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**Upper Tribunal
Tax and Chancery Chamber**

Hearing venue: Rolls Building
Fetter Lane
London
EC4A 1NL

**Heard on: 17 December 2025
Judgment date: 28 February 2025**

LANDFILL TAX – section 42(2) Finance Act 1996 – Landfill Tax (Qualifying Material) Order 2011 – Note 9(a) – whether waste was entirely “calcium based reaction waste from titanium dioxide production” – whether FTT applied the right test – no – decision set aside and re-made – appeal against the original assessment dismissed

Before

**JUDGE JONATHAN CANNAN
JUDGE ANNE REDSTON**

Between

**(1) SINGLETON BIRCH LIMITED
(2) FCC RECYCLING (UK) LIMITED**

Appellant

and

**THE COMMISSIONERS FOR HIS MAJESTY’S
REVENUE AND CUSTOMS**

Respondents

Representation:

For the Appellants: Akash Nawbatt KC and Colm Kelly of counsel, instructed by Stewarts Law LLP

For the Respondents: James Puzey and Joseph Millington of counsel, instructed by the General Counsel and Solicitor for His Majesty’s Revenue and Customs

DECISION

Introduction

1. This is an appeal against a decision of the First-tier Tribunal (Tax Chamber) (“the FTT”) released on 11 July 2023. The issue before the FTT concerned the rate at which landfill tax was payable on waste disposed of at a landfill site operated by the first appellant, Singleton Birch Limited (“Singleton Birch”). The waste was sent to landfill by the second appellant, FCC Recycling (UK) Limited (“FCC”) which is a waste management company.

2. The relevant waste, described as the “FCC Waste”, was produced by FCC. It was produced by mixing two other forms of waste, namely ferrous chloride solution and air pollution control residue (“APCR”). Ferrous chloride is a hazardous acidic waste, produced in the manufacture of titanium dioxide. APCR is a hazardous alkali waste produced in the treatment of acidic gases arising from the incineration of other waste materials in “energy from waste” facilities. The acidic gases are treated with hydrated lime to neutralise them. Hydrated lime is a chemical reagent containing calcium hydroxide. The resulting APCR contains unused calcium hydroxide which makes it a hazardous alkali waste. When the acidic ferrous chloride is mixed with the alkaline APCR, both are neutralised. The resulting FCC Waste is neutral and non-hazardous.

3. The issue for the FTT was whether the FCC Waste was entirely a “qualifying material” for the purposes of section 42(2) Finance Act 1996 (“FA 1996”). If so it would be charged to tax at a much reduced rate compared to other waste materials disposed of at landfill sites. Qualifying materials are defined by the Landfill Tax (Qualifying Material) Order 2011. One of the qualifying materials is defined by Note 9(a) in the Schedule to that Order as:

calcium based reaction wastes from titanium dioxide production;

4. The issue before the FTT was whether the FCC Waste fell within this definition. Singleton Birch had accounted for tax at the lower rate on the basis that the FCC Waste was a qualifying material. HMRC decided that the FCC Waste was not a qualifying material and assessed Singleton Birch to tax in the sum of £8,726,716 for the period 1 July 2015 to 30 June 2018. Both appellants appealed against the assessment. The FTT held that the FCC Waste was not a qualifying material and dismissed both appeals.

5. The FTT gave permission to appeal on three grounds which we address in detail below. Essentially, the appellants say that the FTT erred in law in construing section 42(2) and Note 9(a) and in finding that the FCC Waste did not consist entirely of a qualifying material within the terms of Note 9(a).

The FTT’s findings of fact

6. The FTT heard evidence from a general manager of FCC and from two expert witnesses. It made extensive findings of fact but for present purposes we set out the material facts relatively briefly in the following paragraphs. There was no issue about the FTT’s findings and we take the facts largely from a helpful summary in the appellants’ skeleton argument.

7. Singleton Birch is the operator of a landfill site at Camp Wood in Lincolnshire. FCC is a waste management company with a site at Knostrop in Yorkshire at which it treats hazardous and non-hazardous wastes.

8. Cristal Pigment UK Limited (“Cristal”) is a manufacturer of titanium dioxide pigment at its works in Stallingborough in Lincolnshire. Cristal extracts titanium dioxide pigment from ores. The pigment is used in a range of industrial and consumer products. The manufacture of titanium dioxide pigment produces a waste which is an acidic ferrous chloride solution. The ferrous chloride waste is hazardous due to its acid content, the presence of heavy metals and naturally occurring radiation. It must be treated before disposal in landfill.

9. Cristal has its own on-site dedicated treatment facility at which it treats some of the ferrous chloride waste. The ferrous chloride waste also contains many other components derived from the titanium dioxide manufacturing process including chlorides, sulphates, heavy metals such as iron, titanium, aluminium, magnesium and silica. These components vary in concentration due to raw material and process variations. Cristal is unable to treat all the ferrous chloride at this facility.

10. Cristal treats the ferrous chloride waste with a chemical reagent containing calcium hydroxide. This reagent is sometimes referred to as slaked lime. Slaked lime in powder form is 90% calcium hydroxide. The remaining 10% is other alkaline metal compounds which would react with ferrous chloride. The powder is mixed with water from Cristal’s site to form a slaked lime slurry which typically has a calcium content of 10-20%. Calcium hydroxide is a hazardous material due to its alkalinity. The alkalinity of the calcium hydroxide in the slurry reacts with the acidic ferrous chloride waste, resulting in the production of a non-hazardous calcium based reaction waste.

11. This waste is then de-watered and compacted into a solid form known as filter cake, which is a non-hazardous waste (“the Cristal Waste”). The filter cake still includes some water which, together with dissolved contaminants, amounts to 40 – 50% of the filter cake by weight. The Cristal Waste therefore does not consist entirely of reacted calcium compounds.

12. The Cristal Waste is transported to Singleton Birch’s Camp Wood site where it is disposed of by way of landfill. The site was created by the extraction of calcium carbonate for slaked lime production, and is now operated so as to fill the void resulting from this extraction.

13. HMRC accept that the disposal of the Cristal Waste at Camp Wood attracts the lower rate of landfill tax because the Cristal Waste is entirely a calcium based reaction waste from titanium dioxide production.

14. Cristal does not treat all of the ferrous chloride waste at its on-site treatment facility in Stallingborough. Some is transported to FCC’s Knostrop site by road tankers, where it is transferred into two storage tanks. From there it is transferred to mixers, where it is mixed with the solid APCR.

15. APCR is itself a waste, produced by energy from waste facilities such as incinerators. The process of incinerating waste releases acid gases, heavy metals and toxic persistent organic pollutants. Slaked lime is injected into the incinerator flue to neutralise the acid gases. The gases are then passed through bag filters which capture the solid residues. The amount of slaked lime injected into the incinerator is greater than the amount strictly required to neutralise the acid gases. This is to ensure excess alkalinity is always present and that the acid gases are removed to the extent required by the facilities’ operating permits. The solid residues are therefore alkaline because they contain unreacted calcium hydroxide from the slaked lime. The solid residues are removed and constitute the APCR. APCR contains a mix including unused calcium hydroxide, other reactive alkaline compounds and some non-calcium reactive compounds. Its composition depends in part on what waste was incinerated. The calcium based reactive compounds comprise a significant majority of the reactive compounds in the APCR and tend to be more reactive than the non-calcium compounds. The APCR is sufficiently alkaline to be classed as hazardous.

16. When the APCR is mixed with the ferrous chloride, the alkaline calcium hydroxide in the APCR reacts with the ferrous chloride to neutralise the acid. The usual range of reactivity of the APCRs is 10 – 30%. The resulting FCC Waste is non-hazardous. It is transported to Singleton Birch's Camp Wood site where it is disposed of in landfill along with the Cristal Waste.

17. The site permits at Knostrop and Stallingborough required the operator to take appropriate measures to ensure that raw materials are used efficiently and consider whether suitable alternative materials could reduce environmental impact, improve the efficiency of raw material use and take appropriate measures to ensure that waste produced is recovered.

18. It was common ground that the reactions giving rise to the FCC Waste were primarily between calcium compounds in the APCR and the ferrous chloride. A significant part, at least 70%, of the material comprising the APCR did not react with the ferrous chloride. Most of the reactive material in the APCR (more than 50%, if not more) was calcium based. The FTT also found as a fact at [136] and [138] that a calcium based reaction did occur in the process which produced the FCC Waste. At [122] it found that between 57% and 72% of the FCC Waste consisted of material which was not the result of a calcium based reaction. To a very significant extent the FCC Waste consisted of elements which were part of the APCR and which did not react with the ferrous chloride.

19. Some 3.9 tonnes of APCR are required to neutralise 1 tonne of ferrous chloride. In contrast, some 260kg of slaked lime powder would be required to neutralise the same amount of ferrous chloride.

20. Camp Wood can only accept a restricted range of waste, specifically precluding active waste or hazardous waste. The operating permit issued to the site and regulated by the Environment Agency reflects this. It provides for 5 years of caretaking following closure of the site, rather than the 60 years required for landfill sites which accept active waste or hazardous waste.

Relevant legislation

21. The relevant legislation can be set out quite briefly. All references are to the provisions in force during the period of the assessment, from 1 July 2015 to 30 June 2018.

22. Section 40 FA 1996 provides for a charge to landfill tax on a taxable disposal. A taxable disposal is a disposal of material as waste by way of landfill at a landfill site. Section 42(1) provides for the rate of landfill tax charged on a taxable disposal. During the relevant period the rate increased from £84.40 to £88.95 per tonne disposed of. Section 42(2) provides for a reduced rate of tax where the material disposed of consists entirely of qualifying material. The reduced rate has also increased over the period from £2.65 to £2.80 per tonne disposed. At the beginning of the relevant period, section 42 was in the following terms:

42 Amount of tax

(1) The amount of tax charged on a taxable disposal shall be found by taking —

(a) £84.40 for each whole tonne disposed of and a proportionately reduced sum for any additional part of a tonne, or

(b) a proportionately reduced sum if less than a tonne is disposed of.

(2) Where the material disposed of consists entirely of qualifying material or qualifying fines this section applies as if the reference to £84.40 were to £2.65.

(3) Qualifying material is material for the time being listed for the purposes of this section in an order.

(4) The Treasury must —

- (a) set criteria to be considered in determining from time to time what material is to be listed or what fines are to be qualifying fines,
- (b) keep those criteria under review, and
- (c) revise them whenever they consider they should be revised.

(5) The Commissioners must publish the criteria (and any revised criteria) set by the Treasury.

(6) In determining from time to time what material is to be listed, or what fines are to be qualifying fines, the Treasury must have regard to —

- (a) the criteria (or revised criteria) published under subsection (5), and
- (b) any other factors they consider relevant.

23. Section 63 FA 1996 makes further provisions in relation to qualifying material:

63 Qualifying material: special provisions

(1) This section applies for the purposes of section 42 above.

(2) The Commissioners may direct that where material is disposed of it must be treated as qualifying material if it would in fact be such material but for a small quantity of non-qualifying material; and whether a quantity of non-qualifying material is small must be determined in accordance with the terms of the direction.

(3) The Commissioners may at the request of a person direct that where there is a disposal in respect of which he is liable to pay tax the material disposed of must be treated as qualifying material if it would in fact be such material but for a small quantity of non-qualifying material ...

24. The relevant Order for the purposes of section 42(3) is The Landfill Tax (Qualifying Material) Order 2011 (“the QMO”). The QMO recites that the Treasury has set criteria for determining what material is to be listed as qualifying material, HMRC have published those criteria and the Treasury has had regard to those criteria and other factors they consider to be relevant in making the QMO. The QMO revoked and replaced a previous order from 1996. The QMO provides as follows:

3. Subject to articles 4 to 6, the material listed in column 2 of the Schedule to this Order (“the Schedule”) is qualifying material for the purpose of section 42 of the Finance Act 1996.

4. The Schedule shall be construed in accordance with the notes contained in it.

25. The Schedule then provides as follows:

| Column 1 | Column 2 | Column 3 |
|----------|----------------------------------|------------|
| Group | Description of material | Conditions |
| ... | ... | ... |
| 6 | Low activity inorganic compounds | |

Notes

...

(9) Group 6 comprises only —

- (a) calcium based reaction wastes from titanium dioxide production;
- (b) calcium carbonate;
- (c) magnesium carbonate;
- (d) magnesium oxide;
- (e) magnesium hydroxide;
- (f) iron oxide;
- (g) ferric hydroxide;
- (h) aluminium oxide;
- (i) aluminium hydroxide;
- (j) zirconium dioxide.

26. We describe below the criteria set by the Treasury pursuant to section 42(4) in determining what material is to be listed as qualifying material. Those criteria were published by HMRC pursuant to section 42(5) in HMRC Brief 08/11.

Context of the relevant legislation

27. Mr Nawbatt KC, who appears for the appellant together with Mr Kelly, relied on certain materials which he submitted were relevant to the context in which the QMO was enacted and which could legitimately be taken into account in construing the relevant provisions of FA 1996 and the QMO.

28. It is helpful to set out at this stage the material which the appellants rely on when it comes to construing the relevant provisions, and determining whether the FCC Waste falls within the qualifying material described in Note 9(a). Mr Nawbatt relied on four categories of material:

- (1) material describing the environmental objectives underpinning the relevant statutory provisions;
- (2) the consultation which preceded enactment of the QMO;
- (3) the Treasury criteria by reference to which waste materials are included in the QMO; and
- (4) material describing the environmental policy context.

29. In this section we briefly describe the key points from each of the categories of materials on which Mr Nawbatt relied. The same material was before the FTT and much of it is referred to in the Decision. One issue between the parties is the extent to which this material assists in construing the relevant provisions. We consider the relevance of the material in due course.

Environmental objectives

30. Landfill tax was introduced in 1996 as a domestic initiative aimed at protecting the environment. The tax was not a requirement of EU law but it did help to fulfil the UK's obligations in EU law to take appropriate steps to encourage the prevention, recycling and processing of waste. It was intended to reduce the amount of waste, reduce the amount of material going to landfill and place the cost of landfill on the person disposing of the waste: see *Customs & Excise Commissioners v Parkwood Landfill Ltd* [2002] EWCA Civ 1707 at [9] and [10]. The purpose of landfill tax is to change behaviour, rather than just raise revenue. There is nothing wrong in principle with a landfill operator seeking to reduce its liability to landfill tax by recycling waste: see *Barr v Revenue Scotland* [2011] UT 11 at [43] and [45].

31. Other provisions have the same policy goals. The Waste (England and Wales) Regulations 2011 establish a duty on undertakings producing waste or involved in waste management to take all reasonable measures to apply the priorities described in the "waste hierarchy", which is as follows:

- (a) prevention;
- (b) preparing for re-use;
- (c) recycling;
- (d) other recovery (for example energy recovery);
- (e) disposal.

32. The aim is to push waste up the hierarchy as far as possible away from disposal, which is viewed as a last resort, to prevention.

33. These regulations and the explanatory note accompanying them also refer to reducing the overall impact of resource use, improving the efficiency of resource use and improving the use of waste as a resource.

34. The policy goals behind these regulations and behind landfill tax itself are consistent with Council Directive 1999/31/EC on the landfill of waste; this encourages prevention, recycling and recovery of waste, the use of recovered materials and energy so as to safeguard natural resources and the reduction and treatment of hazardous waste. There is also Commission Implementing Decision (EU) 2018/1147 dated 10 August 2018 which is concerned with establishing best available techniques (“BAT”). BAT 22 refers to material efficiency and states that in order to use materials efficiently, best available technique is to substitute materials with waste. It specifically refers to waste being used instead of other materials for the treatment of other wastes, for example using waste alkalis or waste acids for pH adjustment.

Consultation preceding the QMO

35. As stated above, the QMO revoked and replaced a qualifying materials order from 1996. The QMO was preceded, in April 2009, by a consultation paper published by HMRC and the Treasury on “Modernising landfill tax legislation”. The consultation encompassed the definition of qualifying material for the lower rate of tax. The intention was to review how landfill tax reflected current environmental protection regulation and waste industry practice; both had changed considerably since the tax was introduced. The consultation expressly recognised:

- (1) landfill tax is intended to reflect the environmental impact associated with the actual landfilling of waste;
- (2) where waste serves as a substitute for virgin material for engineering purposes at a landfill site, that waste should not be taxed;
- (3) the rationale for the lower rate of tax is the relatively low level of environmental impact associated with landfilling inert wastes;
- (4) landfill tax should provide an incentive to find more sustainable uses and treatments for waste.

36. The lead option for change identified in the consultation was based on whether the waste was inert or not. Whilst this option was not ultimately adopted, it did focus on the characteristics of the output of a waste generating process rather than the inputs.

37. An alternative option was based on additional criteria in addition to the inert characteristics of the waste. However, it recognised that any additional criteria could not be based on their impact on a particular industry. Note 9(a) therefore is not concerned with promoting the production of titanium dioxide. Another option considered was to restrict the lower rate to inert wastes, so as to strengthen the environmental rationale underpinning the lower rate.

38. As Mr Nawbatt rightly pointed out, and as one might expect, environmental objectives were at the heart of the consultation.

39. Cristal provided a written response to the consultation on 24 July 2009. It noted that EU BAT guidance documents included two possible treatment processes for dealing with the acidic ferrous chloride: either roasting or neutralisation and filter pressing. It stated that the neutralisation and filter pressing treatment resulted in less CO₂ emissions than the roasting treatment process and achieved the government's environmental policy objectives. It submitted that any landfill tax regime which encouraged a taxpayer not to adopt a best available technique would be contrary to the government's stated aims and a perverse outcome for an environmental tax. Cristal's representations were based entirely on the low environmental impact of the Cristal Waste and emphasised the short aftercare period of the Camp Wood landfill site where the Cristal Waste was sent.

40. Cristal proposed two options for the definition of qualifying material. First, that wastes landfilled in accordance with a best available technique should be exempt from the tax. Second, that wastes which are landfilled at sites with an aftercare period of 5 or 10 years should be treated as inactive waste and taxed at the lower rate. Cristal did not refer to the FCC Waste in its response to the consultation. We understand that at that time ferrous chloride and APCR were not mixed to produce waste such as the FCC Waste.

41. HMRC and the Treasury published a 'Government response to modernising landfill tax legislation' in March 2010. Annex A set out draft Treasury criteria for the purposes of section 42(4) FA 1996 which the Treasury would be required to have regard to in listing qualifying material for the lower rate of tax. The criteria were that qualifying material should (i) be non-hazardous; (ii) have low organic content so as to be non-biodegradable with low potential for greenhouse gas emissions; and (iii) have low polluting potential in a landfill environment where the aftercare period agreed with the Environment Agency is significantly lower than would normally be required for a non-hazardous waste landfill.

42. These criteria were adopted and published as Annex A to HMRC Brief 08/11. In explaining what changes were being made to the QMO, the Brief stated:

The residue from titanium dioxide manufacture will qualify, rather than titanium dioxide itself, reflecting industry views.

43. Whilst it is not clear why titanium dioxide itself was referred to as a waste, it is common ground between the parties that the "*industry views*" referred to were those of Cristal, as expressed in its response to the consultation. One of the changes made in the QMO in 2011 was therefore intended to apply the lower rate of landfill tax to the waste generated by the treatment process described in Cristal's response, namely the Cristal Waste.

Environmental policy

44. Mr Nawbatt emphasised the environmental policy and guidance which underpins landfill tax. We were taken to guidance from the Department for the Environment, Food and Rural Affairs issued in November 2010 and June 2011. The policy and guidance are really a function of the environmental objectives we have already discussed. The common theme to the guidance is driving wastes up the waste hierarchy with disposal being a last resort, and substituting wastes for raw materials where possible. It refers to mixing wastes with other materials, for example mixing acids and alkalis to adjust pH. It also refers to using the neutralisation capacity of a waste to replace lime in a neutralisation treatment. Landfill for hazardous wastes should be used only where there is no better recovery or disposal option.

45. The guidance specifically referred to APCR, explaining that APCR was hazardous because it was highly alkaline and contained heavy metals. It gave as an example of recovery within the waste hierarchy that lime-based waste could be used in cement manufacture as a replacement for lime as a raw material. It also stated that where possible APCR should be used as a replacement for lime in a neutralisation process.

The FTT decision

46. The FTT summarised the parties' submissions on the evidence and on the issue of statutory construction at [71] to [114] of the Decision. At [71] it identified some common ground and at [72] it identified the dispute in broad terms:

71. As for the application of the legislation, when construed as described above, in the light of the evidence, it was common ground that:

- (1) the language of Section 42(2) of the FA 1996 and Note (9)(a) did not require that, in order to qualify for the lower rate, a waste needed to be composed entirely of calcium reacted compounds;
- (2) the language was not focused on the elements which were the components of the waste but rather on the reactions which had led to the waste; and
- (3) the reactions giving rise to the creation of the FCC waste were primarily between calcium compounds within the APCRs and the [ferrous chloride].

72. However, there was a disagreement between the parties in relation to the extent to which waste needed to be the product of a reaction between calcium compounds and the [ferrous chloride] in order to satisfy the statutory language.

47. The FTT discussed the issue at [115] to [136], starting with its conclusion at [116]:

116. ... we have reached the conclusion that the FCC waste does not consist entirely of calcium based reaction waste from titanium dioxide production. Indeed, we think that that conclusion is self-evident, essentially for the reasons given by Mr Puzey and summarised in paragraphs 71 to 89 above.

48. The reasons given in those paragraphs by Mr Puzey, who appeared with Mr Joseph Millington before us and below, may be summarised as follows with paragraph references as appropriate:

- (1) The FCC Waste was as much, if not more, a product of neutralising the APCR with the ferrous chloride as it was the other way around. The FTT noted the presence of substantial non-reactive material in the APCR and the amount of APCR required to neutralise one tonne of ferrous chloride. Hence, the mere fact that the reactions creating the FCC Waste were primarily with calcium compounds in the APCR did not mean that the resulting waste was entirely a calcium based reaction waste from titanium dioxide production: see [74] and [86].
- (2) Between 70% and 90% of the APCR was non-reactive and not all of the reactive compounds in the APCR were calcium based. For example, 11.4% of one sample of APCR consisted of potassium compounds, which were potentially reactive: see [76].
- (3) Some 3.9 tonnes of APCR were required to neutralise 1 tonne of ferrous chloride: see [77].
- (4) Between 57% and 72% of the FCC Waste did not result from a reaction between alkaline compounds in the APCR and the acidic ferrous chloride. That was before taking

into account that not all the alkaline compounds in the APCR were calcium compounds: see [80].

(5) The APCR used to create the FCC Waste could not be compared to the slaked lime slurry used to create the Cristal Waste. 99.4% of the slaked lime which was used to create the slurry was pure calcium hydroxide. This was very different to the impurities and non-calcium compounds in the APCR. Further, the water used to make the slurry was an essential part of the process because the calcium hydroxide had to be diluted for the calcium based chemical reaction to occur: see [83].

(6) The fact that a lower rate for the FCC Waste would be consistent with the principles and aims of the environmental legislation, the waste hierarchy, best available techniques, the consultation process and the Treasury criteria could not override the plain meaning of the statutory provisions. The FCC Waste did not consist entirely of calcium based reaction waste from titanium dioxide production: see [88] and [89].

49. The FTT went on to explain its reasoning in more detail under a heading “Our conclusion”. It looked first at the construction of Note 9(a), stating at [120] that it took into account the context of UK environmental legislation, the consultation which preceded the QMO and the Treasury criteria. The FTT then said as follows:

121. However, none of the above matters can override the clear language which is used in Section 42(2) of the FA 1996 and the QMO. They can provide some context but they are not a substitute for examining the language actually used and, when one turns to considering whether the FCC waste can be said to “consist entirely of...calcium based reaction waste from titanium dioxide production”, we think that it is self-evident that it does not. As Mr Puzey succinctly pointed out, more than half of the FCC waste was neither reaction waste nor derived from titanium dioxide production. It is therefore clear that the FCC waste does not consist entirely of calcium-based reaction waste from titanium dioxide production.

122. We agree with Mr Puzey that:

- (1) the relatively low level of reactive material within the APCRs;
- (2) the presence of non-calcium based reactive materials within the APCRs; and
- (3) the amount of APCRs required to neutralise the [ferrous chloride],

mean that, although the process at FCC Knostrop undoubtedly included a reaction between the calcium hydroxide (and certain other calcium based reactive compounds) within the APCRs and the [ferrous chloride], somewhere between 57% and 72% of the FCC waste consisted of material which was not the result of a calcium based reaction at all. To a very significant extent, the FCC waste simply consisted of elements which were part of the APCRs and which did not react with the [ferrous chloride].

123. We also agree with Mr Puzey that the process which took place at FCC Knostrop is more accurately described as the neutralisation of the APCRs using [ferrous chloride] than the neutralisation of the [ferrous chloride] using APCRs. The Second Appellant recognised this in:

- (1) referring to the plant where the APCRs and the [ferrous chloride] were processed as the “Ash Plant”;
- (2) calling the log in which it recorded the process the “Ash Plant Log”; and
- (3) including a column in that log headed “Treated Ash Quality”.

As Mr Martin readily admitted at the hearing, the “Ash” referred to in each of those contexts was the APCRs and not the [ferrous chloride]. Thus, those references all support the conclusion that the process

which was going on at FCC Knothrop is more properly described as the treatment of the APCRs with [ferrous chloride] than as the treatment of the [ferrous chloride] with APCRs and that the majority of the FCC waste was simply the treated APCRs waste and not the treated [ferrous chloride] waste derived from the production of titanium dioxide.

124. We should make it clear that we do not base our conclusion on the mere fact that the process at FCC Knothrop happened to involve the neutralisation of the APCRs at the same time as the [ferrous chloride] was neutralised. We recognise that that is no different from the fact that the process at Stallingborough involves the neutralisation of the virgin calcium hydroxide slurry at the same time as the [ferrous chloride] is neutralised. Instead, our conclusion is based on:

(1) the extent of the non-reactive material and the non-calcium based reactive material within the APCRs and the amount of the APCRs which were required for the process – see paragraph 122 above; and

(2) our view, supported by the view of those conducting the process, that the essence of the process involved the neutralisation of the APCRs with [ferrous chloride] and not vice versa – see paragraph 123 above.

125. For the reasons set out above, notwithstanding the principles of statutory construction which we were urged by Mr Nawbatt to apply, we cannot see how the FCC waste can properly be said to satisfy the statutory language. Quite simply, the FCC waste did not consist entirely of calcium based reaction waste from titanium dioxide production and the fact that the use of APCRs instead of slaked lime to neutralise the [ferrous chloride] may fit better with the UK environmental legislation, may be consistent with the process of consultation leading to the enactment of the QMO and may be consistent with the Treasury criteria is not sufficient to make it so.

50. The FTT then went on to consider under the heading “The Cristal waste” at [126] to [136] a specific submission of Mr Nawbatt that the word “entirely” in Note 9(a) could not mean what it purported to mean because the Cristal Waste also contained some impurities, yet there was no dispute that the Cristal Waste was a qualifying material within Note 9(a). The FTT set out its reasons at [129] and [130] as to why the Cristal Waste could properly be described as consisting entirely of calcium based reaction waste from titanium dioxide production in contrast to the FCC Waste:

129. In our view, the starting point in determining whether or not a particular waste product consists entirely of calcium based reaction waste from titanium dioxide production is not to ask whether all of that waste product is the result of a reaction between alkaline calcium compounds and the acid arising from titanium dioxide production. Instead, one should instead consider whether the essence of the process by which the relevant waste product has been produced involves a reaction between alkaline calcium compounds and the acid arising from titanium dioxide production. As long as the latter is the case, then the waste product resulting from the process in question consists entirely of calcium based reaction waste from titanium dioxide production. Moreover, that is the case regardless of whether:

(1) the alkaline solution which is used to neutralise the acid contains reactive elements other than calcium; or

(2) some of the end waste product is not the result of a reaction between a calcium compound in the alkaline solution and the acid.

130. Applying that test in the present case, it is plain that the essence of the process which takes place at Stallingborough is exactly as described in paragraph 129 above. In other words, the only purpose of the process is to neutralise the [ferrous chloride] that has arisen from titanium dioxide production. That remains the case despite the fact that:

(1) the virgin calcium hydroxide slurry which gives rise to the reaction contains a small amount of reactive elements other than calcium; and

(2) some of the constituent elements of the resulting Cristal waste are not the result of a reaction between a calcium compound and the FC.

51. The FTT went on to explain at [131] to [134], by reference to the facts, why the Cristal Waste satisfied that test and at [135] and [136] why the FCC Waste did not satisfy the test:

131. The Cristal waste displays both of the features described in paragraphs 130(1) and 130(2) above because:

(1) there are some de minimis impurities in the slaked lime which is the basis of the virgin calcium hydroxide slurry that is applied to the [ferrous chloride]; and

(2) that slurry contains water, which could be tap water or water arising from the titanium dioxide production at Cristal's plant, and that water itself contains impurities.

132. However, the crucial point is that those impurities are simply unavoidable features of the calcium based reaction which is the essence of the process giving rise to the Cristal waste or, to put it another way, unavoidable features of the alkaline which is required to be applied in order to achieve the end objective of neutralising the [ferrous chloride] with calcium hydroxide. They do not change that end objective and thus they do not change the essence of the process which is occurring at the site. Instead, that essence remains the neutralisation of the [ferrous chloride] arising from titanium dioxide production by way of a reaction between a reactive alkaline which is calcium-based and that [ferrous chloride].

133. We say that because:

(1) the minimal impurities in the slaked lime are not there by design – they are there simply because the slaked lime originates from the excavation of calcium carbonate from quarries and then the addition of water to the calcium oxide which results from heating that calcium carbonate to a very high temperature in a kiln. They are thus an inevitable feature of the steps which need to be taken to produce the slaked lime in the first place. The material which is excavated from the quarries inevitably contains traces of elements other than calcium carbonate and so too does the water which is added to convert the calcium oxide into calcium hydroxide; and

(2) the elements contained in the water which is used to create the slurry are there because the slaked lime is highly reactive and therefore needs to be diluted in order properly to carry out the calcium-based reaction.

The fact that those impurities are simply unavoidable features of the process leading to the end objective of neutralising the [ferrous chloride] arising from titanium dioxide production with a reactive alkaline solution that is largely calcium based and are not there for any other reason means they do not change the essence of the process, which is to do just that. Moreover, prior to its dilution in the water, at least 90%, and very likely a considerably greater percentage, of the slaked lime consists of pure calcium hydroxide. (We agree with Mr Puzey's observation that the 90% figure is likely to be a very conservative estimate as the supplier of the slaked lime, the First Appellant, was effectively warranting that the calcium hydroxide content of the slaked lime would not be below the cited figure.)

134. So, when one asks whether the Cristal waste can accurately be described as consisting entirely of a calcium based reaction waste from titanium dioxide production, the answer is demonstrably that it is.

135. The same cannot be said of the FCC waste. On the contrary, as we have said in paragraph 123 above, the essence of the process giving rise to the FCC waste was the neutralisation of the APCRs using the FC. In addition:

- (1) a significant part of the APCRs consisted of material which was not calcium based; and
- (2) the presence of that material was not attributable to the purpose of neutralising the [ferrous chloride] arising from titanium dioxide production.

Thus, whilst a calcium based reaction did occur in the course of the process which led to the FCC waste, it would be a misnomer to describe that calcium based reaction as amounting to the essence of the process. Consequently, the waste which arose as a result of the process did not consist entirely of a calcium based reaction waste from titanium dioxide production and the Cristal waste is readily distinguishable from the FCC waste.

136. It may be seen from the above that we emphatically reject the proposition that, because:

- (1) the slaked lime used in the course of the process at Stallingborough is diluted in water so that only 20% of the virgin calcium hydroxide slurry consists of calcium hydroxide; and
- (2) between 10% and 30% of the APCRs was reactive and most of the reactive compounds were calcium based,

the Cristal waste and the FCC waste must inevitably stand or fall together when it comes to determining whether or not they come within the ambit of Note (9)(a). The percentage of calcium hydroxide which is in the virgin calcium hydroxide slurry at Stallingborough is simply the result of the need to dilute the slaked lime appropriately so that the calcium based reaction which occurs in the process at Stallingborough neutralises the [ferrous chloride] from the titanium dioxide production without giving rise to a waste which is itself hazardous by virtue of its alkalinity. In contrast, the percentage of calcium hydroxide which is in the APCRs at FCC Knostrop was a function of the substantial other material of which the APCRs consisted, whose presence in the APCRs had nothing whatsoever to do with the calcium based reaction which occurred at FCC Knostrop.

52. In the circumstances, the FTT held that the FCC Waste was not entirely a calcium based reaction waste from titanium dioxide production and dismissed the appeals.

Grounds of appeal

53. The appellants rely on three grounds of appeal:

Ground 1 – The FTT failed to correctly construe, and took into account irrelevant considerations in its application of, section 42(2) FA 1996 and Note 9(a) of the QMO (‘the relevant statutory provisions’).

Ground 2 – The FTT erred in law in applying an “*essence of the process*” / “*only purpose*” test which is not contained in, and involves an impermissible gloss on, the relevant statutory provisions.

Ground 3 - The FTT erred in law in failing to construe the relevant statutory provisions purposively and /or failing to consider whether its construction and application of the relevant statutory provisions – in particular its “*essence of the process*” / “*only purpose*” test – was consistent with the underlying environmental objectives of section 42(2) FA 1996, the QMO and the Treasury criteria and / or produced a result which was inconsistent with those environmental objectives.

54. Mr Nawbatt submitted under Ground 1 that if the words “the essence of” were deleted from [129], then that paragraph would properly set out the relevant statutory test. The underlying criticism in all

three grounds of appeal is that the FTT erred in law in applying a test which involved consideration of whether the essence of the process (or the only purpose) by reference to which the waste material was produced involved a reaction between calcium compounds and the ferrous chloride waste from titanium dioxide production.

55. On that basis we can address all three grounds of appeal together and consider whether the FTT erred in law by placing an impermissible gloss on the statutory wording in seeking to identify the essence and only purpose of the process which produced the FCC Waste.

Discussion

56. The approach we should take in construing section 42(2) FA 1996 and Note 9(a) is well established. We must have regard to the purpose of the provisions and interpret the language, so far as possible, in the way which best gives effect to that purpose: see *UBS AG v HM Revenue and Customs* [2016] UKSC 13 at [61]. As the Supreme Court stated in *Rosendale BC v Hurstwood Properties (A) Ltd* [2022] AC 690:

15. In the task of ascertaining whether a particular statutory provision imposes a charge, or grants an exemption from a charge, the *Ramsay* approach is generally described - as it is in the statements quoted above - as involving two components or stages. The first is to ascertain the class of facts (which may or may not be transactions) intended to be affected by the charge or exemption. This is a process of interpretation of the statutory provision in the light of its purpose. The second is to discover whether the relevant facts fall within that class, in the sense that they answer to the statutory description (*Barclays Mercantile* at para 32). This may be described as a process of application of the statutory provision to the facts. It is useful to distinguish these processes, although there is no rigid demarcation between them and an iterative approach may be required.

57. External aids to interpretation may assist in determining the purpose and meaning of the provision. Such aids can be used not just to resolve ambiguity, but also to reveal where ambiguity may exist. As the Supreme Court stated in *Rosendale*:

16. Both interpretation and application share the need to avoid tunnel vision. The particular charging or exempting provision must be construed in the context of the whole statutory scheme within which it is contained. The identification of its purpose may require an even wider review, extending to the history of the statutory provision or scheme and its political or social objective, to the extent that this can reliably be ascertained from admissible material.

58. However, external aids cannot displace the meanings conveyed by the words of a statute that, after consideration of that context, are clear and unambiguous and which do not produce absurdity: see *R (O) v Secretary of State for the Home Department* [2022] UKSC 3 at [30]:

30. External aids to interpretation therefore must play a secondary role. Explanatory Notes, prepared under the authority of Parliament, may cast light on the meaning of particular statutory provisions. Other sources, such as Law Commission reports, reports of Royal Commissions and advisory committees, and Government White Papers may disclose the background to a statute and assist the court to identify not only the mischief which it addresses but also the purpose of the legislation, thereby assisting a purposive interpretation of a particular statutory provision. The context disclosed by such materials is relevant to assist the court to ascertain the meaning of the statute, whether or not there is ambiguity and uncertainty, and indeed may reveal ambiguity or uncertainty: Bennion, Bailey and Norbury on Statutory Interpretation, 8th ed (2020), para 11.2. But none of these external aids displace the meanings conveyed by the words of a statute that, after consideration of that context, are clear and unambiguous and which do not produce absurdity.

59. The position was recently summarised by the Court of Appeal in *HM Revenue & Customs v Bluecrest Capital Management (UK) LLP* [2025] EWCA Civ 23 at [63] and [108]:

63. While all of this guidance is important, I emphasise in particular that (a) the words which Parliament has chosen to enact are “the primary source by which meaning is ascertained”, for “the important constitutional reason” explained by Lord Nicholls in the *Spath Holme* case that citizens “should be able to rely upon what they read in an Act of Parliament”; (b) “[e]xternal aids to interpretation must therefore play a secondary role”; (c) no external aids can “displace the meanings conveyed by the words of a statute that, after consideration of that context, are clear and unambiguous and which do not produce absurdity”; and (d) “the intention of Parliament” is an objective concept in the sense lucidly explained by Lord Nicholls in *Spath Holme* [2001] 2 AC 349, 396.

...

108. ... The incantation of a purposive interpretation is of no avail, if the relevant words construed in their context, and with due regard to the statutory purpose, admit of only one meaning and do not produce absurdity...

60. The lower rate of tax was intended to apply to the Cristal Waste. The Cristal Waste was not identified specifically, but it is common ground that the words used were intended to describe the reaction giving rise to the Cristal Waste. That is not to say that some other waste might not meet the definition of a qualifying material in Note 9(a). It is necessary to determine whether the FCC Waste falls within the description in section 42(2) and Note 9(a) so as to have the benefit of the lower rate.

61. We can deal at the outset with a suggestion made by Mr Nawbatt that the word “entirely” in section 42(2) was intended to exclude “mixed” loads. The term “mixed” load is not used in the legislation, but is a shorthand for loads which meet the description set out in section 63(2), namely that, where HMRC so direct:

Material...must be treated as qualifying material if it would in fact be such material but for a small quantity of non-qualifying material; and whether a quantity of non-qualifying material is small must be determined in accordance with the terms of the direction.

62. This was not a point raised in the grounds of appeal or in the appellants’ skeleton argument. In any event, we do not consider that section 42(2), in requiring the material disposed of to consist entirely of qualifying material, is intended only to deny the lower rate to mixed loads which consist of qualifying material and other material. It is necessary to look at the material disposed of and ask the question whether that material consists entirely of qualifying material, irrespective of whether it is a mixed load. It was also common ground that the FCC Waste was not a mixed load in that sense. It was comprised entirely of one material and the question is whether that material is a qualifying material.

63. Mr Nawbatt’s main submission was that, correctly construed, the test in section 42(2) and Note 9(a) is satisfied if the process by which the relevant waste has been produced involves a reaction between alkaline calcium compounds and the acid arising from titanium dioxide production. As long as that is the case, then the waste product resulting from that process consists entirely of calcium based reaction waste from titanium dioxide production. The FTT found as a fact that the process by which the FCC Waste had been produced did involve a reaction between calcium compounds in the APCR and the ferrous chloride arising from titanium dioxide production. The test was therefore satisfied. He relied in particular on the following findings of the FTT:

(1) A calcium based reaction did occur in the course of the process which led to the FCC Waste.

(2) A significant majority of the reactive compounds in the APCR were calcium based and they tended to be more reactive than the non-calcium based reactive compounds.

(3) It was common ground, as recorded at [71(3)] that the reactions giving rise to the FCC Waste were primarily between calcium compounds in the APCR and the ferrous chloride.

64. In reaching its conclusion that the FCC Waste did not consist entirely of calcium based reaction waste, Mr Nawbatt submitted that the FTT wrongly took into account irrelevant factors, in particular those referred to at [121] to [124]. Further, in distinguishing the FCC Waste from the Cristal Waste the FTT wrongly took into account the factors referred to at [132] and [136].

65. Mr Nawbatt also submitted that on the FTT's approach to the test, described at [124], the Cristal Waste also did not consist entirely of calcium based reaction waste from titanium dioxide production. The FTT relied in part on the extent of the non-reactive material and non-calcium based reactive material in the APCR. However:

(1) The slaked lime slurry contained only 10 – 20% calcium compounds and could contain reactive non-calcium compounds.

(2) It was unclear whether the water used to create the slurry contained reactive alkaline elements.

(3) The slurry produced by mixing the slaked lime slurry and the ferrous chloride contained solids originally existing in the ferrous chloride, solids precipitated during the reaction and unreacted calcium hydroxide.

(4) The filter cake produced by the process comprised 40 – 50% liquid by weight.

66. He went on to say that it would be an absurd result if the Cristal Waste did not satisfy the test in Note 9(a), when it was common ground that Note 9(a) was specifically intended to apply a lower rate of tax to the Cristal Waste. He submitted that the FTT's response to that difficulty was to put a gloss on the statutory language by reference to its "essence of the process" test. Instead, the FTT should have held that both the FCC Waste and the Cristal Waste satisfied the statutory test.

67. In Mr Nawbatt's submission, the FTT was also wrong to say that the statutory language was clear, so that the environmental objectives and context did not assist in construing the language, whilst at the same time placing a gloss on that language to explain why the Cristal Waste was a qualifying material. The test is concerned with the chemical reaction taking place in the process and not the purpose of the process. Based on the chemical reaction taking place, both the FCC Waste and the Cristal Waste were qualifying materials.

68. The FTT's gloss in looking at the essence of the process and the purpose of the process were, said Mr Nawbatt, inconsistent with and frustrated the environmental objectives and context of the statutory provisions. The FTT failed to have regard to the environmental objectives underpinning the provisions, the consultation which preceded the QMO, the Treasury criteria and the nature of other wastes listed in the schedule to the QMO. The implication of the FTT's approach is that only waste resulting from the neutralisation of ferrous chloride by a virgin calcium reagent would qualify for the lower rate of tax. Waste resulting from any process which had an ancillary purpose, such as treating one hazardous waste with another waste in accordance with the waste hierarchy, would be excluded from the lower rate. The unchallenged expert evidence was that neutralising the ferrous chloride using a waste material was best practice and should be implemented wherever possible. The FTT ignored that evidence. It approached the issue from the opposite perspective, and found that the characteristics of the FCC Waste were a reason why it was not a qualifying material. The starting point ought to

have been to focus on the reaction taking place, taking into account that it was best practice to substitute a waste for a virgin raw material.

69. We do not accept Mr Nawbatt's submissions. The FCC Waste cannot fall within the description in Note 9(a) simply because, as Mr Nawbatt submitted, the process by which it was produced "involves" a reaction between alkaline calcium compounds and the ferrous chloride. Nor can Note 9(a) apply simply because use of the APCR to neutralise the ferrous chloride amounts to a waste recovery operation within the waste hierarchy and is a best available technique. Mr Nawbatt's submission in our view places too much emphasis on the context in which the QMO was enacted at the expense of the words used in section 42(2) and Note 9(a).

70. In our view, the statutory language describes a straightforward test which requires consideration of whether the waste in question is entirely a calcium based reaction waste from titanium dioxide production. We consider that the FTT's reasoning at [121] and [122] was correct. It is self-evident from the following facts that the FCC Waste does not meet that statutory description:

- (1) The APCR contained relatively low levels of reactive material. At least 70% of the APCR did not react with the ferrous chloride.
- (2) The reactive material in the APCR contained a significant proportion of non-calcium based compounds.
- (3) Between 57% and 72% of the FCC Waste was neither reaction waste nor did it derive from titanium dioxide production.
- (4) All this meant that a large quantity of APCR was required to neutralise the ferrous chloride. Some 3.9 tonnes of APCR were required to neutralise 1 tonne of ferrous chloride, compared to 260 kg of slaked lime powder.

71. In particular, we agree with the FTT that the words of section 42(2) and Note 9(a) are clear. To be a qualifying material, the waste must consist entirely of calcium based reaction wastes from titanium dioxide production. The environmental context, the consultation which led to the QMO and the Treasury criteria do not serve to explain or modify the statutory words. Indeed, it is recognised that there are limits as to the assistance that broad brush policy goals can provide in determining the precise scope of a landfill tax provision: see *Devon Waste Management Limited v HM Revenue & Customs* [2021] EWCA Civ 584 at [68] per Lady Rose. To use external aids to explain or modify the statutory words so as to include the FCC Waste in the list of qualifying materials would be an exercise in re-writing the legislation rather than an exercise in statutory construction.

72. This does not mean that only waste resulting from the neutralisation of ferrous chloride by a virgin calcium reagent qualifies for the lower rate of tax. Nor does it mean that the FTT's conclusion is inconsistent with the statutory obligation to apply the waste hierarchy because that conclusion promotes use of virgin material rather than recovery or use of waste. We do not know whether there are other alkaline waste products which could be used to neutralise the ferrous chloride in circumstances where the resulting waste would consist entirely of a qualifying material.

73. The fact that using APCR to neutralise the ferrous chloride is a best available technique, is environmentally beneficial and meets the Treasury criteria is not sufficient to bring the FCC Waste within the lower rate of tax. The Treasury must set criteria for qualifying materials and in doing so, must have regard to those criteria and any other matters they consider relevant. One might expect the Treasury to have had regard to other environmental factors, including the waste hierarchy. Indeed, Mr Nawbatt accepted that not all the wastes listed in the QMO fulfil all the Treasury Criteria, although he did submit that the other wastes listed in the Schedule to the QMO were generally mixed, inert

materials with a low environmental impact when sent to landfill. That may be true, although there was no finding to that effect.

74. We are satisfied, taking into account the external aids relied on by Mr Nawbatt, that the intention of Parliament was to apply a lower rate of tax to certain wastes which had a low environmental impact. Parliament left it to the Treasury to determine the criteria which it would take into account when defining the wastes which qualified for the lower rate, and Parliament also provided that the Treasury could also take into account other factors it considered relevant. It is ultimately a matter for the Treasury to list qualifying materials, and the words used in Note 9(a) are clear.

75. In addition to his submissions based on the environmental and statutory context, Mr Nawbatt focussed on the FTT's references to the essence of the process and whether the only purpose of the process was to neutralise the ferrous chloride.

76. The FTT's first reference to the essence of the process was at [124(2)] where it stated its view that the essence of the process resulting in the FCC Waste was the neutralisation of the APCR with the ferrous chloride and not vice versa. The FTT reached that view by reference, in part, to its findings at [123] which it considered supported its conclusion that the process was more accurately described as the neutralisation of the APCR rather than the ferrous chloride.

77. We agree with Mr Nawbatt that in considering whether the FCC Waste was entirely a calcium based reaction waste, the FTT placed an impermissible gloss on the statutory language. In our view, it erred in law when it considered the essence or purpose of the process. It is no part of the statutory test to consider whether, on the facts of this case, the process involved neutralising the ferrous chloride with the APCR or vice versa. The statutory test makes no reference to the purpose of the reaction, save that it does require that the calcium based reaction waste must derive from titanium dioxide production. In that sense, the relevant waste must be produced as part of the process of producing titanium dioxide, which the parties accept includes dealing with the waste ferrous chloride. However, in our view it is not then necessary to consider whether, in dealing with the waste ferrous chloride, the only purpose of the reaction was to neutralise the ferrous chloride. It is not the case that if there is any other purpose or benefit to the process then the waste falls outside Note 9(a). The statutory language does not in our view justify such an approach.

78. Mr Puzey submitted that in seeking to identify the "essence of the process", the FTT was not applying a gloss to the statutory language. Rather, it was simply using intelligible language to distinguish the different processes leading to the FCC Waste and the Cristal Waste and the very different composition of those wastes. In doing so, it was expressing the only conclusion available to it on the facts.

79. We do not accept that submission. When the FTT went on to compare the Cristal Waste with the FCC Waste, it returned to its consideration of the essence of the process at [129]. It then said at [130] that it was "[a]pplying that test..." and in elucidating the test it said: "*In other words, the only purpose of the process is to neutralise the [ferrous chloride] that has arisen from titanium dioxide production*". It was not simply using intelligible language to distinguish the different processes involved.

80. The FTT was certainly entitled to have regard to the obvious factual differences between the processes which led to each waste. We acknowledge that the reasoning in a decision should not be subject to a narrow textual analysis, or construed as though it was a piece of legislation or a contract: see *Volpi v Volpi* [2022] EWCA Civ 464 at [2(vi)]. However, in our view the FTT went beyond the statutory language and had regard to irrelevant factors, namely the essence and purpose of the

processes. The FTT ought to have focussed on the calcium based reaction and whether the FCC Waste was entirely a calcium based reaction waste from titanium dioxide production.

81. We therefore consider that the FTT erred in law when it adopted, as part of its reasoning, that the essence of the process which created the FCC Waste was to neutralise the APCR with the ferrous chloride.

82. The reason why the FTT considered the essence of the process was because it was trying to explain why the Cristal Waste fell within the statutory description but the FCC Waste did not. We accept that the FTT was right to seek to explain what distinguished the Cristal Waste from the FCC Waste. It did so in order to see whether the result in relation to the Cristal Waste would be absurd. If the test it had applied meant that the Cristal Waste did not qualify for the lower rate, that would be an absurd outcome. Everyone agreed that Note 9(a) was intended to apply a lower rate of tax to the Cristal Waste. However, in distinguishing between the two wastes at [129], the FTT again applied a test which required it to consider whether the essence of the process by which the waste was produced involved a reaction between alkaline calcium compounds and the ferrous chloride arising from titanium dioxide production.

83. It is clear to us, without reference to the essence or only purpose of the process, that the Cristal Waste was entirely a calcium based reaction waste from titanium dioxide production, and that is for the following reasons.

(1) As the FTT noted at [131] to [133], there were “*minimal impurities*” in the slaked lime slurry used in the process to neutralise the ferrous chloride, and that the slurry contained site water which itself contained impurities. It found as a fact that these impurities were “*unavoidable features of the process*”. The slaked lime powder consisted of at least 90% pure calcium hydroxide. We agree with the FTT that in those circumstances the existence of minimal impurities in the Cristal Waste did not cause the Cristal Waste to fall outside Note 9(a). Nor indeed did the existence of water in the slaked lime slurry and in the resulting Cristal Waste. The FTT found that the slaked lime was highly reactive and had to be diluted with water in order to carry out the calcium based reaction between the calcium hydroxide and the ferrous chloride. The water was a necessary part of the process and could properly be viewed as reaction waste.

(2) In contrast, at least 70% of the APCR played no part in the reaction with the ferrous chloride. There was no finding that this material was a necessary part of the process. Between 57% and 72% of the FCC Waste was neither reaction waste nor was it a necessary part of the process. Mr Nawbatt’s submissions to the contrary were not supported by any finding of fact by the FTT. Further, the reactive material in the APCR contained a significant proportion of non-calcium based compounds.

84. The existence of those additional materials in the APCR and in the FCC Waste means that the FCC Waste is not entirely the product of a calcium based reaction process. The fact that treating the ferrous chloride with APCR has become a best available technique does not justify a conclusion that the FCC Waste is entirely a qualifying material for the purposes of section 42(2) and Note 9(a). At most, it might support arguments for an amendment to the list of qualifying materials, but that is a matter for Parliament.

85. Mr Nawbatt noted that the individual compounds referenced at Note 9(b) – (j) as falling within Note 6 must be mixed with other waste material because the individual compounds would not be waste material. That may be the case, but there was no evidence before the FTT or available to us in that regard that would assist in construing Note 9(a).

86. Mr Nawbatt submitted that it was not open to the FTT or to us on the basis of the common ground recorded at [71] of the Decision to find that the FCC Waste was not entirely a calcium based reaction waste. We do not accept that submission. Adopting the same sub-paragraph numbers as in [71]:

(1) It was common ground that a waste did not need to be composed entirely of calcium reaction compounds. We acknowledge that not all the Cristal Waste comprised calcium reaction compounds because of the presence of impurities and water. However, the impurities and the water were unavoidable features of the process and fall within the term “calcium based reaction waste”.

(2) The test we have applied focusses on the reactions which led to the waste.

(3) The reactions giving rise to the FCC Waste were primarily between calcium compounds in the APCR and the ferrous chloride. However, that does not mean that the FCC Waste fell within Note 9(a). The fact that at least 70% of the APCR did not react with the ferrous chloride and was not necessary for the process cannot be ignored.

87. In short, the Cristal Waste was entirely a calcium based reaction waste. The process leading to the FCC Waste produced some calcium based reaction waste but the FCC Waste was not entirely a calcium based reaction waste.

Conclusion

88. Both parties agreed that if the FTT did err in law, then we should set aside the Decision and re-make the decision based on the FTT’s findings of fact. We have found that the FTT did err in law in the test it applied. We shall therefore set aside the Decision. However, for the reasons given above we are satisfied that the FCC Waste was not entirely a calcium based reaction waste from titanium dioxide production. We therefore re-make the decision and dismiss the appellants’ appeals against the assessment.

JONATHAN CANNAN and ANNE REDSTON

UPPER TRIBUNAL JUDGES

RELEASE DATE: 28 February 2025