set out in Appendix G indicated that, in total, NCSW was gaining and losing around [X] tonnes each year (comprising volumes gained and lost to British Salt, Salt Union and unknown competitors), amounting to just over 10 per cent of NCSW production. Our analysis suggested it was gaining (on a gross basis) around [X] tonnes a year from British Salt and [X] tonnes a year from Salt Union (a combined total of [X] tonnes or nearly 2 per cent of NCSW annual production). In practice, these figures may be underestimates, as not all volumes gained and lost were to and from known competitors.
- 5.97 Data from Salt Union, set out in Appendix G, revealed around [X] tonnes of non-UV volumes lost a year ([X] per cent of Salt Union non-UV production), of which on average [X] tonnes were lost on price. NCSW accounted for on average [X] tonnes of the volumes lost on price ([X] per cent of [X] tonnes). This picture was similar when analysed on the basis of customer numbers, with NCSW picking up [X] of the [X] customers ([X] per cent) lost by Salt Union over the last five years, and [X] of the [X] lost on price ([X] per cent). The data suggested that some [X] customers were lost a year, amounting to slightly [X] per cent of a customer base of around [X]. Again, in practice, these figures may be underestimates as not all volumes gained and lost are to and from known competitors.
- 5.98 This data allowed us to build up some picture of switching in the market. If switching were assumed to be around 10 per cent based on length of customer relationships in the survey data, it would imply that, from a total customer base (for the three main suppliers) of around [X],³⁵ the maximum number of switchers in any one year would be [X]. If, on the other hand, switching were assumed to be nearer the 5 per cent put forward by [X] or the 6 per cent based on survey responses regarding the termination of supplier relationships, this would imply only around [X] switchers a year. On the basis that NCSW picked up a minimum of [X] customers per year from British Salt and Salt Union, it would account for between 6 per cent and 13 per cent of switchers, ie roughly in line with its market share.
- 5.99 Whilst the data was too limited to enable firm conclusions to be drawn regarding the precise level of competitive constraint offered by NCSW, and, whilst the number of switchers to NCSW was not high in absolute terms, the data was compatible with a view that NCSW was competing effectively in the market despite its capacity constraints. NCSW accounted for the number of switchers it might have been expected to, given its market share and the low level of switching in the market as a whole. It was also clear that British Salt provided a competitive constraint on NCSW in relation to the prices NCSW charged its customers.

Comparison of NCSW and British Salt prices

- 5.100 We analysed data provided by British Salt in relation to NCSW and British Salt prices for 2004, and this analysis is set out in Appendix D. Table 5 summarizes our analysis of this data, which suggested that on an ex-works basis NCSW was generally price competitive with British Salt.

³⁵The figure of [X] does not include customers that Salt Union services through its Direct Salt subsidiary.

TABLE 5 British Salt and NCSW weighted average ex-works prices by customer size, 2004

Tonnes, £/t	<10	10–49	50–99	100–199	200–299	300–499	500–999	>1000
<i>PDV (excl. fine)</i>								
British Salt					✂			
NCSW								
Difference	2.73	-0.95	3.30	3.28	2.94	8.90	1.01	6.95
<i>Compacted</i>								
British Salt					✂			
NCSW								
Difference	-17.39	-12.45	-7.74	0.40	-3.79	-5.11	N/A	10.29

Source: CC analysis of British Salt data.

Note: N/A = not applicable

- 5.101 The interpretation of these results is complicated by a number of factors, in particular the view taken on the most appropriate treatment of British Salt’s Fine 50 and Fine 60 grades in the case of PDV and the differing role of distributors in the case of compacted salt. We heard evidence that the Fine grades, produced by sieving to separate out smaller particle sizes from British Salt’s PDV production, were regarded as value-added products by some salt users, mainly in parts of the food industry such as crisp manufacturing and cheese making. However, for the majority of uses, PDV salt from one UK manufacturer could be fully substituted for that from another and the precise mix of particle size was not an important feature. In relation to compacted salt, British Salt argued that the price comparison between particular customer sizes was distorted because of the sale of significant quantities of compacted salt for water softening to one distributor at a low price. When segmenting by customer size, this had the statistical effect of lowering the weighted average price to large customers but effectively increasing it to smaller customers.
- 5.102 We did not conclude on the basis of this price data that NCSW charged generally lower prices than British Salt. However, the data, as summarized in Table 5, did indicate to us that NCSW was generally price competitive in relation to customers on whom it focused (generally not distributors and not customers requiring the largest volumes).
- 5.103 Salt Union considered that, although it did not find itself bidding against NCSW frequently, when it did so, NCSW was competitive on price. British Salt, on the other hand, considered that NCSW was generally not price competitive with it. British Salt stated that the merger only eliminated NCSW as a competitor for the supply of small volumes to customers. Further, British Salt told us that it had a limited presence in relation to serving that type of customer and tended to sell mainly through distributors to such customers. British Salt drew attention to the proportion of its sales that were made to larger customers compared with NCSW’s sales.³⁶ Whilst we accepted that the size profile of British Salt’s customer base was different from that of NCSW, the data provided by British Salt still indicated considerable overlap between the sizes of customer supplied by British Salt and NCSW. We found that the differences in the profiles of the customer bases of British Salt and NCSW were insufficient to alter our view that NCSW was generally price competitive with British Salt, for those customers of a size which both supplied.

³⁶British Salt told us that customers purchasing more than 1,000 tonnes of PDV salt a year (excluding fine grades and No Anti Caking Agent salt) accounted for about [redacted] per cent of British Salt’s sales by volume, and about [redacted] per cent of NCSW’s sales by volume. For compacted salt, the figures were [redacted] per cent and [redacted] per cent respectively.

5.104 More generally in relation to pricing, British Salt argued that there had been a decline in its average realized prices—both in absolute and real terms—between 1996 and 2004, and that this price decline might indicate a competitive dynamic between competing salt suppliers in the UK. We examined evidence for a price decline, but found it was not sufficiently reliable to enable a detailed analysis to be undertaken (due for example to the combination of ex-works and delivered prices and the lack of historic per-transaction pricing data). We noted that there were other reasons (apart from competitiveness) that might have led to any decline in prices such as changes in the mix of small and large customers and other changes in demand. From the limited data available to us, it appeared that the major decrease in price was that for UV salt, which appeared likely to have been a result of a significant decline in demand.

Conclusions on existing competition in the relevant market

5.105 We found that competition in the market for the supply of PDV and compacted salt in Great Britain or the UK and the Republic of Ireland was characterized by:

- (a) high concentration of supply in relation to both PDV and compacted salt;
- (b) large numbers of both PDV and compacted salt customers who had long-term relationships with their salt suppliers, switched between suppliers relatively rarely and often gave their existing supplier a chance to 'bid last' in any competitive negotiation. Although price was important, customers also rated highly reliability of delivery. Whilst salt was a critical input to many customer's industrial processes, it represented a very small proportion of the overall cost base for the vast majority of customers, whether small or large;
- (c) little evidence of buyer power. Only a minority of customers dual- and multi-sourced, and individual salt customers tended to represent a very small proportion of each producer's sales volumes;
- (d) considerable PDV salt production over-capacity and less, although still significant, compacted salt over-capacity together with static or declining demand in most end-use applications with little prospect of overall growth;
- (e) high barriers to entry for producers;
- (f) limited competitive constraints imposed on the relevant market by either imported salt or UK salt distributors; and
- (g) pursuit by NCSW of a business strategy that differed from that of British Salt or Salt Union as a result of NCSW's differing scale, cost structure and production constraints, which led to NCSW's focusing on higher margin pharmaceutical, retail and block salt. However, whilst the ability of NCSW to act as a competitive constraint in relation to PDV was to some degree limited by its scale of operation and capacity constraints, the effect of these had varied over time and, overall, had not been such as to prevent NCSW from competing effectively in the relevant market over the past few years.

Effects of the merger

5.106 As set out at paragraph 5.28, we came to the expectation that, absent the merger, NCSW's former shareholders would have closed NCSW in late 2006 and that the NCSW customer list would either have been sold to another UK producer or NCSW's

customers would have been dispersed across the remaining salt producers approximately in accordance with those firms' market shares.

5.107 We next considered the effect of the merger when set against this counterfactual. To do this, we separated our assessment into two distinct stages. First, we considered the effect of the merger in relation to the period until closure of the NCSW plant (had the merger not taken place); and second the effect of the merger in relation to the period after closure (had the merger not taken place).

Effect of the merger in period until closure of NCSW

Effect on concentration

5.108 Using the market share information in Appendix C, Table 6 sets out the effect of the merger on the two-firm concentration ratios and HHI values for the relevant market.³⁷ Table 6 indicates that the relevant market is already highly concentrated, will become more so after the merger with the loss of an independent competitor,³⁸ and, in particular the HHI will increase by 932. Calculating the two-firm concentration ratio using the market shares of the two large firms (British Salt and Salt Union) in the market, Table 6 also shows that the competitive fringe³⁹ (NCSW and the range of foreign producers) shrinks from 15 to 6 per cent in the market for PDV and compacted salt following the merger. Further, the remaining market share of competitive fringe firms (6 per cent) is dispersed among the various foreign producers selling into the UK market. For illustrative purposes only, Table 6 also shows the effect of the merger on concentration assuming that there are separate product markets for PDV salt and compacted salt. Even if PDV salt and compacted salt are considered separately, the increase in HHI is 1,231 for PDV salt and 207 for compacted salt.

TABLE 6 **Market concentration after the merger (based on 2004 volumes sold)**

	<i>Market for PDV salt</i>	<i>Market for compacted salt</i>	<i>Market for PDV and compacted salt</i>
British Salt market share pre-merger, %	57	24	50
NCSW market share pre-merger, %	11	4	9
Combined British Salt and NCSW market share post-merger, %	68	28	59
Two-firm concentration ratio pre-merger (British Salt and Salt Union), %	83	90	85
Two-firm concentration ratio post-merger (merged firm and Salt Union), %	94	94	94
HHI pre-merger	4,062	4,977	3,790
HHI post-merger	5,293	5,184	4,722
Increase in HHI	1,231	207	932

Source: CC analysis of 2004 sales data provided by each party.

³⁷Our assessment of the increase in concentration is based on the assumption that British Salt retains all of NCSW's customers post-merger. British Salt told us that they assumed they would retain [] (depending on the type of vacuum salt). We did not take a view on the exact percentage of customers that would be retained but noted that it would likely be high given inelasticity of demand in the market and customer inertia.

³⁸One consequence of the loss of an independent competitor is the loss of a potential bidder as a constraint on competitors, as described in paragraph 5.86.

³⁹The term 'competitive fringe' is often used by economists to describe a group of relatively small firms in the market. A fringe firm is used in this context to refer to a firm that is a member of such a competitive fringe. Our market concentration analysis summarized in Table 6 looks at two core firms (hence the use of two-firm concentration ratios) plus a competitive fringe which pre-merger comprised NCSW, ESCO, Akzo and Salins du Midi (all of which are included in the HHI calculations).

Effect on prices

- 5.109 We considered first whether the merger would be likely to have an effect on prices. The majority of competitors, distributors and customers who provided us with comments expressed few concerns on this score. Most felt that the merger would have little effect on them, largely as a result of the small size of NCSW. However, a few third parties indicated that they were concerned that prices might rise as a direct result of the merger, although some of the concern expressed by these third parties appeared to be over the operation of the market rather than the effects of the merger itself. The relative absence of expressions of concern needs to be interpreted against the facts that (in the case of competitors) other suppliers would benefit from price rises and (in the case of customers) salt is a very small proportion of the overall cost base for the vast majority of end-users.
- 5.110 The loss of an effective competitor in a market with only three competing UK producers can be expected to lead to an increase in concentration and a loss of rivalry, and hence the potential for higher prices. While British Salt and Salt Union would be expected to increase production to make up for some of the loss of NCSW's supply, they would also be expected to take advantage of a reduction in supply through higher prices. We examined whether there were any characteristics of the relevant market that would lead us to conclude that this would not have been the case. In particular, we examined the effect of the merger on prices, and whether the response of Salt Union (as the other competitor with a large market share) would have mitigated any competitive harm that might arise.
- 5.111 In our judgement, a market with the characteristics we identified in paragraph 5.105 is inherently prone to higher prices in the event of a loss of a fringe supplier. At any given level of market prices, the presence of a fringe firm that seeks always to sell its available capacity reduces the combined sales of the core firms (ie the small number of firms that have between them a large share of the market) by an amount equivalent to the fringe capacity. Thus the elimination of such a fringe firm's competing capacity both reduces rivalry and appears to the core firms to be equivalent to an exogenous increase in demand, to which they would be expected to respond by increasing prices. In this context, British Salt drew our attention to the loss of significant UV salt demand that it told us would result from the closure of the Albion Inorganic Chemicals chlor-alkali plant (due to take effect in November 2005). However, this closure would have occurred whether or not the merger went ahead and did not affect demand for PDV and compacted salt. As a result, we considered that the closure did not alter our expectation that British Salt and Salt Union would take advantage of the loss of NCSW's supply by raising prices in the relevant market post-merger.
- 5.112 We did not attempt to quantify the extent to which prices would increase because the limited data presented to us did not allow such an analysis to be carried out. We noted that the loss of rivalry brought about by the merger would have been greater to the extent that NCSW was not completely capacity constrained (and could thus have responded to opportunities to increase sales if British Salt and Salt Union increased their prices). We noted that the effect of NCSW's capacity limitation had varied over time (as seen in Table 4). Any significant loss of demand from its existing customers would have increased its need to seek new customers. This would be particularly relevant in conditions in which demand might have been falling (as noted at paragraph 5.52).
- 5.113 On the other hand, the loss of rivalry brought about by the merger would be smaller to the extent that (a) there would be a significant supply response from imports and

distributors; or (b) Salt Union would respond aggressively on price. We consider these two factors in the following paragraphs.

5.114 We considered the barriers that limit the competitive constraint arising from imports in paragraphs 5.55 to 5.65 and the limited competitive constraint offered by distributors in paragraphs 5.66 to 5.74.

5.115 If, following the merger, Salt Union responded aggressively on price, there could not be an expectation that the effect of the merger would be prices higher than would otherwise be the case. The ability of Salt Union to respond depends to some extent on its available capacity. Salt Union told us that it could produce an additional [X] tonnes of PDV a year without further investment, and an additional [X] tonnes of granular compacted salt, [X]. Although it might be feasible to compete more aggressively, we considered whether Salt Union would actually do so. Whilst Salt Union told us that it saw some benefit to itself from the merger, in that it might perhaps take some of NCSW's customers, it thought that the impact would be limited. Nor did British Salt expect to lose many of NCSW's former customers to Salt Union. We considered it likely that Salt Union would maintain (or only minimally increase) its current output and we did not expect that Salt Union would respond aggressively to price rises by the merged entity following the merger.

Effect on service, product choice and innovation

5.116 We considered whether the merger would be likely to lead to a loss of service, product choice or innovation during the period prior to when we expected that NCSW would have closed absent the merger (ie up to late 2006). The majority of those who commented on these aspects told us that the service levels from both British Salt and NCSW were high, and expressed no concerns; only two third parties considered that the merger would lead to deteriorating levels of service.

5.117 Their differing sizes and business strategies suggested that British Salt and NCSW were under different pressures to innovate, with British Salt facing strong incentives to find innovations that would help it to reduce costs and maintain volumes whereas NCSW faced a particularly strong incentive to find higher-margin products that would enable it to cope with its higher production costs, even where volumes were small. There was also an argument that smaller firms such as NCSW could be more nimble, moving faster to meet changing demands. In this context, we noted that the former shareholders of NCSW told us that Harvey Water Softeners chose to approach NCSW rather than British Salt or Salt Union when it was seeking a new supplier to manufacture salt blocks for its water softeners.

5.118 The former shareholders of NCSW, in giving examples of innovation over the last ten years, pointed to developments in the production of pharmaceutical salt, which they had undertaken in cooperation with customers, and the joint venture with Harvey Water Softeners in compacted salt. British Salt provided details of a series of its innovations involving development of new products—in some cases to meet the specific requirements of individual customers—as well as packaging and palletization innovations and the installation of a fully automated unmanned weighbridge to enable customer loading and unloading 24 hours a day.

5.119 Whilst we did not dismiss the possibility that the removal of a smaller competitor following a different business strategy could lead to some loss of service or innovation, we did not find compelling evidence that would lead us to expect that the merger would have an adverse effect on service, support, product choice or innovation in this case.

Effect of efficiency gains

- 5.120 British Salt told us that the merger would enable it to improve its capacity utilization, reduce its production costs and expand its product range as a result of transferring NCSW's production to British Salt's plant. British Salt argued that, as a result, it would be a more effective and efficient competitor.
- 5.121 Given barriers to market entry and expansion, and little evidence for widespread buyer power among customers, we were not able to form an expectation that British Salt's efficiency gains would lead it to increase rivalry in the relevant market.

Conclusions on the effect of the merger on prices, service, product choice and innovation in the period up to closure of NCSW

- 5.122 The considerations in paragraphs 5.108 to 5.119 led us to the expectation that the effect of the merger would be to lead to a loss of rivalry, leading to prices being higher than would otherwise have been the case during the period up to late 2006 when we expected that NCSW would have closed absent the merger, but not to an expectation of loss of service, product choice or innovation.
- 5.123 Given our expectation that NCSW would have closed by late 2006, this implies that there would have been a period of less than two years from the date of the merger in which NCSW would have remained as an effective independent competitor. In addition, from the point at which the former shareholders decided the timing of closure, they would have been preparing the business for this. As a consequence, the competitive impact of NCSW would have diminished in the run-up to closure; for example as a result of NCSW not looking aggressively for new customers.

Effect of the merger in period after closure of NCSW

- 5.124 We also examined the competitive effects of the merger compared with the counterfactual in the period following the date at which we considered that NCSW would have closed, absent the merger.
- 5.125 We examined the increment to British Salt's market share as a result of the merger compared with any likely distribution of market shares absent the merger but following closure of NCSW. As indicated in Table 6, British Salt's market share for PDV and compacted salt in the UK would increase by 9 per cent following the merger, assuming British Salt kept all of NCSW's customers. If, absent the merger, customers were dispersed across the market approximately in line with market shares, British Salt would have expected to gain just over half of these customers, leading to an increase in market share of around 5 per cent.
- 5.126 We noted in paragraph 5.111 that the competitive harm caused by the merger was not a direct result of changes in market shares but was brought about by the loss of an independent competitor which always sought to supply its capacity into the market. However, absent the merger, closure of NCSW would still have led to the loss of an independent competitor. For this reason, and also because, in any event, market shares would not have changed significantly, we found that, even if NCSW had sold its customer list such that another salt producer would have gained NCSW's entire share of the relevant market, this would not have materially changed our conclusions. We therefore formed the expectation that the closure of NCSW would have led to a loss of rivalry and price rises, but in a similar way and for similar reasons to those that would be brought about by the merger.

Conclusions on the unilateral effects of the merger

5.127 In view of our analysis as set out in paragraphs 5.122, 5.123 and 5.126, we concluded that the merger, when set against the counterfactual, would not lead or to be expected to lead to an SLC on the basis of unilateral effects.

Coordinated effects

5.128 We considered whether the merger would increase the likelihood of coordinated effects or make existing coordination, if any, more sustainable or more effective in the relevant market. In the analysis of unilateral effects, we noted features of the market that might indicate that the conditions necessary for coordinated effects were satisfied. These included, for example, the degree of product homogeneity (see paragraph 4.56); the high level of market concentration pre- and post-merger (see paragraphs 5.29 and 5.108); the high level of excess capacity in the market (see paragraph 5.32 and Appendix E); the existence of high entry barriers, switching costs and customer inertia (see paragraphs 5.45 to 5.54); and stable market shares over time (see Appendix E). In addition, we noted that there were two core firms (British Salt and Salt Union) with similar shares of the relevant market and leading shares of supply for PDV salt and compacted salt respectively (see paragraph 5.108).

5.129 However, in the circumstances of this market, we did not pursue the issue of coordinated effects further because:

- (a) the relative stability of NCSW's output at near maximum capacity meant that the loss of this output would have little effect on the ability of the core firms to decipher whether changes in volume sold were due to the actions of another firm or due to demand changes in the market as a whole;
- (b) the pattern of market shares following the merger would not be sufficiently different from the pattern of market shares beyond late 2006 (at which point we believed that NCSW would have ceased salt production, absent the merger), to have an identifiable effect on coordination, if any, in this market; this would be so, regardless of the distribution of NCSW's customers post-closure (see paragraph 5.125); and
- (c) the period up until late 2006 was short in relation to the likelihood or size of a potential price raising effect, if any.

6. Findings

6.1 On the basis of paragraph 5.28 we expect that, absent the merger, NCSW would have closed in late 2006. On the basis of paragraphs 5.127 and 5.129, we find that the acquisition of NCSW by British Salt has not resulted in and may not be expected to result in an SLC within any market or markets in the UK (or a part of the UK) for goods or services.