

**IN THE SINGAPORE INTERNATIONAL COMMERCIAL COURT
OF THE REPUBLIC OF SINGAPORE**

[2022] SGHC(I) 2

Suit No 1 of 2015

Between

- (1) BCBC Singapore Pte Ltd
- (2) Binderless Coal Briquetting
Company Pty Limited

... Plaintiffs

And

- (1) PT Bayan Resources TBK
- (2) Bayan International Pte Ltd

... Defendants

JUDGMENT

[Contract — Remedies — Damages]

TABLE OF CONTENTS

INTRODUCTION	1
BACKGROUND FACTS	1
THE PARTIES	2
THE JV DEED	2
THE PREVIOUS JUDGMENTS	5
THE PARTIES' CASES	12
BCBCS'S CASE.....	12
BR'S CASE	13
THE ISSUES BEFORE THE COURT	15
ISSUE 1: PRELIMINARY LEGAL ISSUES	17
WHETHER THE LOSSES CLAIMED BY BCBCS ARE TOO REMOTE	17
WHETHER LOANS CAN BE RECOUPED AS A FORM OF WASTED EXPENDITURE	22
WHETHER THE LOSSES CLAIMED BY BCBCS ARE BARRED BY THE RULE AGAINST REFLECTIVE LOSS	24
WHETHER BCBCS IS ENTITLED TO CLAIM DAMAGES FOR BOTH WASTED EXPENDITURE AND LOSS OF A CHANCE	28
WHETHER BCBCS IS ENTITLED TO RECOVER ITS WASTED EXPENDITURE THROUGH THE CASH FLOW FROM THE PRM.....	30
WHETHER BCBCS IS ENTITLED TO RECOVER SUMS THAT IT UNILATERALLY LOANED TO KSC UNDER THE PLFA.....	35
CONCLUSION ON ISSUE 1	36
ISSUE 2: WHETHER BCBCS WOULD HAVE RECOVERED ITS WASTED EXPENDITURE	37

WHETHER THE TABANG PLANT WOULD HAVE ACHIEVED NAMEPLATE CAPACITY BY JUNE 2012.....	37
<i>The technology underlying the BCB Process</i>	37
<i>Issues with the Tabang Plant</i>	38
(1) Coal injection system	41
(2) Dust extraction system	43
(3) Briquetting machines (the briquetters).....	46
(4) Drying columns.....	48
(5) Cage mill crusher, dried coal bin system and Redler distribution conveyors.....	52
(6) Conclusion on the Tabang Plant	52
<i>Quality of the briquettes</i>	53
(1) BR’s evidence	53
(2) BCBCS’s evidence.....	57
(3) Our findings	63
<i>Conclusion</i>	66
WHETHER BR WOULD HAVE BEEN ENTITLED TO WIND UP KSC	67
WHETHER BCBCS’S LIKELY CASH FLOW FROM THE PROJECT WOULD HAVE COVERED ITS WASTED EXPENDITURE	71
<i>The expiry of BR’s obligation to supply coal to KSC</i>	72
<i>The likely life of the Tabang Plant</i>	74
<i>CCR</i>	75
<i>The likely coal prices</i>	76
(1) Historical price of feedstock coal.....	76
(2) Forecast price of feedstock coal.....	78
(3) Historical price of upgraded coal briquettes	79
(4) Forecast price of upgraded coal briquettes.....	81
<i>Whether there should be provision for additional CAPEX</i>	81
<i>The validity of the parties’ respective OPEX assumptions</i>	82

<i>Whether BCBC would have deferred the payment of certain fees by KSC</i>	83
<i>Whether KSC would have been gifted US\$20m</i>	85
<i>The cash flow under the PRM</i>	86
<i>Whether BR’s performance under the JV Deed should be taken into account and, if so, how it should be taken into account</i>	88
CONCLUSION ON ISSUE 2	89
ISSUE 3: BCBCS’S CLAIM FOR LOSS OF A CHANCE	91
WHETHER BR WAS OBLIGED TO PROCEED WITH THE EXPANSION OF THE TABANG PLANT TO 3 MPTA	91
WHETHER THE DOCTRINE OF LOSS OF A CHANCE IS APPLICABLE	92
WHETHER BCBCS HAS PROVED ITS LOSS OF A CHANCE TO PROFIT FROM THE TABANG PLANT’S INCREASED CAPACITY	97
<i>Whether the parties would have expanded the capacity of the Tabang Plant to 3 MTPA</i>	98
<i>Whether the capacity of the Tabang Plant would have been expanded to 3 MTPA?</i>	100
CONCLUSION ON ISSUE 3	102
CONCLUSION	103

This judgment is subject to final editorial corrections approved by the court and/or redaction pursuant to the publisher’s duty in compliance with the law, for publication in LawNet and/or the Singapore Law Reports.

BCBC Singapore Pte Ltd and another
v
PT Bayan Resources TBK and another

[2022] SGHC(I) 2

Singapore International Commercial Court — Suit No 1 of 2015
Quentin Loh JAD, Vivian Ramsey IJ and Anselmo Reyes IJ
21–25, 28–30 September 2020, 9 January 2021

7 February 2022

Judgment reserved.

Quentin Loh JAD, Vivian Ramsey IJ and Anselmo Reyes IJ:

Introduction

1 This is the third and final tranche (“Tranche 3”) of these proceedings which arise from a joint venture between Australian and Indonesian companies to exploit a new technology to upgrade coal for commercial sale that ended in a series of disputes. This judgment deals with the issues of loss and damage claimed by the plaintiffs.

Background facts

2 The full facts of this case have been set out in *BCBC Singapore Pte Ltd and another v PT Bayan Resources TBK and another* [2016] 4 SLR 1 (“*First Judgment*”) and *BCBC Singapore Pte Ltd and another v PT Bayan Resources TBK and another* [2017] 5 SLR 77 (“*Second Judgment*”). For completeness, there is a third judgment on a discrete issue – whether the first plaintiff, BCBCS,

could fund the joint venture vehicle, KSC, on its own up to the point when the commissioning and testing of the Tabang Plant was completed or until June 2012 (see [13] below). The Tabang Plant was the coal processing plant which the parties set up in Tabang, Indonesia pursuant to their joint venture.

3 We will set out only those facts that are relevant to the issues raised in Tranche 3 and reference should be made to the three earlier judgments for the more complete facts. Unless otherwise specified, we adopt the abbreviations used in the *Second Judgment*.

The parties

4 The second plaintiff, BCBC, holds the exclusive worldwide licence of a technology for the upgrading of sub-bituminous coal known as the Binderless Coal Briquetting Process or the BCB Process. The first plaintiff, BCBCS, is a company incorporated in Singapore. BCBC and BCBCS are indirect wholly-owned subsidiaries of the second defendant by counterclaim, White Energy Company Ltd, or WEC, a public-listed company incorporated in Australia.

5 The first defendant, BR, is a public-listed company incorporated in Indonesia that owns subsidiaries which operate sub-bituminous coal mines in Tabang, Indonesia. Of these subsidiaries, only Bara and FSP are material for present purposes. The second defendant, BI, is a company incorporated in Singapore and is an associated company of BR.

The JV Deed

6 In early May 2005, the Defendants learnt about the BCB Process from the sharing by Mr Clark, the then-general manager of BCBC, at a conference in

Lexington, Kentucky. Further discussions followed, and eventually the JV Deed was executed between BCBC and BI on 7 June 2006.

7 Pursuant to the JV Deed, the parties agreed to construct and commission the Tabang Plant to exploit the BCB Process to upgrade sub-bituminous coal produced by the Defendants for commercial sale. The joint venture company, KSC, was incorporated in Indonesia in January 2007, with BCBCS and BI holding respectively 51% and 49% of its issued shares. In October 2008, BI sold its shares in KSC to BR, as part of BR’s corporate restructuring. By way of a Deed of Novation executed in 2009, BCBCS and BR were substituted for BCBC and BI respectively as the parties to the JV Deed. The Deed of Novation therefore aligned the identities of the parties to the JV Deed with the identities of the shareholders in KSC (namely, BCBCS and BR, holding respectively 51% and 49% of its shares).

8 Apart from the JV Deed, the parties also entered into a number of ancillary documents that amended the JV Deed and, more importantly, recorded their agreement on various issues that emerged in the course of the joint venture (see also the *First Judgment* at [22]–[66]). These documents included:

- (a) The Funding MOU: This document was dated 16 March 2009 and detailed the parties’ respective obligations to fund KSC.
- (b) The Expansion MOU: This document was also dated 16 March 2009 and concerned the future expansion of the joint venture.
- (c) The Priority Loan Funding Agreement or PLFA: This agreement was signed by KSC, BR and BCBCS on 17 December 2010 but was backdated to 22 April 2010. Under this agreement, BCBCS would advance a revolving working capital facility of up to US\$20m (“the

Priority Facility”) to KSC. BR would, in turn, supply coal (through Bara and FSP) to KSC at the market price but would require payment of only US\$8 per tonne upon delivery, with the balance being looked after by BR (“the Coal Advance”). By way of an addendum, which was stated to be “an inseparable part of the [PLFA]”, the Priority Facility was increased to US\$40m (“the Addendum”). The Priority Facility was eventually exhausted in August 2011 (see *First Judgment* at [134]).

(d) The 2010 CSAs: These were coal supply agreements entered into between KSC and BR’s coal mining subsidiaries – namely, Bara and FSP – between March and June 2011. They superseded the earlier coal supply agreement which KSC had entered into with Bara in 2008, the 2008 CSA (see *First Judgment* at [32(a)]). Under the 2010 CSAs, Bara and FSP agreed to supply coal to KSC at the benchmark price provided for under Indonesian law (the “HBA Price”). The HBA Price was the result of a piece of legislation passed by the Indonesian government, *Regulation 17 of 2010 on Procedures to Determine the Benchmark Price for the Sale of Minerals and Coals*, which put in place benchmark prices for the sale of minerals and coal in Indonesia (the “HBA Regulations”). However, as a result of the PLFA, KSC was only required to pay US\$8 per tonne of coal upfront (see [8(c)] above). The 2010 CSAs were backdated to 1 October 2010, the date on which the HBA Regulations came into force (see *Second Judgment* at [16]).

(e) The April 2011 Side Letter: This side letter was signed by BCBC, BR, Bara and KSC on 5 April 2011. The parties thereby agreed that Bara and KSC had entered into the 2010 CSAs to comply with the Indonesian legislative requirements in connection with the calculation of the price of coal to be supplied by Bara to KSC. Importantly, the April

2011 Side Letter provided for a “Payments Reconciliation” mechanism (“PRM”). The PRM was an arrangement among the parties to realign their financial contributions to KSC and to settle how profits from the joint venture would be shared. The inclusion of the PRM in the April 2011 Side Letter was prompted by changes in coal prices arising from the HBA Regulations.

The previous judgments

9 The parties’ relationship subsequently deteriorated into a series of disputes, culminating in the commencement of these proceedings by the Plaintiffs against the Defendants. Tranche 1 concerned the scope and content of the parties’ contractual obligations in relation to the joint venture. We held the following:

(a) BR was not obliged to fund the Project between November 2011 and March 2012 because: (i) cl 4 of the Funding MOU did not override cll 7.1 and 8 of the JV Deed (see *First Judgment* at [104]–[125]); and (ii) the good faith obligation in cl 17.3 of the JV Deed did not constrain BR to approve any and all expenditure that BCBCS had assessed (see *First Judgment* at [126]–[131]).

(b) BCBCS had not undertaken to fund the joint venture until the Tabang Plant achieved commercial production (see *First Judgment* at [137]–[146]).

(c) BR was not obliged to consent to KSC obtaining a further advance of US\$3.033m from Standard Chartered Bank to repay the temporary loan it had received from BCBCS (see *First Judgment* at [147]–[153]).

(d) BCBCS was not under an implied obligation to use the reasonable skill and care expected of a competent designer, builder and operator of coal preparation and briquetting plants in providing technical assistance to KSC (see *First Judgment* at [239]–[271]).

(e) There was no implied term in the JV Deed or the Funding MOU that BCBCS was contractually obliged to procure that KSC produce 1 million metric tonnes per annum (“MTPA”) of upgraded coal briquettes within a reasonable period of time (see *First Judgment* at [283]–[287]). In the light of our finding that BR was not obliged to fund KSC between November 2011 and March 2012 (see [9(a)] above), the issue of whether the JV Deed or the Funding MOU contained any such implied term was, strictly speaking, moot (see *First Judgment* at [273]).

10 However, we were not able to determine whether, based on the JV Deed, the PLFA, or the April 2011 Side Letter, BR was under an obligation to supply or assist in procuring the supply of coal to KSC in around the period between early November 2011 and 2 March 2012. This was because the evidence adduced in Tranche 1 was insufficient to enable us to answer the question of what coal KSC had required during that period of time (see *First Judgment* at [155]–[171]). This issue was accordingly left for determination in Tranche 2. There was no appeal against our decision in Tranche 1.

11 In Tranche 2, we determined issues relating to BR’s coal supply obligations and the alleged breaches of the parties’ contractual obligations under the joint venture. In respect of BR’s coal supply obligations, we held the following:

(a) BR had: (i) a *prima facie* obligation under Art. 7.1 of the PLFA, which expired on 31 December 2011, to ensure that Bara and FSP supplied coal to KSC in accordance with cl 3.9 of the 2010 CSAs; and (ii) a *prima facie* obligation under cl 3.8(b)(iii), until the termination of the JV Deed, to ensure the same (see *Second Judgment* at [68]–[77]). We refer to these two obligations collectively as the “Coal Supply Obligations”.

(b) BR’s Coal Supply Obligations remained in place even if there was no funding for KSC (see *Second Judgment* at [107]–[117]).

(c) BR’s Coal Supply Obligations did not cease merely because there was a lack of funding for KSC or because the Tabang Plant was at a particular stage of commissioning, was non-operational or had been placed into care and maintenance (see *Second Judgment* at [118]–[127]).

12 Each side accused the other of repudiatory breaches. In essence, we found that BCBCS had *not* acted in breach of the JV Deed (see *Second Judgment* at [148]–[177]). On the other hand, we held that BR had breached its Coal Supply Obligations by: (a) instructing FSP and Bara to cease their supply of coal to KSC on or around 9 November 2011; (b) conveying to KSC that it would not perform its Coal Supply Obligations when the time for actual performance of these obligations came; and (c) conditioning the performance of its Coal Supply Obligations on BCBCS’s buyout of its stake in KSC for US\$45m (see *Second Judgment* at [136]–[144]). We further held that cl 3.8(b)(iii) of the JV Deed was a condition of that deed and that BR’s breaches of its Coal Supply Obligations were therefore repudiatory breaches of the JV Deed (see *Second Judgment* at [181]–[182]). Nonetheless, as it was undisputed that BCBCS had not purported to accept BR’s breaches of its Coal

Supply Obligations, we found that those breaches did *not* bring the joint venture to an end (see *Second Judgment* at [183] and [195]).

13 We also found that BR repudiated the JV Deed by wrongfully issuing the Termination Notice on 21 February 2012. Although the Termination Notice purported to terminate the JV Deed on account of BCBCS's repudiation of the JV Deed, BR had no grounds to issue the Termination Notice as BCBCS did not repudiate the JV Deed (see *Second Judgment* at [193]; see also [12] above). Following its receipt of the Termination Notice, BCBCS validly accepted, by way of a letter dated 2 March 2012, BR's repudiation of the JV Deed. Accordingly, we concluded that the joint venture came to an end on 2 March 2012 (see *Second Judgment* at [194]–[195]).

14 As we observed in our decision in Tranche 2, the parties had agreed to leave the questions of damage that follow from a finding of breach, including issues of quantum, to Tranche 3 (see *Second Judgment* at [202]). Nonetheless the Defendants sought, and we granted them leave, to put forth arguments in Tranche 2 to the effect that, even if BR had breached the JV Deed, BCBCS would only be entitled to nominal damages for a limited period (see *Second Judgment* at [203]).

15 One such argument raised by the Defendants was that BCBCS would only be entitled to nominal damages until the expiry of the PLFA on 31 December 2011 (see *Second Judgment* at [213]). We rejected that argument for two key reasons. First, BR's Coal Supply Obligations under cl 3.8(b)(iii) of the JV Deed would have subsisted even after 31 December 2011 (see *Second Judgment* at [214]). Second, it did not follow that all prospect of earnings under the joint venture came to an end upon the expiry of the PLFA. Had the joint venture continued, the Tabang Plant might have resumed operations and

possibly achieved commercial production (see *Second Judgment* at [215]). As for the Defendants' submission that the Tabang Plant would have been starved of funding from 31 December 2011 onwards, we considered it likely that BCBCS would have been prepared to fund KSC unilaterally (see *Second Judgment* at [217]–[223]). But we left to Tranche 3 the questions of: (a) whether BCBCS was *in fact* in a financial position to fund KSC unilaterally to the completion of testing and commission or until June 2012; and (b) whether BR would have objected to such unilateral funding by BCBCS and, if so, the effect of such an objection (see *Second Judgment* at [223]).

16 The Defendants appealed against our decision in Tranche 2. The Court of Appeal dismissed the appeal but held that we ought to have determined, in Tranche 2, the issue of BCBCS's ability to unilaterally fund KSC (see *PT Bayan Resources TBK and another v BCBC Singapore Pte Ltd and another* [2019] 1 SLR 30 at [175]). That issue was then remitted for our determination. Based on the evidence adduced in Tranche 2, we held that BCBCS was clearly in a position to fund KSC unilaterally until the completion of commissioning and testing or until June 2012 (see *BCBC Singapore Pte Ltd and another v PT Bayan Resources TBK and another* [2019] 3 SLR 1 (“*Remittal Judgment*”) at [13]–[19]). The Defendants' appeal against that decision was dismissed by the Court of Appeal with no written grounds issued.

17 As referenced at [12] above, we concluded in Tranche 2 that BR had breached its Coal Supply Obligations and had wrongfully issued the Termination Notice, and that these acts constituted repudiatory breaches of the JV Deed. Tranche 3 concerns BCBCS's entitlement to damages (and, if so, the quantum of such damages) as a result of BR's repudiatory breaches.

18 BCBCS claims damages under two heads. First, it seeks to recover wasted expenditure of US\$91,591,206.68, which comprises the following sums:

(a) BCBCS claims a sum of US\$25m that it extended to KSC pursuant to the first of the shareholder loan agreements (“the First SLA”). BCBCS, BI and KSC entered into the First SLA on 16 April 2007, pursuant to which BCBCS and BI each granted KSC a loan of US\$25m to finance KSC’s capital expenditure and working capital requirements (see *First Judgment* at [24]).

(b) BCBCS claims a sum of US\$26,591,206.88 that it extended to KSC pursuant to the second of the shareholder loan agreements (“the Second SLA”). BCBCS, BR and KSC entered into the Second SLA on 25 November 2008, pursuant to which BCBCS and BR each agreed to loan up to US\$15m to finance KSC’s working capital and other corporate activities. The loan amounts were subsequently increased to US\$25m by way of addenda dated 11 December 2008 (see *First Judgment* at [42]). We refer to the First SLA and the Second SLA collectively as “the SLAs”.

(c) BCBCS claims a sum of US\$40m that it extended to KSC under the Priority Facility pursuant to the PLFA (see *First Judgment* at [58] and [134]; see also [8(c)] above).

According to BCBCS, it would have recouped its wasted expenditure from KSC’s cash flow as well as from the PRM provided for in the April 2011 Side Letter.

19 We note that the parties had agreed on the order in which KSC was to repay the aforementioned loans, and that this agreement was recorded in KSC’s

letter dated 3 December 2010 to BCBCS and BR (“the Subordination Letter”). The Subordination Letter states that KSC was to repay the loans under the PLFA, the First SLA and the Second SLA in that order, and that repayment under each of the SLAs was contingent upon full repayment of the loan(s) that assumed priority.

20 Second, BCBCS claims damages for the loss of a chance to increase the production capacity of the Tabang Plant to at least 3 MTPA and to profit therefrom. BCBCS argues that once the Tabang Plant achieved nameplate capacity of 1 MTPA, the parties would have agreed to expand its capacity to 3 MTPA.

21 As regards the prospect of the Tabang Plant achieving nameplate capacity, it bears highlighting that the Tabang Plant was shut down at the end of October 2011 and underwent extensive modifications in November 2011. These included modifications to the drying column, the dust extraction systems and the coal injection pipes (see *Second Judgment* at [81]). In Tranche 2, we found that substantial progress had been made on these modifications, which were on course for completion in November or December 2011 (see *Second Judgment* at [83]). We also determined that the commissioning of the Tabang Plant would have entailed modification works after construction, and that the Tabang Plant remained in the commissioning phase up until 15 December 2011. Although the modification works remained incomplete as of 15 December 2011, we found that the Tabang Plant was put into care and maintenance on that day, following the parties’ agreement on the same at the 6 December 2011 EGM (see *Second Judgment* at [80], [83] and [176]).

The parties' cases

BCBCS's case

22 In relation to its claim for damages for wasted expenditure, BCBCS's case is that, but for BR's breaches, the Tabang Plant would have achieved nameplate capacity by the end of January 2012 or, at the latest, by the end of June 2012. Consequently, the Tabang Plant would have generated sufficient cash flow from which BCBCS's wasted expenditure could be recovered, whether by way of the repayment of the loans previously extended by BCBCS to KSC or pursuant to the PRM provided for in the April 2011 Side Letter. BCBCS advances two main arguments in support of its claim for damages for wasted expenditure.

23 First, BCBCS contends that KSC had sufficient funding for the Tabang Plant to keep operating and to achieve nameplate capacity, because it (BCBCS) was willing and able to fund KSC up to the end of June 2012. Second, BCBCS submits that it was technically feasible for the Tabang Plant to achieve nameplate capacity. It argues that: (a) the technology underlying the BCB Process would work on a commercial scale and the only issue was that of scaling up the Tabang Plant; and (b) any issues that the Tabang Plant faced in scaling up had either been resolved prior to October 2011 or would have been resolved by the modification works carried out in November 2011. BCBCS thus submits that the Tabang Plant would have ramped up to nameplate capacity upon restarting its operations.

24 BCBCS additionally claims that there was a real and substantial chance, which it lost as a result of BR's repudiatory breaches, that the parties would have expanded the production capacity of the Tabang Plant to 3 MTPA once the plant reached nameplate capacity of 1 MTPA. In claiming damages for the loss

of a chance to realise the net profits of the Tabang Plant's operation at an expanded capacity, BCBCS makes three primary arguments. First, relying on cl 3.2 of the JV Deed and the parties' conduct, BCBCS contends that the parties had always intended to expand the production capacity of the Tabang Plant to 3 MTPA in the event that the first plant reached nameplate capacity. Second, KSC would have secured funding for the construction of the second and third plants (for the expansion of the Tabang Plant's capacity to 3 MTPA), whether by way of third party financing or unilateral gift funding from BCBCS. Third, the infrastructure at Tabang would have been adequate to support a production capacity of 3 MTPA.

25 BCBCS submits two further arguments. First, it submits that its claims for damages are not barred by the rule against reflective loss as KSC does not have any cause of action in respect of either head of damages claimed. Second, BCBCS contends that it can properly claim damages for both wasted expenditure and the loss of a chance to make future profits from the Tabang Plant. These two heads of damages are said to represent separate losses so that no issue of double recovery arises. The claim for wasted expenditure is in respect of the first plant, whereas the claim for loss of a chance concerns the second and third plants.

BR's case

26 BR contends that BCBCS would not have recovered its wasted expenditure, notwithstanding the former's repudiatory breaches of the JV Deed. First, BR submits that it was not reasonably contemplated by the parties, at the time the various loans were extended to KSC, that those loans could be recouped through the cash flow from the PRM, and for this and other reasons, the court cannot consider any cashflow to BCBCS other than that from KSC. Second, BR

argues that KSC would have defaulted on its repayment obligations under the SLAs and the PLFA. Accordingly, BR would have applied to wind up KSC, as it was entitled to do, and there would have been no cash flow from which BCBCS could recover its wasted expenditure. Third, according to BR, the cash flow model put forth by its quantum expert, Mr Greig Taylor (“Mr Taylor”), shows that KSC would have remained insolvent for several years and would have had a negative net present value (“NPV”), and so BCBCS plainly could not have recouped any expenditure. This, too, disposes of BCBCS’s claim for recovery of its wasted expenditure.

27 Additionally, BR disputes that BCBCS’s wasted expenditure is recoverable as a matter of law. BR submits that BCBCS incurred its wasted expenditure by extending loans to KSC, and that loans are distinguishable from “expenses” and “losses” that generally fall within the realm of claims for wasted expenditure.

28 In relation to BCBCS’s claim for damages for loss of a chance, BR makes two primary challenges. First, BR highlights the absence of any agreement among the parties to proceed with the second and third plants to expand the capacity of the Tabang Plant to 3 MTPA. This, BR submits, is clear from documents such as the Expansion MOU. BR also stresses that cl 3.2 of the JV Deed expresses no more than the parties’ intention to expand the capacity of the Tabang Plant *if* the Project succeeded. Second, the evidence shows that the Project was far from succeeding. BR therefore denies any possibility that it would have agreed to the expansion of the Project.

29 Finally, BR canvasses several broad reasons why BCBCS’s claims must fail. First, BR argues that BCBCS has not shown that its alleged losses were *caused* by BR’s breaches. Second, BR argues that BCBCS’s alleged losses are

too remote. In respect of BCBCS's wasted expenditure, BR emphasises that when the parties entered into the JV Deed on 7 June 2006, it was never contemplated that BCBCS would provide KSC with loans of nearly US\$91.6m. BR contends that BCBCS's alleged loss of a chance is likewise too remote. This is because the parties were not obliged under the JV Deed to expand the capacity of the Tabang Plant and had agreed to defer the issue of possible expansion to a later date, when they would be better placed to assess the progress of the Project. Third, BR submits that BCBCS's claims are barred by the rule against reflective loss as articulated in *Townsing Henry George v Jenton Overseas Investment Pte Ltd (in liquidation)* [2007] 2 SLR(R) 597 ("*Townsing Henry*"). Fourth, BR challenges the permissibility of BCBCS claiming damages for wasted expenditure *and* loss of a chance, when those alleged losses stem from the same breaches.

The issues before the court

30 The following issues arise for our determination:

- (a) Are BCBCS's claims barred as a matter of law? This, in turn, raises the following sub-issues, all of which would bar or limit recovery on BCBCS's part:
 - (i) whether the losses claimed by BCBCS are too remote;
 - (ii) whether loans can be recouped as a form of wasted expenditure;
 - (iii) whether the losses claimed by BCBCS are barred by the rule against reflective loss;
 - (iv) whether BCBCS is entitled to claim damages for both wasted expenditure and loss of a chance;

- (v) whether BCBCS is entitled to recover its wasted expenditure through the cash flow from the PRM; and
 - (vi) whether BCBCS is entitled to recover sums that it unilaterally loaned to KSC under the PLFA.
- (b) Would BCBCS have recovered its wasted expenditure? This, in turn, raises the following factual sub-issues:
- (i) whether the Tabang Plant would have achieved nameplate capacity by June 2012;
 - (ii) whether BR would have been entitled to wind up KSC; and
 - (iii) whether BCBCS's likely cash flow from the Project would have covered its wasted expenditure.
- (c) Has BCBCS established its claim for the loss of a chance to profit from the future expansion of the Tabang Plant's capacity to 3 MTPA? This, in turn, raises the following sub-issues:
- (i) whether BR was obliged to proceed with the second and third plants for the expansion of the Tabang Plant's capacity to 3 MTPA;
 - (ii) if so, whether the loss of chance doctrine is applicable in this case; and
 - (iii) if so, whether BCBCS can prove, on a balance of probabilities, that there was a real and substantial chance of expanding the Tabang Plant's capacity to 3 MTPA, which had been lost as a result of BR's breaches.

Issue 1: Preliminary legal issues***Whether the losses claimed by BCBCS are too remote***

31 We begin by considering the preliminary legal issues, the first of which concerns the remoteness of the losses claimed by BCBCS. The two-pronged rule regarding remoteness of losses was set out in *Hadley v Baxendale* (1854) 9 Exch 341 (“*Hadley v Baxendale*”). The first limb of the rule limits damages to those which arise naturally in the usual course of things or flow from what may reasonably be supposed to be in the contemplation of both parties *when they entered into the contract*. The second limb of the rule, on the other hand, concerns actual knowledge of special or extraordinary facts and circumstances.

32 In *Out of the Box Pte Ltd v Wanin Industries Pte Ltd* [2013] 2 SLR 363 (“*OOTB*”), the Court of Appeal set out the rule in *Hadley v Baxendale* in the following terms (at [15]):

... The first limb prescribes limits for what are called general damages and the second limb for what are called special damages. The use of the descriptors ‘general’ and ‘special’ in this context is not particularly helpful since it is likely to be confused with an altogether different sense in which those terms may be used in conjunction with damages: see the observations of the learned authors in *The Law of Contract in Singapore* (Andrew Phang Boon Leong gen ed) (Academy Publishing, 2012) at paras 22.050-22.052. But here, they are meant to connote the nature of the knowledge of the circumstances that was possessed by the parties, and more specifically, by the contract breaker when he entered into the contract. *General damages are those which may be seen as flowing naturally from the breach, once regard is had to the sort of knowledge of the relevant surrounding circumstances that the contract breaker would generally be taken to have had*. On the other hand, *special damages are damages the liability for which is founded on the fact that the contract breaker had some special or additional knowledge of particular facts and circumstances, and which knowledge has the effect of extending the horizon of recoverable damages beyond the range that would otherwise have applied*.

[emphasis added]

33 The Court of Appeal then laid out the following framework for assessing remoteness of damage (at [47]):

- (a) What are the specific damages that have been claimed?
- (b) What are the facts that would have had a bearing on whether these damages would have been within the reasonable contemplation of the parties had they considered this at the time of the contract?
- (c) What are the facts that have been pleaded and proved either to have in fact been known or to be taken to have been known by the defendant at the time of the contract?
- (d) What are the circumstances in which those facts were brought home to the defendant?
- (e) In the light of the defendant’s knowledge and the circumstances in which that knowledge arose, would the damages in question have been considered by a reasonable person in the situation of the defendant at the time of the contract to be foreseeable as a not unlikely consequence that he should be liable for?

34 We note that BCBCS has, at points, framed the nature of its losses in relation to its claim for recovery of its wasted expenditure unduly broadly. In its reply submissions, for example, BCBCS asserts that “[i]t is plainly foreseeable that if one party reneges on its JV obligations, the expenditure incurred by the other will be wasted”. This assertion ignores the following observations made by the Court of Appeal in *OOTB* (at [44]):

... Different heads of loss may seem to be of the same type or nature and yet emerge on a proper analysis as being of quite different types. It would be simplistic and ultimately unhelpful to argue that a given head of loss is not too remote simply because it could semantically be packed within a broader category of loss that was foreseeable by the contract breaker.

35 In *OOTB*, the respondent signed a bare-bones contract to supply the appellant with modest quantities of a generic sports drink, as the latter had plans to manufacture a new sports drink. Unbeknownst to the respondent, the appellant planned to realise its considerable ambitions for the new drink through unusually aggressive advertising and promotion; although virtually nothing was spent on the design or manufacture of the drink itself, the appellant incurred an outlay of nearly \$780,000 on advertising. A shipment of the drink was subsequently found to be contaminated, and the appellant was forced to abandon its marketing campaign and discontinue the planned venture altogether. On appeal, it was held that the appellant's losses in the form of wasted advertising costs were too remote. The Court of Appeal noted that the respondent had no knowledge of the scale of the appellant's ambitions for the new drink nor the appellant's unique business strategy of realising those ambitions primarily through advertising (at [52]). The Court of Appeal also stressed that while the appellant's losses could be characterised as wasted advertising expenses, "it would be wrong to ignore the special facts that pertain to the type and scale of the advertising costs that were incurred here" (at [44]). In the same vein, it is overly broad for BCBCS to frame the loans of US\$91.6m that it extended to KSC as simply wasted expenditure which it incurred as a result of BR's breaches.

36 Nonetheless, we are of the view that BCBCS's claims are not too remote. BCBCS is claiming for damages for: (a) wasted expenditure in the form of wasted loans that were extended to KSC under the SLAs and the PLFA; and

(b) loss of a chance to profit from the Tabang Plant’s expanded capacity of 3 MTPA. Applying the framework set out in *OOTB* (see [33] above), the facts relevant to the first head of damages for wasted expenditure are that: (a) the Project was an unprecedented attempt to implement the BCB Process on a commercial scale; (b) the process of scaling up the technology underlying the BCB Process involved high risks; and (c) there was a possibility that the costs of the Project might exceed initial estimates. For the following reasons, we find that BR was fully aware that the Project was the first of its kind and of the risks inherent in such an unprecedented venture:

(a) Clauses 8.2 and 8.3 of the JV Deed provided for financing by way of shareholder loans if third party borrowing proved inadequate or untenable. In other words, it was contemplated by the parties that shareholders might have to provide funding via shareholder loans.

(b) On 25 August 2006, Sinclair Knight Merz produced a report titled “Technical Feasibility Study on the Tabang Mine Coal Upgrade Project” (“the SKM Technical Feasibility Study”). This study, which BR had sight of, estimated capital costs to be US\$36.97m as at 30 June 2006, it urged that “sensitivity of the project feasibility be conducted regarding capital costs, noting the current accuracy of the estimate ($\pm 25\%$)”.

(c) On 6 September 2006, Hyde Park Consultants (“HPC”) produced a report titled “Report on the Financial Viability of the Tabang Binderless Coal Briquette Project” (“the HPC Economic Feasibility Report”), which was sent to BR. Having conducted a preliminary risk assessment of the Project, HPC stated in the HPC Economic Feasibility Report that the BCB Process had “not yet been demonstrated in a

commercially sized plant”. It also expressly noted the risk that “the costs of such projects could be higher than expected” and the risks “associated with the construction of a project in remote locations and the use of different contractors and suppliers”.

(d) In October 2005, after receiving a letter from WEC about the proposed terms of the joint venture, Mr Neil (who is BR’s chief development officer) prepared a financial model and calculated that the Project would incur around US\$37.8m per year in costs, but he acknowledged that “capital expenditure and operating expenditure for any venture would always be higher than what was originally estimated, and ... in this case that was especially likely given that Tabang was a very remote location”.

(e) Mr Neil and Mr Lim (the chief operating officer of BR) sent BCBC a letter on 7 November 2005 in which they acknowledged the risk that the parties might not be able to successfully construct and commission a plant that could use the BCB Process on a commercial scale, as well as the other risks inherent in the fact that this was the first time that anyone was attempting to implement the BCB Process on a commercial scale. In his affidavit of evidence-in-chief in Tranche 1, Mr Neil explained that these risks “in effect ma[de] [the Project] an experiment”.

37 Although the loans extended by BCBCS to KSC far exceeded the initial capital cost estimates of up to US\$39.6m, BR was well-apprised of the technical uncertainties and the financial risks of the Project. A reasonable person in BR’s position at the time the JV Deed was signed would have considered the risk of a considerable escalation in costs and, consequently, BCBCS’s financial

injections, to be foreseeable as a likely consequence that it ought to be liable for. The facts of the present case are hence very different from those of *OOTB* ([32] above), where the plaintiff incurred losses that were not within the defendant's reasonable contemplation and the relevant facts had not been brought to the defendant's knowledge at the time the contract was entered into.

38 As for BCBCS's claim for loss of a chance, cl 3.2 of the JV Deed initially stipulated the parties' intention to increase the production capacity of the Tabang Plant from 1 MTPA to 3 MTPA if the Project succeeded. The figure of 3 MTPA was subsequently amended to 5 MTPA on 14 September 2006. Clearly, the parties had contemplated the prospect of profiting from the expanded capacity of the Tabang Plant. That there was no agreement or obligation to expand the Tabang Plant's capacity, as BR contends, is irrelevant in so far as remoteness of loss is concerned. We therefore hold, in principle, that BCBCS's loss of a chance to profit from the Tabang Plant's expanded capacity, much like its wasted expenditure, is not too remote a loss. Whether they succeed on the facts is another matter that we shall examine below.

Whether loans can be recouped as a form of wasted expenditure

39 We now examine the second preliminary legal issue, namely, whether loans can be recouped as a form of wasted expenditure. BR submits that this question should be answered in the negative for the following reasons:

- (a) A lender's recourse is against its *debtor*. BCBCS knew that in extending loans to KSC, any recourse would be against KSC *qua* debtor.
- (b) A loan is an asset rather than an "expense" or "loss". In exchange for parting with its moneys and assuming a credit risk as well as a risk

of the borrower defaulting on repayment, a lender obtains the benefit of the borrower's payment of interest on the loan.

(c) A loan is also distinct from an "expense" or "loss" because a lender may elect to take security its borrower.

40 According to BR, loans should be distinguished from expenses and BCBCS should not be allowed to recover its loans to KSC as wasted "expenditure". BR adds that there does not appear to be any case of a shareholder successfully recovering a loan to a joint venture company as a form of wasted expenditure. In response, BCBCS contends that loans are recoverable as wasted expenditure, and cites *Freeman v Londish* [2018] NSWSC 1425 ("*Freeman*") and *Assetco Plc v Grant Thornton UK LLP* [2019] EWHC 150 (Comm) ("*Assetco*") as examples that illustrate this legal proposition.

41 We accept BCBCS's submissions. BR does not cite any authority for the legal proposition that loans to a joint venture company do not constitute recoverable expenditure. This wide and potentially far-ranging proposition is contradicted by *Freeman* and *Assetco*, where loans were in fact recovered as wasted expenditure. In any event, BR has not pleaded that loans cannot be recouped as wasted expenditure. Although its Defence and Counterclaim (Amendment No 8) ("D&CC") states that BCBCS's wasted expenditure is "not recoverable at law as expenditure", the substance of its pleading is instead that BCBCS is not entitled, on the facts rather than as a matter of law, to recover the wasted expenditure incurred.

Whether the losses claimed by BCBCS are barred by the rule against reflective loss

42 The third preliminary legal issue concerns whether BCBCS’s claims are barred by the rule against reflective loss. A key sub-issue which arises is, assuming that the loss suffered by a shareholder is indeed reflective of the company’s loss: does the rule against reflective loss only bar claims for loss suffered by a shareholder *qua* shareholder, or does it extend to situations where a shareholder has suffered detriment in another capacity, *eg*, as a creditor?

43 BR cites *Townsing Henry* ([29] above), in which the Court of Appeal remarked that the reflective loss principle “extends beyond a shareholder’s claim that his shares have been devalued, and includes ‘all other payments which the shareholder might have obtained from the company if it had not been deprived of its funds’ ... *In particular, the detriment suffered by a shareholder qua creditor of the company is also caught by this bar against recovery*” [emphasis in original] (at [70]). Accordingly, detriment suffered by a shareholder *qua* creditor of the company is caught by the reflective loss principle if the company’s assets can be replenished through an action against the wrongdoer. BR also argues that the UK Supreme Court decision in *Sevilleja v Marex Financial Ltd* [2021] AC 39 (“*Marex*”), which limits the scope of the rule to loss suffered by shareholders *qua* shareholders, does not represent the law in Singapore. Here, KSC has not been dissolved and is still able to commence proceedings against Bara/FSP since its curator is not bound by the JV Deed (which was in any event terminated on 2 March 2012). Even if KSC has been dissolved, the rule against reflective loss still applies if KSC could have sued BR at some point.

44 BCBCS takes the position that the Court of Appeal’s pronouncements in *Townsing Henry* on the scope of the rule against reflective loss were *dicta* and that this court is free to adopt the UK Supreme Court’s decision in *Marex*, particularly as the Court of Appeal’s *dicta* in *Townsing Henry* were based on the House of Lords decision in *Johnson v Gore Wood & Co* [2002] 2 AC 1, which has since been overturned. BCBCS says that *Marex* has limited the ambit of the rule against reflective loss to “claims by shareholders that, as a result of actionable loss suffered by their company, the value of their shares, or of the distributions they receive as shareholders, has been diminished”. This means that where a company’s loss results in a creditor who is also a shareholder suffering a loss, he can pursue a claim without being caught by the rule against reflective loss.

45 BCBCS also adds that, in any event, the loss claimed is not reflective of KSC’s loss. According to BCBCS, the reflective loss principle is limited to the specific situation where a shareholder’s loss would be made good “if the company’s assets were replenished through action against the party responsible for the loss” (see *Townsing Henry* at [69]), and where both the company and the shareholder have a cause of action against same wrongdoer. Here, KSC is only a party to the 2010 CSAs and is not a party to the JV Deed. The only claim which KSC may possibly make is in respect of the 2010 CSAs as against Bara/FSP, and it has no claim based on the JV Deed. It therefore has no cause of action in respect of either head of loss claimed by BCBCS, which arise out of BR’s breaches of the JV Deed. In any event, however, KSC cannot recover from Bara/FSP the costs of constructing and commissioning the Tabang Plant since those costs are not reasonably foreseeable consequences of their breaches of the 2010 CSAs. KSC also cannot claim under the PLFA for its purported losses as those losses are not directly and reasonably foreseeable consequences

of BR’s breach of the PLFA *per se*. In any case, KSC could not have pursued any such claims against Bara, FSP or BR since BR would not have consented to KSC mounting such claims (the commencement of any legal action is a reserve matter requiring unanimous consent of both joint venture parties under the JV Deed). Moreover, KSC is presently in a state of dissolution and hence no longer able to pursue any claim.

46 These arguments have since been overtaken by the recent decision of *Miao Weiguo v Tendcare Medical Group Holdings Pte Ltd (formerly known as Tian Jian Hua Xia Medical Group Holdings Pte Ltd) (in judicial management) and another* [2021] SGCA 116 (“*Miao Weiguo*”), where the Court of Appeal affirmed the existence of the reflective loss principle and held that it extends only to shareholders claiming *qua* shareholders, and so it only precludes claims by shareholders for the diminution in the value of their shareholdings or in distributions they receive as shareholders as a result of actionable loss suffered by the company (at [206]). That is because the reflective loss principle is a rule of company law that limits the scope of a shareholder’s remedies against a wrongdoer in respect of losses caused to the company on account of the unique status of shareholders (at [114]–[120]) and the fundamental nature of a share, which lies, not in its market value, but in the right of the shareholder to participate in the company (at [198]–[202]). In arriving at this position, the Court of Appeal followed the majority of the UK Supreme Court in *Marex* and departed from the position which it had earlier stated in *Townsing Henry* ([29] above) (at [175] and [193]).

47 Given the Court of Appeal’s decision in *Miao Weiguo*, which is binding on us, BCBCS’s claims are not precluded by the reflective loss principle. This is because BCBCS’s wasted expenditure claim is made in respect of reliance loss suffered by BCBCS in extending finance to KSC pursuant to the SLAs and

the PLFA, *ie*, the claim is made by BCBCS *qua* creditor of KSC, and so it falls squarely outside of the reflective loss principle. BCBCS's claim for loss of a chance is made in respect of expectation loss suffered by BCBCS as a result of BR's breaches of its contractual obligations under the joint venture and not for any diminution in value of its shareholding in KSC or distributions which it is entitled to receive as a shareholder of KSC, *ie*, the claim is not made by BCBCS *qua* shareholder of KSC. We need say no more about the submissions which parties have made about the scope of the reflective loss principle, given that such issues have since been laid to rest by the Court of Appeal in *Miao Weiguo*.

48 In *Miao Weiguo*, the Court of Appeal also added that the policy against double recovery does not constitute a specific justification for the reflective loss principle (at [185]–[190]), but is one of general application throughout the law in so far as remedies and damages are concerned (at [181]–[185]). As such, even if a claim is not precluded by the reflective loss principle, the court must still consider if there is a risk of double recovery, which may nevertheless bar the claim (see *Miao Weiguo* at [208]–[210]).

49 In this case, we are satisfied that there is no risk of double recovery by BCBCS if its claims are allowed. While KSC remains a legal entity following the termination of its bankruptcy in 2016, there is no realistic prospect of KSC commencing legal proceedings against Bara, FSP and BR. We accept evidence of Indonesian law put forth by BCBCS that KSC, which has entered a state of dissolution following the termination of its bankruptcy, can only carry out a limited set of corporate actions which do not include the commencement of complicated litigation. BR has not addressed this point in its submissions on Indonesian law. Indeed, more than eight years have elapsed, but no proceedings have yet been commenced by KSC against FSP, Bara or BR.

Whether BCBCS is entitled to claim damages for both wasted expenditure and loss of a chance

50 The fourth preliminary legal issue pertains to whether BCBCS is entitled to claim damages for both wasted expenditure and loss of a chance. BR argues that it is not open to BCBCS to do so given that both heads of damages arise from the same contractual breaches. BR adds that BCBCS cannot seek recovery on two mutually exclusive juridical bases: the claim for wasted expenditure is a claim for reliance loss whereas the claim for loss of a chance is a claim for expectation loss.

51 On the other hand, BCBCS submits that the general rule against recovery for both expectation loss and reliance loss in respect of the same contractual breach only operates when expectation loss is claimed on a gross, rather than net, basis. Its claim for loss of a chance is a claim for loss of *net* profits in respect of the *second and third* plants and is not duplicative of its claim for wasted expenditure in respect of the *first* plant.

52 The starting point is that the principle against double recovery will preclude a claimant from recovering *both* expectation loss and reliance loss (see Edwin Peel, *Treitel's Law of Contract* (Sweet & Maxwell, 14th Ed, 2015) at para 20-035). This rule is premised on the rationale that, a claim for expectation loss, if allowed, will necessarily also compensate the claimant for his reliance loss (see, eg, J K MacLeod, “Damages: Reliance or Expectancy Interest” [1970] JBL 19 at 20–21). That follows since any reliance loss must necessarily have been incurred in the first place before the contract can be made, performed and profits derived thereunder.

53 The decision of the English Court of Appeal in *Cullinane v British Rema Manufacturing Co Ltd* [1954] 1 QB 292 (“*Cullinane*”) illustrates this. The

defendants sold to the plaintiff a machine, warranting that it had certain functional capabilities. The plaintiff sought to claim damages for breach of this warranty under two heads: (a) the capital expenditure incurred in the installation of this machine (corresponding to heads (A) to (C) in his statement of claim) and (b) loss of profits. The majority held that the plaintiff could not recover both, as that would be tantamount to giving the plaintiff damages twice over (at 306 and 312). This is because a claim for loss of profits – arising from the performance of the contract according to its terms – can only be founded on the footing that the full contract price has been paid and all other capital expenditure has been incurred (at 302 and 308). In such a case, the claim for expectation loss will necessarily also compensate the claimant for his reliance loss.

54 In our view, BCBCS is not precluded from pursuing both claims. The general principle that a claimant has to elect between expectation loss and reliance loss only applies where expectation loss (in the form of loss of profits) is claimed on a gross, rather than net, basis (see *Smile Inc Dental Surgeons Pte Ltd v OP3 International Pte Ltd* [2020] 3 SLR 1234 at [52]–[57] and *The Law of Contract in Singapore* (Andrew Phang Boon Leong gen ed) (Academy Publishing, 2012) (“*The Law of Contract in Singapore*”) at para 21.038). The touchstone of this general principle is to prevent double recovery and to ensure that the claimant is not placed in a better position than he would have been in if not for the breach. Accordingly, if the claimant can prove that he would have derived such profits from the contract which would exceed his capital expenditure, he would be entitled to recover both the capital expenditure and the *net* profits which he would have made under the contract. In such a case, there will be no overlap between his claims for expectation and reliance loss (see *Chitty on Contracts* (HG Beale gen ed) (Sweet & Maxwell, 33rd Ed, 2018)

at para 26-032; Samuel Stoljar, “Normal, Elective and Preparatory Damages in Contract” (1975) 71 LQR 68 at 85).

55 In this case, BCBCS is claiming damages for: (a) wasted expenditure in respect of the first plant; and (b) the loss of *net* profits (on the basis of the loss of a chance) which would have been derived from the second and third plants if the Tabang Plant’s capacity were expanded to 3 MTPA (see [18] and [20] above). BCBCS’s loss of a chance claim is therefore pegged to the profits which it would have made *over and above* those that were required to compensate it for its reliance loss. As such, there is no risk of double recovery.

56 BR does not suggest that there will be double recovery on the facts; it simply insists that it is conceptually impermissible for a claimant to claim both expectation loss and reliance loss in respect of the same contractual breach. We need only point out that expectation and reliance losses are *not* in fact founded on different juridical bases, since both measures of damages are compensatory and based on the claimant’s loss (see *Turf Club Auto Emporium Pte Ltd and others v Yeo Boong Hua and others and another appeal* [2018] 2 SLR 655 at [127]–[128]). Accordingly, we consider that BCBCS is not precluded, in principle, from claiming damages for both wasted expenditure and loss of a chance.

Whether BCBCS is entitled to recover its wasted expenditure through the cash flow from the PRM

57 The fifth preliminary legal issue is whether the cash flow from the PRM should be considered in determining whether BCBCS would have recouped its wasted expenditure. If this question is answered in the negative, then there would have been little likelihood of BCBCS recovering its wasted expenditure.

58 BR's arguments on this score can be summarised as follows:

(a) The parties did not contemplate at the time the JV Deed was signed that shareholder loans would be recouped through the cash flow from the PRM. Such loans would instead have been recouped from the debtor, namely, KSC.

(b) BCBCS's own witnesses testified that the court should look at only KSC's cash flow and not the cash flow that might flow from BR to BCBCS (such as the cash flow under the PRM).

(c) Taking cash flow from the PRM into account would result in BCBCS being doubly enriched. Not only would the cash flow from the PRM flow from BR to BCBCS, KSC would also remain liable to BCBCS under the SLAs and the PLFA.

(d) The boards of WEC and BCBCS did not discuss treating the cash flow from the PRM as repayment of the loans extended to KSC or consider that doing so would be in WEC's or BCBCS's best interests. Moreover, they could not have properly given such an instruction as this was a matter for a future board to consider.

(e) The use of the PRM would violate cl 7.1(s) of the JV Deed, which provides that the unanimous consent of KSC's shareholders or directors is needed for KSC to approve any other matter that financially or contractually binds any or all of the shareholders.

59 BCBCS argues that BR has fundamentally mischaracterised the cash flow from the PRM as deemed repayment of the loans extended by BCBCS to KSC. Rather, had the Project proceeded, BCBCS would have enjoyed the cash

flow from the PRM in addition to having its loans repaid by KSC. In other words, cash flow from the PRM constituted an *additional source* from which BCBCS could have recouped its wasted expenditure. BCBCS responds to BR's specific arguments as follows:

- (a) There is no legal basis for the claim that the parties must have contemplated, at the time of contracting, the precise mechanism by which they would recoup wasted expenditure. It suffices that the parties reasonably contemplated that expenditure would be incurred and that a contractual breach would result in that expenditure being wasted.
- (b) BCBCS's case has never been that only KSC's cash flow should be considered, to the exclusion of any other cash flow that would flow from BR to BCBCS. In this regard, BCBCS argues that BR has mischaracterised its case.
- (c) BCBCS would not be doubly *enriched*. The cash flow from the PRM is separate and distinct from the repayment of the loans extended to KSC; BCBCS was always entitled to both.
- (d) There is no authority to support BR's proposition that a present board cannot bind a company's future conduct.
- (e) BR's reliance on cl 7.1(s) of the JV Deed is misguided. The repayment of the various loans extended to KSC is governed by the respective loan agreements (namely, the SLAs and the PLFA), not the JV Deed.

60 With respect, we find BR's arguments unpersuasive. First, BR refers to the decision of the High Court of Australia in *The Commonwealth of Australia*

v *Amann Aviation Pty Ltd* (1991) 104 ALR 1 (“*Amann*”) in support of its argument that the cashflows from the PRM should not be considered in the recoupment analysis (see above at [55(a)]). However, *Amann* does not support BR’s position that the parties must have contemplated the cash flow from the PRM at the time the JV Deed was entered into, in order for that cash flow to be taken into account when determining whether BCBCS would have recouped its wasted expenditure. In *Amann*, the defendant had wrongly repudiated its contract with the plaintiff for the provision of aerial surveillance for three years. One of the issues was whether the value of the prospect of renewing that contract should be taken into account in determining whether the plaintiff would have recouped its wasted expenditure.

61 Mason CJ and Dawson J held that it was within the contemplation of the parties that the performance of the contract by the plaintiff would place it in an advantageous position to secure renewal of the contract with its attendant benefits, and that the value of this occurring should be evaluated as part of the plaintiff’s wasted expenditure claim (see *Amann* at 18–19). BR refers to these passages in its submissions but omits certain aspects of its reasoning. Mason CJ and Dawson J made the aforementioned holding in relation to remoteness of damage under the rule in *Hadley v Baxendale* ([31] above) (see *Amann* at 18–19):

However, in the present case, the application of the rule in *Hadley v Baxendale* turns not on the degree of knowledge possessed by the defendant but on what may reasonably be supposed to have been in the contemplation of the parties as the probable result of the breach. If it be right to suppose that the loss of the prospect of securing a renewal of the contract was within the contemplation of the parties as a probable result of the breach, then, notwithstanding the principle established by [*Abrahams v Herbert Reiach Ltd* [1922] 1 KB 477] and [*Lavarack v Woods of Colchester Ltd* [1967] 1 QB 278], *Amann* is entitled to compensation which takes into account

the value of the loss of the prospect of securing a renewal of the contract.

...

[T]he value of the prospect of a renewal of the contract was a matter to be taken into account in determining whether Amann would or would not have recouped its expenditure. As in a case such as [*Richardson v Mellish* (1824) 2 Bing 229] where the value of the legal obligation to the plaintiff depends upon the occurrence of an event extraneous to the contract, the probability of the occurrence is relevant to the estimate: *Lavarack*, per Diplock LJ at 294. As we have said, there was a strong prospect of such an occurrence in this case.

Read in its proper context, *Amann* clearly does not stand for the proposition that the parties must have foreseen the precise mechanism by which wasted expenditure would be recouped. In any event, we are not satisfied that there is any sound rationale for such a proposition.

62 Second, BCBCS has never contended that the court should only take KSC's cash flow into account when determining whether BCBCS would have recouped its wasted expenditure, contrary to what BR asserts. As BCBCS points out, the statements made by its witnesses and relied on by BR were to the effect that loans incurred by KSC would have to be repaid from KSC's cash flow. However, BCBCS has never once asserted that *only* KSC's cash flow, and not the cash flow from the PRM, are relevant to its recovery of its wasted expenditure. It regarded the cash flow from KSC *as well as* that from the PRM as sources from which it could have recouped its wasted expenditure. This much is clear from answer 5 of BCBCS's Particulars of Statement of Claim (Amendment No 6), which reads:

... The amount would have been recouped from the loan repayment by the JV Company as well as the dividend distribution to the shareholders of the JV Company (as adjusted by the Payments Reconciliation mechanism ...

63 Third, BR appears to have conflated the issue of whether the loans extended by BCBCS to KSC would have been repaid with the issue of whether BCBCS would have recouped its wasted expenditure. As BCBCS notes, it could have recovered its wasted expenditure from either KSC’s cash flow or the cash flow from the PRM – BR’s claim that BCBCS would be “doubly enriched” is therefore a red herring. The relevant question is simply whether BCBCS would have made an overall profit or loss from the Project, and whether it would have therefore recovered its wasted expenditure. Accordingly, it is immaterial whether the boards of WEC or BCBCS considered whether the cash flow from the PRM ought to be treated as repayment of the loans extended to KSC.

64 Fourth, BR’s submission on cl 7.1(s) of the JV Deed is puzzling. Clause 7.1 of the JV Deed requires the unanimous consent of KSC’s shareholders or directors before *KSC* may carry out certain actions. However, BCBCS’s reliance on the cash flow from the PRM to recover its wasted expenditure requires no action on KSC’s part; cl 7.1(s) of the JV Deed is hence wholly inapplicable.

65 In any event, BR has not pleaded that BCBCS is not entitled to recover its wasted expenditure through the cash flow from the PRM. For these reasons, we hold that BCBCS is permitted to rely on the cash flow from the PRM in its claim for recovery of its wasted expenditure.

Whether BCBCS is entitled to recover sums that it unilaterally loaned to KSC under the PLFA

66 The final preliminary legal issue concerns the sum of US\$40m that BCBCS loaned to KSC under the PLFA (see [18(c)] above). Of this sum, BR says that BCBCS cannot recover any amount beyond US\$6m because that was the amount that the parties had originally agreed that BCBCS would lend KSC

under the PLFA. According to BR, BCBCS unilaterally increased the Priority Facility to US\$40m after the amount drawn down had exceeded US\$20m. The fact that BR later ratified these sums is said by BR to be irrelevant since the issue is whether, at the time BCBCS unilaterally lent the further sums to KSC, it did so in reliance on any promise by BR. On the other hand, BCBCS submits that there is no reason to cap its recoverable wasted expenditure under the PLFA at US\$6m, particularly as the parties had agreed to increase the Priority Facility to US\$40m by way of the Addendum (see [8(c)] above).

67 We agree with BCBCS on this preliminary issue. The Priority Facility was increased to US\$40m pursuant to the Addendum, to which BCBCS, BR and KSC were party. Hence, the very premise of BR's argument – namely, that BCBCS *unilaterally* increased the Priority Facility to US\$40m – is simply incorrect. In fact, BR implicitly conceded in Tranche 2 that the Priority Facility had been increased to US\$40m by the parties' mutual consent; it argued then that BCBCS had wrongfully caused KSC to incur a debt *in excess of the Priority Facility of US\$40m* (see *Second Judgment* at [55(a)(ii)]). We therefore see no reason to disregard the Addendum in favour of the parties' *initial* agreement for BCBCS to lend only US\$6m to KSC, when that agreement was subsequently revised.

68 In any event, BR has plainly failed to plead that BCBCS is only entitled to recover US\$6m under the PLFA. For these reasons, the recoverable wasted expenses that BCBCS incurred under the PLFA should not be capped at US\$6m.

Conclusion on issue 1

69 To conclude issue 1, we find that the preliminary legal issues that we have discussed at [31]–[68] above do not, in principle, bar BCBCS's claims.

We now examine the facts under each head of damages claimed by BCBCS in turn.

Issue 2: Whether BCBCS would have recovered its wasted expenditure

Whether the Tabang Plant would have achieved nameplate capacity by June 2012

70 BCBCS submits that the Tabang Plant would have achieved nameplate, or near nameplate, capacity (*ie*, 1 MTPA) by June 2012 at the latest. On the other hand, BR submits that there was no prospect of the Tabang Plant achieving 1MTPA by January 2012 or June 2012, or at all.

71 There are essentially three aspects which we have to consider:

- (a) whether the technology underlying the BCB Process (which underlies the Tabang Plant) could have worked;
- (b) if so, whether the Tabang Plant could have been designed and constructed to allow the BCB Process to be scaled up; and
- (c) if so, whether the briquettes produced by the BCB Process would have been sufficiently durable and stable to be saleable.

The technology underlying the BCB Process

72 BR says that there is no evidence of any plant built anywhere in the world which has successfully implemented and commercialised the BCB Process, much less a plant with a nameplate capacity of 1 MTPA. If there had been, BR submits, there would be many people interested in obtaining the licensing rights or using licensees to construct plants. Whilst Mr Flannery (the managing director and CEO of WEC) and Mr Maras (the CFO of WEC) say

that the Tabang Plant would have become a proven “blueprint”, BCBCS has not built any 1 MTPA plant anywhere in the world with this “blueprint”. That, BR submits, raises serious question marks over the technology underlying the BCB Process.

73 BCBCS, on the other hand, points to the fact that successful tests of the BCB Process were conducted at the CSIRO and Collie plants using Tabang coal, prior to the execution of the JV Deed (see *First Judgment* at [3] and [9]–[14]), and that these tests established that Tabang coal briquetted well through the BCB Process and showed that the technology underlying the BCB Process worked. BCBCS says that, on the basis of various feasibility assessment reports and studies, BR concluded that the results looked good and proceeded with the joint venture.

74 We conclude on the basis of the evidence of the pilot studies and, as set out below, the status of the Tabang Plant in November 2011, that the technology underlying the BCB Process would have worked and that, as BCBCS’s technical expert Professor Batterham (“Prof Batterham”) said, the question for the Tabang Plant was simply one of scaling up.

Issues with the Tabang Plant

75 On whether the Tabang Plant could be designed and constructed to allow the BCB Process to be scaled up, there was much evidence of past experiences of new processes and the timescale and feasibility of achieving nameplate capacity for those processes. However, we did not find such general evidence of assistance in assessing whether the Tabang Plant could have achieved nameplate capacity. Nor did we think that views expressed at various times by the people involved were of much assistance. Those views were expressed in

particular contexts, such as licensing discussions and assumptions for board meetings. They would obviously have taken into account what that particular person knew or assumed at the time, which is likely to be different from the comprehensive factual and expert technical evidence now before us. We therefore think that a detailed technical consideration of the state of the various components of the BCB Process is a much better approach to answering this central question.

76 As at November 2011, the Tabang Plant was shut and it was about to have modifications carried out to deal with several matters that had arisen (see [21] above). The question is whether the Tabang Plant, with those modifications implemented in November and December 2011, would have enabled a ramp up to nameplate capacity by the end January of 2012, or at the latest, by June 2012.

77 We accordingly turn to consider the components of the Tabang Plant which are still in dispute. We note that, as BCBCS observes, BR has not raised any issues with the Tabang Plant's cooling column, cage mill crusher, dried coal bin system and Redler distribution conveyors. We therefore deal with those aspects only briefly.

78 To put the component parts of the Tabang Plant into context, the main components in the BCB Process at the Tabang Plant are as follows:

- (a) **Crushing:** The raw coal from the mine is initially crushed in a primary feeder breaker crusher followed by a secondary cage mill crusher, reducing the input coal of 50mm size to coal particles with a maximum size of 3mm, which is then transferred to the crushed coal bin.

(b) Pneumatic coal injection system: The crushed coal is transferred from the crushed coal bin to the drying column by a pneumatic transport system using recycled gas from the drying column.

(c) Drying column: The drying column is 30m high and the crushed raw coal is pneumatically conveyed into the drying column. It is then fluidised by hot gas from the furnace through the drying column into the cyclones. The drying column is equipped with an artificial evaporative load (“AEL”) system, which uses compressed air and fine spray nozzles to vaporise the water droplets to regulate the hot gas temperature during start up, shutdown and upset operating conditions.

(d) Cyclones and main bag filter: There are four cyclones in parallel to remove the dried coal from the hot gas in the drying column. The dried coal is discharged from the cyclones into the dried coal bin. The hot gas is then separated, with the majority of the hot gas going to the main bag filter and the remainder returning as recycled gas to the recycle fan, to the furnace and to transport the raw crushed coal in the pneumatic coal injection system. The dust laden effluent hot gas from the cyclones goes to the main bag filter for dust removal.

(e) Dried coal bin and distribution conveyors: The dried coal is discharged from the dried coal bin to the four Redler distribution conveyors; one Redler distribution conveyor feeds four briquetting machines.

(f) Briquetting machines: The four Redler distribution conveyors feed 16 Komarek B400 briquetting machines equipped with Rossi gear boxes; each briquetting machine is designed to produce 10 tonnes per hour (“TPH”) operated at 100% speed.

(g) Dust extraction system: Each briquetting machine has a dust pick up point. There are two bag filters for the briquetting machines, each collecting dust from eight briquetting machines. The dust discharge from the briquetting machine bag filters is discharged to two screw conveyors, one for each bag filter. The screw conveyors discharge the dust to the pulveriser bin or to a dump bin.

(h) Main bag filter: This removes the dust from the hot gas after the cyclones. The dust from the main bag filter discharges into screw conveyors, which discharge the dust into the dried coal bin, to be briquetted along with the dried coal from the cyclones.

(i) Cooling system: The briquettes are collected on two conveyors transferring them to a collecting conveyor, which then transports the briquettes to a bucket elevator that feeds them to a 20m high cooling column. The briquettes slowly move down the cooling column while high velocity ambient air circulates through it, cooling the briquettes. The cooled briquettes are discharged from the cooling column via vibrating feeders to a conveyor, which transports the cool briquettes to an out loading bin. The cooled briquettes are then loaded into trucks and taken to the briquette stockpiles.

(1) Coal injection system

79 Blockages had occurred at the coal injection pipes which prevented the coal injection system from functioning at full capacity. This had been overcome by shortening the drop lengths of the pipes and installing deflector plates, more powerful fans, flow measurement devices and control dampers. This enabled the coal injection system to operate at 100% injection rates. There remained a problem, because erosion occurred at the elbows of the steel injection pipes at

a faster rate than anticipated. The steel pipes were therefore replaced with ceramic tile-lined pipes in mid-October 2011 to reduce the rate of erosion but this had the inadvertent effect of introducing turbulence and pressure drops in the pipes and meant that, as of late October 2011, coal injection rates could not be raised to 100%. The planned solution was to reinstate the original steel pipes but with reinforced steel welded to the pipe elbows.

80 BCBCS submits that this solution could have been implemented by early to mid-December 2011 as the steel pipes and elbows were already available on-site and would have allowed the coal injection system to perform at 100% injection rates. It says that Prof Batterham and another of its technical expert, Mr Randy Rahm (“Mr Rahm”), supported this solution. BCBCS suggests that the eroded steel elbows would only need to be replaced approximately once every three months at a cost of US\$40,000, with each replacement needing at most three to four days during the periods of shutdown already built into the Tabang Plant’s annual operation schedule. BCBCS referred to Prof Batterham’s explanation that this was not merely a stop-gap measure, but a perfectly workable long-term solution. BCBCS stresses, as Mr Reilly (who was KSC’s site operations manager at that time) observed, that the exploration of potentially better solutions was simply what good engineers would do to improve on existing processes.

81 BR says that Mr Brian Kenihan (“Mr Kenihan”), who was WEC’s senior mechanical engineer and had been involved in the Tabang Plant’s commissioning, accepted that the solution was a “short-term” one and that the steel pipes would wear out and need to be replaced every three months. BR submits that this solution would not have worked as the erosion would cause blockages and lowered flow rate, so that the problem of blockage would not have been satisfactorily addressed by merely reinstalling the same pipes and

welding plates on the outside. It says that neither Mr Rahm nor Prof Batterham gave evidence which supported this as a long-term solution. BR also raises concerns about the other proposals which Mr Kenihan said could resolve the issues with the coal injection system, including the use of a non-pneumatic screw feed coal injection system and the use of chromium carbide pipes. BR says that it is unlikely that the former, which had been in use at another plant (the Cessnock demonstration plant) could be scaled-up for the Tabang Plant as the Cessnock plant was 14 times smaller in scale than the Tabang Plant in terms of production rate. BR also says that the use of chromium carbide pipes had never been tested at the Tabang Plant.

82 We note that the issue of erosion at the elbow of the pipes was the only remaining issue in November 2011 and that the solution was to revert to the original system and replace the pipes every few months. Whilst the pipes would still be prone to erosion, the issue of blockages occurring when the steel wore through to the concrete backing would be resolved by this solution, as Mr Rahm explained. We consider that this was a perfectly feasible solution and whether it is described as a short or longer-term solution merely reflects the fact that it is a perfectly adequate solution, although one needing periodic replacement of the pipes. There were clearly other potential solutions to overcome the need for pipe replacement. However, that does not make the reinforced pipes any less of a solution. We consider that the periodic replacement of the pipes would be likely to prevent the problem of blockages affecting the 100% coal injection rate.

(2) Dust extraction system

83 During the ramp-up process, the dust extraction system, as originally designed by SKM, did not have sufficient capacity to handle the amount of dust

actually generated during the briquetting process. This resulted in KSC deliberately limiting the Tabang Plant's production rate so as to limit the amount of dust being produced. To overcome this, the dust extraction system was overhauled and in November 2011 a new dust extraction system was being put in place, with more capacity that could handle the dust generated when the Tabang Plant was operating at 100% production capacity.

84 That new dust extraction system had a number of components. First, to address the issue of coarse dust/unbriquetted dried coal feed escaping from the briquetting machines, SKM designed and would have installed a dust separation chute system at the briquetters. This was designed to capture up to 16 TPH of unbriquetted feed present in the briquetter hoods in a separate chute and return it to the dried coal bin via tube chain conveyors. Second, to address the issue of airborne nuisance dust in the briquetter hoods, Advitech redesigned the baghouse dust extraction system (comprising two dust collector systems, newly designed briquette hoods, ducts and duct support structures, bag-house filters and exhaust fans), so that it would now capture up to 5.7 TPH of nuisance dust. BCBCS says that these works would have been completed by December 2011.

85 BR submits that the proposed modifications would not have resolved the problems with the dust extraction system. It says that these modifications were part of KSC's trial and error method which, throughout a period of over two years, sometimes with external consultants such as SKM and Aurecon, had failed to resolve the problems. It says that, as Mr Kenihan accepted, neither the modified design nor Advitech's designs had been tested or implemented. It refers to the evidence of its technical expert, Mr Steve Laracy ("Mr Laracy"), that without such testing or implementation, it was impossible to tell whether it would have succeeded. It says that Prof Batterham was mistaken in his evidence that there were test results to support the modified design. It submits that

BCBCS's case that the modifications would resolve the problem by overdesigning the new system to perform at four times the capacity of the existing one was an oversimplification. The dust was generated not simply during the briquetting process but also on its way to the stockpile so that the dust extraction system would not be able to deal with the dust generated at points beyond the briquetting process. Also, it says that, as Mr Laracy explained, the modified dust extraction system was oversized and might pull out larger dust particles and more dust, thereby reducing production capacity.

86 BCBCS says that Mr Laracy's assertion that the intended modifications were untested, unproven, and would give rise to other issues, has no substance and ignores the extensive discussions, tests conducted, and data collected regarding the intended modifications. In particular, it says that the separation chute system had been proven to work, as shown by an SKM report. Similarly, Advitech had designed the upgraded baghouse dust extraction system based on commonly utilised dust collection systems. It says that Prof Batterham and Mr Rahm have confirmed that the modifications would indeed be effective.

87 BCBCS also refers to Mr Laracy's acceptance that the modified dust extraction system should work. In relation to his assertion that the larger dust extraction system might pull out more dust, BCBCS says that was the intention and, if Mr Laracy was seeking to suggest that the modified system would also pull out the coarse dust, Mr Rahm's evidence was that this would not be an issue.

88 We have considered the evidence of the new modifications and do not think that Mr Laracy is correct in describing them as untested and unproven. He ultimately appeared to have backtracked from that view, and in any event, the modifications rely on proven technology and the designs have been sized to deal

with the dust problem. Whilst we accept that there does not appear to have been tests, we are not persuaded that this means the proven technology would not have worked. On that basis, we think that Prof Batterham and Mr Rahm were entitled to conclude that the modifications would have been effective, and we are persuaded that they would likely be so. We do not think that the overdesign would have caused problems as Mr Laracy seemed to think and we prefer Mr Rahm's analysis of this issue.

(3) Briquetting machines (the briquetters)

89 BCBCS says that BR's technical expert, Mr Michael Loos ("Mr Loos") is incorrect in saying that there were problems with the briquetters so that the Tabang Plant would not be able to achieve nameplate capacity. BCBCS argues, on the basis of contemporaneous documents, that KSC had already managed to operate the rolls or briquetting machines at 100 revolutions per minute ("RPM") as at December 2011. It suggests that this was accepted by Mr Loos, who then sought to say that he was only referring to the average speed of the roll. However, BCBCS says that this is contradicted by the plain wording of his report.

90 BCBCS relies on Prof Batterham's evidence, with much of which Mr Loos agreed, that adjustments could be made to conditions (including roll gap, pressure, feed rate, and roll speed) which would affect briquette quality. It says that the recorded briquetter trial results showed that the briquetters were capable of producing good quality product at significantly more than 10 TPH when operating at 100% roll speed since briquetter roll speed is approximately linearly proportionate to briquetter output rate.

91 BCBCS contends that the main issue faced by the briquetters was the breakdown of their Rossi gearboxes when operated at high speeds for extended durations, due to excessive shock loads generated by intermittent torque produced by the inline adjacent pocket rolls in the original design. Because of these reliability issues, the briquetters were operated at only approximately half of their intended speeds to minimise damage to the gearboxes/machines, and to cater for the dust extraction system limitations referred to above at [83].

92 To address this issue of excessive shock loads, BCBCS says that the inline pocket briquetter rolls were to be replaced with staggered/offset pocket rolls, although this was not completed by November 2011 due to the operational shutdown. It points out that prior testing using the staggered pocket rolls had demonstrated that the staggered pocket rolls would effectively eliminate the shock loading problem and result in improved machine stability. It refers to the explanation by Mr Todd Rollason (“Mr Rollason”), who is a research and development manager at WEC and was KSC’s technical manager until late-November 2011, about the significance of the test results and the mechanics behind this modification. BCBCS also relies on the evidence of Prof Batterham and Mr Rahm that the use of staggered pocket rolls would have completely resolved the gearbox issues.

93 BR says that, whilst Mr Rollason claims that changing the briquetter’s roll design from inline pocket rolls to staggered/offset pocket rolls would have addressed these problems, that evidence is based on a single test which showed that the briquette roll with staggered pockets was able to operate for 26 hours without any damage or noticeable wear. BR observes that this result is not reliable as there is no evidence of the speed of the briquetter at the time when the test was conducted. This is critical, because there is a correlation between the speed of the briquetter and the shocks that would have been generated. BR

submits that any test result which does not also show that the result could have been replicated at the speeds at which the briquetters were to be run (*ie*, 100 RPM) is misleading.

94 In the absence of the problem with the Rossi gearboxes, we see no reason why the briquetters should not have operated for long periods at 100 RPM and achieved the necessary output. We are not persuaded by Mr Loos' views to the contrary. It is clear that the problems with the Rossi gearboxes were caused by vibrations. Those vibrations would have been the result of the in-line pocket rolls, and so the change to staggered/offset pocket rolls would have eliminated that problem, as Mr Rollason's test demonstrated.

95 Given the results of that test and the underlying change to the loading configuration, we do not consider that the test speed was as critical as Mr Loos makes out. The tests showed that the problem of "shock loading" or "zero work situation" was eliminated with the staggered/offset pocket rolls as reflected in the non-failure of the sacrificial couplings of the gearboxes. We agree with Prof Batterham and Mr Rahm that this modification to staggered pocket rolls would likely have completely resolved the gearbox issues.

(4) Drying columns

96 The drying column affects the moisture content of the upgraded coal rather than the Tabang Plant's ability to hit nameplate capacity in terms of 1 MTPA output.

97 BCBCS says that, as the feedstock coal received had a higher moisture than anticipated, (namely, an average moisture content of 32.9% to 38.6% instead of the original design capacity of between around 32% and not exceeding 35%), it was necessary to modify the dryer by lengthening the dryer's

length to increase its capacity. It refers to test results showing that the extended drying column could achieve the desired drying effect so that the coal briquettes had an average moisture level of around 8.98% in October 2011, and around 6% to 7% was also achieved on multiple occasions in September and October 2011. BCBCS argues that this proved that the dryer was capable of achieving the targeted briquetted product moisture content range of 6% to 8%.

98 Whilst the moisture content of the briquetted product might have exceeded the targeted levels occasionally, BCBCS refers to the explanation of Mr Kenihan and Mr Rollason that this was due to operational parameters (such as the gas flow rates within the dryer, the coal feed rates to the dryer, and the cyclone outlet/baghouse inlet temperature) having been deliberately altered to cater for the constraints of the coal injection and dust extraction systems. The excess moisture was not due to a limit in the capacity of the drying column to achieve the targeted moisture level.

99 On this basis, BCBCS disputes the claim by Mr Laracy and Mr John Alderman (“Mr Alderman”), another of BR’s technical expert, that the design of the drying column was flawed and that the two extensions to the dryer were insufficient to reduce the moisture content of the coal to the requisite levels. It points out that Mr Laracy conceded during cross-examination that he had not seen the relevant records. It submits that Mr Laracy’s view that the same results could not be replicated at the higher volumes needed for nameplate capacity, is incorrect. BCBCS refers to the evidence of Mr Kenihan and Mr Rollason that the drying column would have been more effective at higher throughput rates given that the water sprays of the AEL system in the dryer would be turned-off, leading to higher temperatures in the dryer. It also relies on Prof Batterham’s opinion that, as the dryer had already achieved the targeted briquette product moisture levels with the limiting factors in place, it would be able to achieve the

same rates more readily at nameplate capacity, when the limitations are removed.

100 BR submits that there is no evidence to show that the Tabang Plant could achieve 1 MTPA of upgraded briquettes with the targeted moisture level of between 6% to 8%. It says that Mr Kenihan “cherry-picked” results from four daily shift updates in the period between September and October 2011 to show that moisture contents of 6% to 7% were achieved. It observes that Mr Kenihan accepted in evidence that the average moisture content in October 2011 was 8.98%, which was above the range of the target level. Further, BR says, given Mr Reilly’s evidence (which it does not accept) that the machines were only operating at 57.4% of the speed needed to achieve 1 MTPA, the moisture content of 6% to 7% which Mr Kenihan refers to was only achieved in circumstances where the briquetting machines were not even operating at the speed required to achieve 1 MTPA. Whilst Mr Kenihan said that the average did not matter because KSC was not targeting lower moisture in every production run, and the point was that once low levels were achieved KSC then knew it was repeatable, BR points out that there is no evidence to show that KSC was targeting low moisture on the four specific days (in the results used by Mr Kenihan) or during October 2011.

101 BR refers to the contemporaneous documents which show that in September 2011, the average moisture content figures for “Product Briquetters” was 10.86% and for “Sales” was 9.06%, both above the 8% level. BR submits that, on this basis, it is not reasonable to draw any conclusions from the fact that KSC had achieved a moisture content below 8% on only four separate occasions.

102 Further, BR says that on those four days the moisture content of the feedstock coal was below 32% and in October 2011, it was 33.26%. It refers to Prof Batterham's evidence that small increases from 32% to 36% in the initial moisture level were significant as the dryer has to extract 30% more moisture. Given that Prof Batterham said that the coal from Tabang had moisture contents as high as 39%, BR submits that there is no evidence that the Tabang Plant could have achieved a production capacity of 1 MTPA with moisture levels below 8%.

103 On the available evidence of the moisture content, in our view, the results of 6% to 7% achieved in September and October 2011 and the average of 8.98% achieved in October 2011 are, despite the points made by BR, strong indicators that the drying column would in all likelihood have achieved the required moisture reduction to the range of 6 to 8%.

104 Whilst the moisture content of the feedstock coal obviously has an effect and greater drying capacity would be needed to achieve the necessary moisture content range, we are persuaded that the drying column would have had the necessary capacity. We particularly note the operational limitations during late 2011 to cater for the constraints faced with the coal injection and dust extraction systems. We accept the evidence that the drying column would have been more effective at higher throughput rates when the AEL water sprays in the dryer would be turned off, leading to higher temperatures in the dryer.

105 This leads us to conclude (as Prof Batterham did) that, given that the dryer achieved the targeted briquette product moisture levels with the limiting factors in place, it would probably have achieved the same rates more readily at nameplate capacity, when those limitations would have been removed.

106 BR also refers to another problem with the drying column, namely that coal fell out of the dryer at certain bends, which led to a build-up in the drying column and affected the flow of the coal. Whilst KSC’s process engineer, Ms Carol Pieters, said that the turning vanes were effective because there was no evidence of any coal build up in the cyclone inlet, BR says that was at 40% capacity and both she and Mr Kenihan accepted that the real test would come at higher throughputs. BCBCS counters that the turning vanes installed at the bends of the duct of the drying column would have had no bearing on drying. Reference was made by BR to the involvement of Leap Australia as an “interim fix”. This appears to refer to the situation where only two turning vanes had been installed at the bottom of the duct and what was eventually installed were three turning vanes in the U-bend at the top and three turning vanes at the bottom of the duct. There was also criticism of reliance on simulations. But we think this was misplaced as the models matched the situation at the Tabang Plant. In any event, we do not see that this was a continuing problem and are of the view that the vanes, which were eventually installed, would have resolved the problem.

(5) Cage mill crusher, dried coal bin system and Redler distribution conveyors

107 There were issues concerning the cage mill crusher, dried coal bin system and Redler distribution conveyors, which relate to the issue of particle size distribution (“PSD”). For the reasons set out below at [137]–[139], we do not consider that the PSDs were a problem.

(6) Conclusion on the Tabang Plant

108 Having reviewed the outstanding issues with the Tabang Plant in November 2011, we have come to the conclusion that the implementation of the

proposed modifications and remedial works in November and December 2011 would have resolved the existing issues with the Tabang Plant.

109 On that basis, we do not accept Mr Loos's calculation of output but find that the Tabang Plant would have achieved nameplate capacity. In relation to Mr Loos's prediction of the output of the Tabang Plant, we do not accept that the use of a roll gap of 0.5mm and 1.9mm in his projection was justified and we accept Mr Rollason's evidence that a roll gap of 3mm was easily achievable during operation, leading to greater output capacity.

110 In addition, we accept Mr Rollason's evidence that it would be incorrect to calculate production capacity using three inch rolls because all 16 briquetting machines would be installed with five inch rolls. Further, the calculation using three inch rolls was incorrect as there were 60 pockets and not 38, which were of a smaller size. In addition, all 16 briquetting machines were to use staggered/offset pocket rolls.

111 As a result, we consider that the commissioning of the Tabang Plant would have led to it having an output of 1 MTPA by June 2012 at the latest.

112 We now turn to the remaining aspect, which is BR's contention that the quality of the briquettes produced by the Tabang Plant would not have met the required standards to be saleable.

Quality of the briquettes

(1) BR's evidence

113 BR says that the evidence establishes that the briquettes produced by the Tabang Plant were unsaleable because they were fragile and shattered easily.

114 BR refers to various contemporaneous documents from late-2009 to late-2010, which show that problems with dust and breaking briquettes had been raised. BR also refers to Mr Neil's evidence, in which he expressed concerns over the spontaneous combustion of briquettes, briquettes breaking apart, and the impossibility of transporting and selling the briquettes. BR submits that the data collected from the Tabang Plant from 2009 to 2011 also showed that the briquettes produced by the Tabang Plant were unsaleable.

115 BR refers the joint report of Mr Laracy and Mr Loos where they summarise the data collected by PT Geoservices between 2009 to 2011, when KSC had engaged them to conduct size analyses of the coal at the Tabang Plant. Based on a normal size of a briquette of above 22.4mm, Mr Laracy and Mr Loos explained that the data showed that the proportion of product with a size of more than 22.4mm was 79.67% at the briquetter output, 52.97% at briquetter transfer conveyor C5B and 17.88% at the briquette stockpile. They interpret this to mean that, as the briquettes were handled and transported within the Tabang Plant's production chain, the briquettes disintegrated and shattered, leaving only 17.88% of the product above 22.4mm by the time they reached the stockpile. They further suggest that the materials-handling processes after leaving the briquette stockpile would have caused considerably more degradation while the briquettes were transported from the Tabang Plant to customers.

116 BR also says that, for the briquettes to be strong, they had to have the correct feed coal particle size distribution, or PSD (as defined earlier at [107] above). Prof Batterham himself stated in his report that it was important to verify that the PSDs measured on the Tabang Plant were within the range of the PSDs set out in the patent for the BCB Process ("the BCB Patent"), which provides that the PSDs of the feed coal to the briquettes are to be within certain ranges. BR refers to Mr Laracy's presentation showing that 85 of the 250

samples which Mr Alderman reviewed did not fall within the range of the PSDs under the BCB Patent.

117 Whilst Prof Batterham stated in his report that six sets of PSDs were randomly chosen from 912 samples and that they fit within the range of the PSDs of the BCB Patent, BR contends that Prof Batterham’s analysis of the PSDs at Appendix 4 of his report showed that the samples contained variances from the PSDs under the BCB Patent. Prof Batterham explained that his analysis showed that 68% of the samples fell within one standard deviation and 95% fell within two standard deviations and that those deviations were permissible because they fell within “the spirit of [the BCB Patent]”. However, BR argues that the variances show that there were appreciable differences between the feed coal PSDs and those under the BCB Patent. In any event, BR says that the BCB Patent expressly stated that the range of the PSDs was to be within the ranges set out and did not say anything about deviations which would be permissible.

118 BR also refers to Mr Rollason’s evidence that the upgraded coal briquettes were sufficiently strong because, on the basis of a “modified” version of the drop shatter test, the briquettes had a drop shatter index of more than 90%. However, BR submits that the “modified” drop shatter test did not properly test the strength of the briquettes. It refers to Mr Clark’s view that the tumble abrasion test was the relevant test, which was not the one that had been carried out. It also says that the “modified” drop shatter test was not conducted in accordance with the standard procedure prescribed by the American Society for Testing and Materials (“ASTM”) as the accepted size for the drop shatter procedure was to use four to six inch coal, which would require unbroken briquette samples. But the test conducted at the Tabang Plant used samples containing representative amount of flash material and broken/unbroken briquettes. This, BR submits, would mean that the measurement of the change

in the PSDs of a given sample before and after a drop to calculate the drop shatter index would not accurately reflect the strength of the unbroken briquettes. Thus, the index of more than 90% was not a reliable indicator of the briquettes' strength. Based on the results annexed to Mr Rollason's affidavit evidence, BR says that the percentage of the sample which was larger than 22.4mm was 5.91% to 38.26% before the drop, so that 51.74% to 94.09% of the sample already contained broken briquettes.

119 On the point that only 17.88% of the product was larger than 22.4mm by the time the briquettes reached the briquette stockpile, BR says that Mr Rollason wrongly claimed that flash material (that is, material not in the shape of a briquette but produced by the flat surfaces of the briquetter rolls) also constituted part of the saleable product.

120 BR alleges that the briquettes were unsaleable because they were fragile and shattered easily. It argues that, even if flash material were part of the saleable product, that is irrelevant to the question of the briquette's mechanical strength. In any event, BR says that flash material was not part of the saleable product. It refers to a report in March 2011 from Mr Clive Pearson ("Mr Pearson"), one of the named inventors in the BCB Patent and who was engaged by WEC as a consultant, which stated that while flash material could be considered as product if it was useful to the end user, flash material was recycled in the production process for many briquetted materials. Mr Pearson stated that "at Tabang the flash material fitted a definition of coarse and fine dust", which BR says was not saleable product.

121 BR also refers to the views of Mr Laracy and Mr Loos that the quality level of the briquettes was so poor that it was not reasonable to conclude that the issues with the Tabang Plant could have been rectified.

(2) BCBCS's evidence

122 In relation to the flash material, BCBCS says that the output of the Tabang Plant was always intended to comprise briquettes and flash material. The aim of the Tabang Plant was to sell upgraded coal product that was fit for purpose and upgraded in terms of calorific value, not coal briquettes *per se*, and that products manufactured using the BCB Process were not limited to whole uniform briquettes. It stated that breakage of the briquettes was critical to the creation of safe stockpiles with adequate bulk density and reduced permeability. Moreover, it points out, as Mr Clark accepted, that the parties had specified desired target specifications pertaining to quality such as moisture content and calorific value of the upgraded coal briquettes, but did not provide specifications pertaining to size, shape or volume of the briquettes. BCBCS suggests that, as Mr Rollason said, the process was to upgrade the coal which would then be pulverised down to 75 microns and fed into a power station, and so the geometry of that material had no bearing on the end-user. It refers to Prof Batterham's evidence that flash material is eminently saleable and says that Mr Loos conceded that the output of the Tabang Plant included both briquettes as well as flash material and that there was no target-sized specification for the upgraded briquettes.

123 In any event, BCBCS says that the upgraded coal product was of acceptable mechanical strength and it refers to the drop shatter tests conducted just prior to the operational shutdown of the Tabang Plant in November 2011. It points to Mr Rollason's evidence that the data relied on by Mr Loos to support a conclusion that the briquettes had low mechanical strength was not reliable and not representative of the output briquettes. First, the data predated the implementation of the modifications planned in November 2011 and, in particular, the upgrades to the conveyor system would have allowed the

upgraded coal product to cure and strengthen further and reduce degradation. Second, the stockpiled briquettes had not been through the cooling column because it was being relocated. As such, the upgraded product was being transferred to the stockpiles without adequate cooling to allow them to cure and strengthen. This then resulted in the need to turn and compact the stockpiled product regularly, in order to lower the temperature and reduce the risk of spontaneous combustion. The use of heavy equipment to do this resulted in even greater breakage. Third, the smaller than usual stockpiles meant that the stockpiles had greater interaction with equipment, resulting in greater instability and breakage.

124 BCBCS submits that the upgraded coal product was saleable and relies on Prof Batterham's evidence that the data showed that the product produced by the Tabang Plant near the end of 2011 was saleable based on the target specifications for moisture, calorific value, ash and sulphur. Prof Batterham's view was that the calorific value of the upgraded coal could likely exceed 6100kcal on a routine basis and Mr Alderman accepted that there were no issues with the calorific value of the briquettes.

125 On the issues relating to the BCB Patent, the handling of briquettes beyond the Tabang site and excess dust creation, BCBCS says that these were not pleaded but were all raised late in the joint expert report dated 16 September 2020. BCBCS says that, in any event, these matters do not affect the fact that the Tabang Plant produced upgraded coal to the specification and that this was saleable.

126 In relation to BR's reliance on dust and other matters raised in the contemporaneous documents from 2009 to 2010, BCBCS points out that these predate the modifications that were put in place to improve dust collection and

strengthen the briquettes. BCBCS accepts that there was, at that time, an issue concerning the degradation of the briquettes as they passed through the cooling column, which led to excessive dust generation. However, to address this, rubber curtains and baffles were installed in the metal transfer chutes between the bucket elevator and the inlet of the cooling column to minimise the impact on the briquettes as they moved through the chute. Additionally, the bucket elevator system, which was a key source of damage to the briquettes, was to be replaced with a slow moving conveyor belt that would transport the briquettes from the briquetters to the top of the cooling column, before gently discharging the briquettes into the column. BCBCS says that this superior process would have allowed the briquettes to cool further and become more mechanically stable before reaching the cooling column.

127 Further, BCBCS points out that, while the installation of the conveyor system was not completed (because of the shutdown of the Tabang Plant), based on the evidence of both Prof Batterham and Mr Rahm, these measures would have fully addressed the briquette degradation issue. In addition, a separate and dedicated baghouse dust extraction system to handle the presence of excessive residual dust was also installed in the cooling column.

128 In relation to the cage mill crusher, dried coal bin system and Redler distribution conveyors, the issues relate to the PSD and BCBCS relies on the evidence of Prof Batterham. He explains that the BCB Process at the Tabang Plant collects the coarse dust in multiple cyclones and the fine dust in a baghouse and returns all the dust to the process. Given the sensitivity of the briquetting process to the PSD, he says that it is important to verify that the PSDs measured on the Tabang Plant were within the range of the PSDs presented in the BCB Patent.

129 Prof Batterham states that it is well known that some size distributions are easier to compact and form harder, denser briquettes than others, and best results occur with a size distribution that “fits together”, *ie*, the voids between large particles are filled with medium sized particles and the voids between the medium sized particles are filled with small particles.

130 In the BCB Patent, there are four PSDs identified as suitable for briquetting, but Prof Batterham says that Mr Alderman only included three of the four PSDs in his report. The PSDs in the BCB Patent cover a range of mean sizes, defined as the size at which 50% of a PSD passes. For these PSDs (which Prof Batterham represented as a diagram in his report), the 50% passing size ranges from 0.3 to 0.7mm, indicating that mean size *per se* can vary over a wide range. He says that equally important is the amount of very fine particles (defined as particles finer than 0.1mm) present and the PSDs in the BCB Patent show a wide range of 10% to 18% in this category. He therefore concludes that the PSDs in the BCB Patent cover a wide range.

131 Turning to the size distributions of the feed to the briquetters as measured at the Tabang Plant, Prof Batterham points out that there are over 912 samples from the Redler distribution conveyors feeding the paddle mixers and briquetters covering the period between 18 September 2010 to 17 March 2011. He produced a diagram in his report showing six sets of PSDs chosen from the 912 samples by random selection and compared these to the PSDs from the BCB Patent. This showed that the six randomly selected PSDs from the Tabang Plant fitted totally within the range of the PSDs of the BCB Patent. From this, he concluded that the different dust collection and feed arrangement to the briquetters at the Tabang Plant did not produce any appreciable difference in the briquetter feed PSD as compared with those in the BCB Patent, contrary to Mr Alderman’s evidence that the PSDs at the Tabang Plant “would likely be

deficient in the percentage of coarsest and finest sizes needed to provide dense particle packing and the strongest possible briquettes”.

132 Prof Batterham refers to Mr Alderman’s evidence that there would be problems in the bins handling the fine dust from the baghouses, in particular, that the hopper design would lead to arching, funnel flow (rat holing) and additional size segregation, which would cause further degradation of the briquetter feed PSD leading to lower density weaker briquettes. Prof Batterham says that this phenomenon, which is well-known and well-understood, is called “cohesive agglomeration,” and is very much associated with ultrafine particles. He says that the briquetter baghouse fines (“BBF”) PSDs show a small variation in sizing with 50% passing being in the range 0.085 to 0.13mm. Against this, for fine dust of this density, cohesive agglomeration is only relevant for PSDs with a mean size less than 0.025mm. As such, he says that the mean size of the fines in the BBF bin is at least three times coarser than the mean size where cohesive agglomeration comes in to play. The BBF fines could therefore be expected to flow evenly from the bin.

133 On Mr Alderman’s allegations regarding the cage mill crusher, BCBCS says that Mr Alderman’s is incorrect in relying on the Rosin-Rammler paper as authority for the proposition that a single-stage milling process will “produce a [PSD] that would not result in the production of dense, strong briquettes”. BCBCS says that the paper does not support this proposition, nor does it even mention briquettes as it simply describes a mathematical relationship for PSD. The paper describes the PSD of material from single-step milling at fine sizes. BCBCS also suggests that the four PSDs provided in the BCB Patent are suitable for briquetting as they follow the Rosin-Rammler distribution. Moreover, BCBCS says that Prof Batterham has demonstrated that the Tabang Plant’s cage mill crusher produces output following a Rosin-Rammler

distribution and is eminently appropriate for briquetting. BCBCS says that the cage mill crusher is a commonly used piece of equipment in the industry that can be easily adjusted for fineness and, as stated by Mr Rollason, the cage mill crusher at the Tabang Plant was in fact adjusted to achieve the desired PSD.

134 On the dried coal bin system, BCBCS says that that Mr Alderman is wrong in his contention that the recycling of dust into the feed adversely affects PSD. BCBCS instead submits that the layout of the dried coal bin shows that the baghouse fines are deposited very closely to the cyclone outlets, thereby allowing the fine dust to mix well with the coarser particles from the cyclones. The dust generated from the cyclones is around 142 TPH, while the dust from the baghouse is 3 TPH and so the dust from the cyclones represents approximately 97.9% of the flow into the dried coal bin. BCBCS says that the small proportion of dust from the baghouse is unlikely to be relevant and, contrary to what Mr Alderman maintained, the baghouse dust did not accumulate or hang up and discharge all at once, affecting the PSD. BCBCS refers to Mr Rollason's evidence on this. BCBCS also refers to Mr Laracy's acceptance, during his opening presentation, that the cyclones and the dried coal bin did not appear to have any real issues.

135 As for the Redler distribution conveyors, BCBCS relies on Mr Rollason's evidence that the Redler conveyors, when operated properly, achieved a good mixing effect of the feed material. This was supported by Prof Batterham. In relation to the four graphs relied on by Mr Alderman to argue that the Redler conveyors were producing PSDs outside the BCB Patent, BCBCS says that these graphs show results that are within the range of one, and certainly within the range of two, standard deviations which would be "quite reasonable performance", which is the norm in process industries for real process operations like the Tabang Plant. BCBCS also relies on Prof Batterham's

evidence that, when the 214 results of a test on the Redler conveyors were plotted on Weibull paper, the PSDs across the Redler conveyors were not significantly different and showed that they were not causing an uneven or non-uniform PSD.

136 Finally, BCBCS says that the “modified” drop shatter test was adequate. It relies on Mr Rollason’s explanation that the tumble abrasion test is less relevant to briquettes, is generally used for coke, and simulates a scenario vastly different from the drop shatter test, which replicates material dropping. BCBCS refers to Mr Clark’s evidence that drop-shatter tests would have simulated the coal handling journey. It also says that the modified drop shatter tests would have been able to measure the variations in product and thus allowed the user to understand the comparative variations in product quality even if broken briquettes were used. BCBCS disputes BR’s calculation that 93.33% of the initial sample was already broken, as this was based on seven test results from Mr Rollason’s affidavit evidence, which were not indicative results and omitted the other results which had been set out by in Mr. Rollason in that same affidavit.

(3) Our findings

137 We find on the evidence that the upgraded coal product was achieving (and would have been likely to achieve) the target specifications for moisture, calorific value, ash and sulphur and there were no problems with the calorific value of the upgraded coal. The only real question raised by BR is whether the briquettes were saleable because, as BR contends, they were fragile and shattered easily.

138 The starting point for this issue is clearly the question of whether the PSDs met the BCB Patent and had a size distribution which allowed the briquettes to be made up of densely packed particles so as to have the required strength. There was a difference of view as to the extent to which the six sets of PSDs from the 912 samples obtained from the Redler distribution conveyors feeding the paddle mixers and the briquetters at the Tabang Plant between September 2010 and March 2011 (see [131] above) had complied with the BCB Patent or had the ability to produce strong, densely packed briquettes.

139 Having considered the evidence, we accept that the PSDs of those six random samples chosen by Prof Batterham do not represent the complete picture of those 912 samples. However, as Prof Batterham explained and we accept, as with all statistical results for industrial processes, compliance has to be looked at by considering averages and deviations. He also analysed 214 PSDs and explained that his analysis showed that 68% of the samples fell within one standard deviation and 95% fell within two standard deviations and that, in real process operations, such deviations were permissible (see [135] above). When he was taken to the BCB Patent he pointed out that the four size distributions were “typical” ranges of size distribution. We were impressed by Prof Batterham’s evident knowledge and experience and consider that the PSDs of those six random samples, particularly given the extensive period in which they were taken, showed that they sufficiently complied with the BCB Patent. We therefore find that given the PSDs of the material being processed and made into briquettes, there was no inherent problem with the briquettes, if they were treated and handled properly after being formed.

140 Once the briquettes were formed, they had to pass through the remainder of the process, including cooling and transportation to the briquette stockpiles. That was part of the process of cooling and curing the briquettes so that they

could achieve the required strength. As BCBCS accepts, there had been issues with the degradation of the briquettes as they passed through the cooling column. We believe that it was the way in which the briquettes had originally been handled and passed through the cooling column which caused the problems. To address this, rubber curtains and baffles were installed in the metal transfer chutes between the bucket elevator and the inlet of the cooling column to minimise the impact on the briquettes as they moved through the chute. In addition, the bucket elevator system, which was a key source of damage to the briquettes, was to be replaced with a slow moving conveyor belt that would transport the briquettes from the briquetters to the top of the cooling column, before gently discharging the briquettes into the column (see [126] above). On that basis, we are persuaded that it is likely that the briquettes produced, if handled correctly in the way in which they would have been with the improvements made to the Tabang Plant, would have remained intact and not suffered from the damage caused by the cooling process and transportation to the stockpile.

141 In terms of the tests carried out on the briquettes to measure whether they were sufficiently robust, there does not appear to be a particular test which was intended to be applied to the briquettes. We are not persuaded that the reference to the tumble abrasion test in Mr Clark’s conference paper was the appropriate test for the purpose required here. It is also clear that the drop shatter test, intended for four to six inch coal could not be conducted in accordance with the standard procedure prescribed by the ASTM. On that basis, given the material to be tested, we consider that the “modified” version of the drop shatter test was an appropriate test to use.

142 The question then arises as to whether the results of those tests gave satisfactory results. They were performed by PT Geoservices Ltd, which had

been engaged by KSC. The tests conducted between 19 and 20 October 2011 showed a “% size stability” (which refers to the drop shatter index rating) of 90.33. The tests conducted just before the shutdown of the Tabang Plant in November 2011 showed a % size stability of between 86.96 and 96.02, with an average of 90.98. Whilst we accept that, at that time, the briquettes had broken pieces and flash material, we think that the tests did indicate, within their limits, that the upgraded briquettes had adequate mechanical strength. We also bear in mind that these tests were conducted just before the shutdown of the Tabang Plant in November 2011 and the planned modifications which would have allowed the upgraded coal product to cure and strengthen further and thereby reduce degradation. Finally, we note that there was no size specification for the upgraded coal and in the end, it would be pulverised to be used in furnaces. On that basis, we believe that flash material would have been part of the saleable product and therefore we do not think that there would have been any issue with the saleability of the upgraded coal containing flash material.

143 Accordingly, we find that the upgraded coal would have had the requisite properties to be saleable and would have been of sufficient strength to withstand the processes after the briquettes were formed for transportation to the stockpile and to the end user.

Conclusion

144 We therefore conclude that the technology underlying the BCB Process would have worked, and with the proposed modifications which would have been carried out after November 2011, the Tabang Plant would have achieved nameplate capacity of 1 MTPA by June 2012 at the latest, and that the upgraded coal would have been a saleable product.

Whether BR would have been entitled to wind up KSC

145 We have found that the Tabang Plant would have achieved nameplate capacity by June 2012. However, BR argues that even if so, KSC would not have been able to repay the loans under the First SLA, the Second SLA and the PLFA on their due dates. BR therefore submits that, in all likelihood, it could and would have applied to wind up KSC.

146 The loan of US\$25m that BCBCS extended to KSC under the First SLA was repayable in instalments on “the First Payment Date”, on each anniversary date of the First Payment Date and on “the Final Payment Date”. Article 1.1 of the First SLA stipulates that the First Payment Date would be one year from the earlier of “the Commencement of Commercial Production” and 31 December 2013. The Commencement of Commercial Production is, in turn, defined under Art 1.1 of the First SLA as “[a]fter the commissioning of the production facility and the first 100,000 MT of upgraded coal is produced”. While we note that the Commencement of Commercial Production is not synonymous with the Tabang Plant’s achievement of nameplate capacity, it suffices for present purposes to treat June 2012 (by which date the Tabang Plant would have achieved nameplate capacity) as the date of the Commencement of Commercial Production. Accordingly, if BR had not repudiated the JV Deed, the First Payment Date would have been in June 2013. The remaining instalments would have been due on each anniversary date of the First Payment Date, with the Final Payment Date falling in June 2018. As for the loans extended by BCBCS to KSC under the Second SLA and the PLFA, they were due for repayment on 31 December 2012 and 30 June 2012 respectively.

147 Mr James Nicholson (“Mr Nicholson”), BCBCS’s quantum expert, concluded that KSC would not have a positive cash flow until 2028. He did not

specifically deal with the possibility of KSC being wound up before then or at any time thereafter. On Mr Nicholson's model, interest due on the relevant loans would only have been repaid from 2028 onwards and the principal amount due under the PLFA would only begin to be repaid in 2037. Accordingly, it would not be until 2043 that BCBCS could recoup its wasted expenditure on the Project. In coming to that conclusion, Mr Nicholson took it for granted that BR would have accepted this projected state of affairs and permitted the joint venture to continue until 2043. This assumption is unrealistic. The relationship between the parties having obviously deteriorated, BR would most likely have felt that it was too long to wait until 2037 (much less until 2043) to reap profits from the joint venture. It would therefore most probably have taken steps to wind up KSC upon the latter's default on its loan repayments and to write off the Project. Indeed, from as early as 3 November 2011 (at the November 2011 Board Meeting), BR had already informed BCBCS of its wish to exit the joint venture by the end of December 2011 principally because it no longer made commercial sense for BR to continue with the joint venture (see *Second Judgment* at [29]). That position was maintained by BR at the 6 December 2011 EGM, at which parties agreed to put the Tabang Plant into care and maintenance (see *Second Judgment* at [51]).

148 BCBCS submits that BR, not having pleaded that it would have wound up KSC, cannot now take the point. BCBCS adds that, since the Subordination Letter deferred repayment of the SLAs to after the PLFA had been repaid (see [19] above), non-payment of the SLAs could not have been a valid basis for winding up KSC as long as the PLFA remained outstanding. BCBCS further alleges that BR would have breached the obligation of mutual co-operation under cl 17 of the JV Deed by liquidating KSC. The sum total of BCBCS's

submissions on this issue is that BR could not have unilaterally exited the joint venture by liquidating KSC.

149 We are unable to accept BCBCS's arguments. In our view, there would have been no legal impediment to BR liquidating KSC. We do not believe that it is realistic to assume that BR would simply have hung on to the Project, without seeking to wind up KSC and to bring an end to the joint venture.

150 First, in its D&CC at para 197D, BR signalled the possibility of KSC's liquidation affecting the viability of the joint venture. Paragraph 197D of BR's D&CC reads:

Further, it is also denied that any breach by BR of the JV Deed caused or was the effective cause of the alleged loss and damage in paragraph 59G of the Statement of Claim. ... In this regard:

...

- (b) By November 2011, the relationship between BR and BCBCS had broken down, BR no longer had any faith in the viability of the Project, and the Tabang Plant had become an environmental and health hazard that was undermining BR's relationship with the local villagers. Further, on 2 November 2011, BR told the representatives of WEC and/or BCBCS that it wished to liquidate [KSC].

...

BR hence squarely indicated that it would be relying on the likelihood of BR putting KSC into bankruptcy to deny that any of its breaches had caused loss and damage to BCBCS.

151 Second, that the PLFA was to be repaid ahead of the SLAs does not mean that BR was precluded from declaring an event of default in relation to the SLAs pending full repayment of the PLFA. The Subordination Letter merely deals with the sequence in which the loans would be repaid. That by itself would

not have prevented BR from declaring an event of default if the SLAs remained outstanding beyond their due dates. In particular, Art 9.7 of the PLFA expressly provides that the PLFA does not alter the terms of the SLAs, which contain provisions that cannot be waived or varied except in writing.

152 Third, BCBCS’s argument on the effect of cll 17.1 and 17.3 of the JV Deed does not appear to have been pleaded. Even if we were to overlook that deficiency in pleading, cl 17.3 of the JV Deed provides as follows:

Each of the Members agrees with the other that this Deed is entered into between them and will be performed by each of them in a spirit of mutual cooperation, Good Faith, trust and confidence and that it will use all means reasonably available to it (including its voting power whether direct or indirect, about [KSC]) to give effect to the objectives of this Deed and to ensure that [KSC] complies with its obligations.

153 “Good Faith”, as defined in cl 1.1 of the JV Deed, means being reasonable (among other things). As regards the parties’ obligation of good faith, we held during Tranche 1 as follows (see *First Judgment* at [131]):

The obligation of ‘good faith’ as narrowly defined in cl 1.1 [of the JV Deed] would not have precluded BR ... from ... deciding in light of [its] own situation not to contribute further funding. ... In other words, the good faith obligation in cl 17.3 [of the JV Deed] did not mean that BR was constrained to approve any and all additional expenditure assessed by BCBCS.

In our view, it would have been reasonable for BR to decide, at some point before 2028, that it was not prepared to “fund” KSC further by postponing KSC’s repayment of the debts owed to it until 2037, as the earliest moment when any positive return on the joint venture might be expected, more than 30 years after the execution of the JV Deed.

154 It follows that, even if BR had not breached its obligations under the JV Deed, the joint venture would nonetheless have legitimately come to an end

with BR's winding up of KSC well before 2037. The joint venture would never have had sufficient cash flow to enable BCBCS to recoup its wasted expenditure on the Project as at the time of BR's breaches. In these circumstances, we hold that BCBCS is not entitled to claim for its wasted expenditure on the Project.

Whether BCBCS's likely cash flow from the Project would have covered its wasted expenditure

155 Assume, however, that BR would not have been able to wind up KSC for some reason. On that premise, there is a dispute as to the cash flow which BCBCS would have obtained from the Tabang Plant but for BR's breaches and whether that putative cash flow would have been enough for BCBCS to cover its wasted expenditure of US\$91.6m. The parties' quantum experts have relied on different assumptions in reaching their differing conclusions. In this section, we will consider the validity of their respective assumptions. More specifically, we will examine the following sub-issues:

- (a) whether BR's obligation to supply coal to KSC would have expired by 7 April 2028;
- (b) the likely life of the Tabang Plant;
- (c) the coal conversion rate ("CCR");
- (d) the likely coal prices;
- (e) whether there should be provision for additional capital expenditure ("CAPEX");
- (f) the validity of the parties' respective operating expenses ("OPEX") assumptions;

- (g) whether BCBC would have deferred the payment of certain fees by KSC;
- (h) whether KSC would have been gifted US\$20m;
- (i) the cash flow under the PRM; and
- (j) whether BR's performance under the JV Deed should be taken into account and, if so, how it should be taken into account.

156 Before embarking on the sub-issues just identified, it is convenient to deal with the question – whether BCBCS's potential cash flow should be discounted. BCBCS says that there is no need to factor a discount as one is not concerned with the net present value (“NPV”) of future cash flow, but only with whether BCBCS's wasted expenditure would have been covered by its putative cash flow. BR, on the other hand, contends that a discount should be applied to the future cash flow and that not to do so would result in over-compensation. In our view, BCBCS is correct. No discount should be applied to BCBCS's future cash flow. The question of whether BCBCS's wasted expenditure could have been covered by future cash flow entails comparing the gross returns that might have accrued to BCBCS against its original gross investment. This contrasts with the applicable approach when determining a claim for lost profit. In such cases, the NPV of future cash flow would have to be assessed; otherwise, one would be receiving present sums which, in the ordinary course of events, could only have materialised in the future.

The expiry of BR's obligation to supply coal to KSC

157 BR says that its obligations to supply coal to KSC would have terminated upon the expiry of Bara's and FSP's coal mining concessions.

Article 7.1 of the PLFA required that BR supply coal to KSC in accordance with the 2010 CSAs. Under cl 2.1 of the 2010 CSAs, BR’s obligation to supply coal would end upon the earlier of the expiry of Bara’s and FSP’s concessions or of their reserves. The Bara and FSP concessions would have come to an end on 7 April 2028 and 21 July 2025 respectively. But BCBCS argues that the Indonesian government would have renewed the concessions as a matter of routine, and that the parties were operating on the understanding that those concessions would be renewed.

158 According to BCBCS, BR’s obligations under cll 3.8(b)(i) and 3.8(b)(iii) of the JV Deed were not limited to supplying coal from the Bara and FSP concessions. They were instead to “enter into all relevant agreements as are necessary to conduct the Business” and to “assist in procuring Coal for the operation of the Business”. In this connection, we note BR’s position that the Bara concession would have exhausted its coal supply in 2030 and the FSP concession, in 2035. This assertion is based on a “Statement of Resources and Reserves” for Bara and FSP dated 26 June 2019. But BCBCS challenges the provenance of the latter document as it was only introduced in Mr Taylor’s report. Mr Taylor did not have personal knowledge about the document and the maker of that document was not called to give evidence. Accordingly, we accept that little weight can be placed on the Statement of Resources and Reserves as evidence of the availability of coal at the Bara and FSP concessions.

159 Nonetheless, there are difficulties with BCBCS’s case. First, its pleaded case is that the parties intended “for the supply of coal from Bara and/or FSP to [KSC]” to be in accordance with *the 2010 CSAs*. BCBCS now says that BR was obliged to obtain coal from *other concessions* if coal could not be procured from the Bara or FSP concessions. Not only is this allegation markedly different from what BCBCS has pleaded, but it is also unclear, for example, what other

concessions would realistically have been available to BR. Second, BCBCS has not actually pleaded the fact that the Bara and FSP concessions would have been renewed upon expiry. All it has done is to allude in broad terms that it would have recovered its wasted expenditure from the continuation of the Project. That is too vague to have alerted BR to BCBCS's intention to argue that the concessions should and would have been renewed upon expiry. Third, we do not believe that BR was obliged under the JV Deed to continue supplying coal to KSC through to 2037 and beyond. Pursuant to cl 17.1 (read together with cl 3.8(b)) of the JV Deed, BR's obligation was limited to using "all reasonable endeavours to promote the Business and profitability of [KSC]". In our view, BR could reasonably have formed the view at some point before 7 April 2028 that the Project would take far too long to return a profit, and that its best interests lay in cutting its losses and not renewing the Bara and FSP concessions. The JV Deed did not oblige BR to renew the Bara and FSP concessions beyond their expiry dates on 7 April 2028 and 21 July 2025.

160 For these reasons, in projecting BCBCS's cash flow, it must be assumed that BR's obligation to supply coal to KSC would have expired by 7 April 2028. On this footing, BCBCS would not have been able to recoup the wasted expenditure on the Project that it had incurred.

The likely life of the Tabang Plant

161 BR submits that the life of the Tabang Plant was 20 years at most, while BCBCS contends that it was at least 32 years. BR observes, for instance, that the SKM Technical Feasibility Study (see [36(b)] above) describes its scope as the delivery of a costing schedule for the Project "based on a 20 year plant life". The HPC Economic Feasibility Report (see [36(c)] above) likewise refers to a 20-year period (from 2008 to 2027) in making financial projections about the

Tabang Plant. On its part, BCBCS has focused on the fact that the SKM Technical Feasibility Study provided for overhaul costs of US\$498,000 in the 18th year of the Tabang Plant's life. BCBCS infers from this that the Tabang Plant must have been expected to run for more than 20 years, or there would have been little point in undergoing an overhaul in its 18th year. BR counters that the Tabang Plant was supposed to be renovated every six years due to the expected wear and tear of its components, so little can be read into a projected overhaul following the third six-year cycle of its lifespan.

162 We do not believe that much about the life of the Tabang Plant can be deduced from the fact that documents such as the SKM Technical Feasibility Study and the HPC Economic Feasibility Report only referred to a plant life of 20 years. It is common for feasibility studies to assume a plant life of 20 years and to make projections on that basis. That does not necessarily mean that the plant is only envisaged to last for 20 years; a period of 20 years is merely a convenient and suitable basis upon which the viability of a project as a whole may be assessed. In our view, the Tabang Plant was envisaged to have a minimum life of 20 years, but with the prospect of continued operation beyond that 20-year period if the plant proved to be successful.

CCR

163 A CCR of 1.5 means that 1.5 tonnes of raw coal will be needed to produce a tonne of upgraded coal briquettes. A higher CCR will therefore affect the cash flow from KSC to BCBCS. Relying on Mr Rollason's factual evidence and Prof Batterham's expert evidence, BCBCS contends that the CCR for the Tabang Plant would have been 1.5. BR, on the other hand, claims that the CCR would have been 1.66. BR obtained this figure based on, among other things,

the November 2011 Board Pack, which is an information package sent by Mr Maras to Mr Neil on 28 October 2011 (see *Second Judgment* at [19]).

164 We prefer BCBCS’s figure of 1.5. The calculation of a CCR of 1.66 by BR’s expert, Mr Laracy, is flawed in certain respects. For example, Mr Laracy suggests that there would have been a “7.5% loss of fine coal and spillage” that should not be taken into account when computing upgraded product. But this wrongly assumes that upgraded coal briquettes of less than 0.5mm in size would be regarded as dust instead of upgraded product. Further, he utilised incorrect raw coal consumption rates for the power station.

165 After making the necessary corrections to Mr Laracy’s model, the CCR derived under that model would be 1.49. This is consistent with the CCR of 1.5 that was used in the March 2011 board pack. The CCR of 1.5 has also been verified by Prof Batterham after making a conservative provision for loss of dust. In contrast, and as Mr Reilly (KSC’s site operations manager) confirmed, the CCR of 1.66 upon which BR relies was a conservative estimate, which would have improved once the Tabang Plant was up and running.

The likely coal prices

166 There are four components to consider for coal prices: (a) the historical price of feedstock coal; (b) the forecast price of feedstock coal; (c) the historical price of upgraded coal briquettes; and (d) the forecast price of upgraded coal briquettes.

(1) Historical price of feedstock coal

167 On component (a), BR’s expert, Mr Peter Ball (“Mr Ball”), used the parties’ agreed formula for the base price under the 2010 CSAs as a starting

point. Where this resulted in prices lower than the HBA Price, he made adjustments so that the prices would comply with the HBA Regulations. While the 2010 CSAs provided for adjustments based on certified ash and sulphur content on an “air dried” basis, Mr Ball made his adjustments on an “as received” basis. This is because Art 8.3 of the 2010 CSAs requires that, where the parties’ agreed feedstock coal price falls below the HBA Price, the coal be sold at the HBA Price. For similar reasons, Mr Ball did not compute the component attributable to the HBA Price based on the average of the preceding three months’ HBA Price, even though this is provided for under Art 8.4 of the 2010 CSAs. Instead, in accordance with Art 5 of *Director General Regulation No 515* dated 24 March 2011 (“HBA Reg 515”), which had been issued pursuant to the HBA Regulations, he applied a 50% weighting for the month prior to the start of the delivery period, and a weighting of 30% or 20% for the months further back.

168 In contrast, BCBCS’s expert, Mr Lloyd Hain (“Mr Hain”), departed from the 2010 CSAs by calculating the base price of feedstock coal on a monthly basis, even though Art 8.2 of the 2010 CSAs provided for the calculation of that price on a “delivery year” basis. It is also unclear how he could have calculated his adjustments on an “air dried” basis as he claims. Furthermore, instead of applying the formulae for adjustments set out in Arts 8.7 and 8.8 of the 2010 CSAs, Mr Hain instead applied HBA Reg 515 – that is, US\$0.40 per 1% ash and US\$4 per 1% sulphur. He provided revised prices after the trial had concluded.

169 We prefer Mr Ball’s evidence over that of Mr Hain’s. Mr Ball’s methodology brings the historical prices of feedstock coal in line with the HBA Regulations where the formula provided for in the 2010 CSAs falls short.

Mr Hain’s methodology, on the other hand, can yield prices below the HBA Price, even though it would not have been legal for coal to be sold at such prices.

(2) Forecast price of feedstock coal

170 We next turn to component (b). It should first be noted that the “HBA Index”, which is a benchmark price index published by the Indonesian government for 6,322kcal/kg gross as received (“GAR”) coal, is an average of four price indices: (a) the Newcastle Export Index; (b) the GlobalCoal Newcastle Index (“GCNEWC”), which is the most widely used index for Newcastle thermal coal; (c) ICI-1 (for 6,500 kcal/kg GAR coal) (“ICI-1”); and (d) the Platts Indonesia Index (for 5,000 kcal/kg GAR coal) (“Platts 5900”)

171 BR contends that even though the HBA Index is a benchmark price index, Mr Hain did not adjust the Indonesian price components that he used to that specification in calculating his series of HBA Prices. Instead, he used the ICI-1 and Platts 5900 indices, and forecasted the HBA Prices before applying them to the pricing formula in the 2010 CSAs. BR also complains that Mr Hain’s calculations were based on forecasts obtained from AME publications that were not before the court. In contrast, Mr Ball used an average of the historical ratio between the HBA Index and KPMG’s forecast of the GCNEWC. As there was nothing to show that this ratio fluctuated greatly over time, BR submits that Mr Ball’s evidence is more persuasive than Mr Hain’s.

172 BCBCS argues that Mr Hain’s evidence should be preferred. This is because Mr Hain first forecasted the HBA Index based on AME’s forecast price series of the four indices making up the HBA Index, before averaging those individual forecasts to arrive at his forecast of HBA Prices. He subsequently applied his forecasted HBA Prices to the pricing formula in the 2010 CSAs.

Mr Ball’s methodology is said to be inappropriate as he adopts a single ratio (0.97), whereas the ratio between the HBA Index and the GCNEWC fluctuated widely between 0.7431 and 1.2238 on a month-to-month basis. KPMG’s GCNEWC forecast is additionally said to be unreliable, as it simply summarises the forecast prices of 22 research databases and broker reports and contained a “significant disclaimer”.

173 We prefer Mr Ball’s evidence. With Mr Hain’s methodology, it is possible for the feedstock coal price to fall below the HBA Price. While there may be some fluctuation in the ratio between the HBA Index and the GCNEWC from month to month, that would not by itself mean that an average of those fluctuations is unreliable. Nor is there anything amiss in the way that KPMG predicts the GCNEWC by referring to an aggregation of forecasts from reputable sources. We believe that such an approach would be more reliable than Mr Hain’s, which relies on AME’s price forecasts.

(3) Historical price of upgraded coal briquettes

174 On component (c), BR observes that Mr Ball first calculated the average of the Platts 5900 and the Argus Coalindo ICI-2 (for 5,800 kcal/kg GAR coal) (“ICI-2”) for the years from 2012 to 2020. He then adjusted that average to obtain a price for coal that would have complied with the 6,100 GAR that is set out in the Coal Briquette Sale Agreement dated 3 April 2008 between BR and KSC (see *First Judgment* at [32(b)]). Mr Ball explained that the purpose of adopting such an approach was to eliminate bias in the indices used. BR complains that, in contrast, Mr Hain solely relied on AME’s “historical coal price database”, which was not available to the court. Mr. Hain also applied an ash premium on the basis that this was typical for buyers in North Asia.

175 BCBCS, on the other hand, criticises Mr Ball for taking a blended average of indices before adjusting to 6,100 kcal/kg GAR. It argues that there is no evidence to show that the ICI-2 index tracks coal of 6,100 kcal/kg GAR. The Platts 5900 should instead have been used, as it tracks the price of coal closest to those sought to be priced, together with an ash premium of US\$1.50. Such a premium may be applied because the upgraded coal briquettes would likely be sold to end-users in Japan and Korea, who would have valued ash and would be willing to pay a premium for low ash.

176 We are not persuaded by Mr. Hain's justification for adopting an ash premium. The evidence does not establish that the upgraded coal briquettes were likely to have been sold to purchasers valuing ash. Mr Hain accepted that the figures in his report on the historical upgraded coal briquette prices were inaccurate and attempted to correct them belatedly after the trial. This means, however, that his new figures have not been tested under cross-examination. On the other hand, Mr Ball's evidence is not without difficulty. More specifically, the range of coal that the ICI-2 index tracks is unclear. One would expect that, with a 5,800 GAR average, the ICI-2 would have a slightly lower price than the Platts 5900. BCBCS suggests that Mr Ball deliberately chose a blended average incorporating the ICI-2 to obtain lower prices. But it is apparent that Mr Ball adjusted the ICI-2 prices *upwards* to obtain the price for coal of 6,100 GAR specification. It can also be seen from Mr Ball's figures that there are instances where the adjusted ICI-2 price exceeds that of the Platts 5900. This supports Mr Ball's explanation that he used two indices to counteract bias. On balance, therefore, we prefer Mr Ball's approach to that of Mr Hain.

(4) Forecast price of upgraded coal briquettes

177 On component (d), Mr Ball likewise derived an average (of 0.8726) from the historical ratios between a blend of the Platts 5900 the ICI-2 on the one hand, and the GCNEWC as forecasted by KPMG on the other. BCBCS raises similar objections to those that it has made in relation to Mr Ball’s forecast prices for feedstock coal. It highlights, in particular, that the relevant historical ratio fluctuated from 0.65181 to 1.01947. For similar reasons to those already given above, we are of the view that Mr Ball’s approach is more reliable than Mr Hain’s. Mr Hain’s forecasting methodology again relies on AME’s forecasts which are of unknown validity, whereas Mr Ball has drawn on a wider range of sources.

Whether there should be provision for additional CAPEX

178 BR complains that Mr Nicholson’s report failed to provide for additional CAPEX. Mr Nicholson assumed that KSC would only incur an additional CAPEX of US\$3.2m from November 2011 to January 2012. This was done by taking the CAPEX of US\$17.4m that was budgeted for modification works in 2011 and subtracting the CAPEX of US\$14.2m that KSC had already incurred. BR says that the assumption that no further CAPEX would be required after January 2012 is artificial and at odds with the evidence. Additional CAPEX would be needed to replace useful assets. The information memorandum that KSC provided to Standard Chartered Bank in 2009 mentioned that CAPEX of at least US\$3.2m would be needed for five plants – in other words, some US\$0.6m would be needed for the Tabang Plant each year. On the other hand, BCBCS argues that Mr Nicholson’s model already caters for “sustaining CAPEX” in utilising an OPEX estimate of US\$12 per tonne. Mr Rollason explained that this OPEX estimate was based on KSC’s budget for financial

year (“FY”) 2011/2012 containing various items that were “replacement” or “sustaining” CAPEX. Mr Reilly also said that any replacement or repair costs came under operations and maintenance. In addition, BCBCS submits that BR has wrongly relied on the “useful lives” of various assets set out in the depreciation policy in KSC’s financial statements. The duration of the “useful lives” of those assets does not mean that those assets would have been replaced thereafter.

179 We prefer BR’s evidence to that of BCBCS. We accept that BR’s argument based on the lives of key assets is untenable. The useful life of an asset in a depreciation policy does not reflect the actual life of that asset. For instance, it would seem strange that the buildings in the Tabang Plant would have to be replaced after only ten years. That said, BCBCS’s argument that the sustaining CAPEX was already built into the operating costs is unconvincing. One would expect CAPEX to be incurred in intervals as equipment is replaced. Therefore, we find Mr Taylor’s conservative estimate of CAPEX of US\$0.6m each year to be more compelling.

The validity of the parties’ respective OPEX assumptions

180 The dispute between the parties on OPEX concerns the Balikpapan office. BR submits that Mr Nicholson’s OPEX assumptions are flawed as he unreasonably assumed that KSC’s office in Balikpapan (where KSC’s corporate, logistical and human resources related functions were performed) would be closed from 1 January 2012, with its costs being absorbed into those of the Tabang Plant. The cost of running the Balikpapan office was provided for in KSC’s budget for July 2011 to June 2012 (in other words, FY 2011/2012). BCBCS’s assertion that the running costs of the Balikpapan office were intended to be reviewed after December 2011 is, according to BR,

unconvincing. For example, KSC’s budget did not include costs for setting up critical functions, such as those relating to procurement, finance and human resources, at the Tabang Plant. The Balikpapan office would therefore have reduced cash flow by US\$60.4m if it had continued to operate until 2043, as BR asserts would have been the case.

181 On the other hand, Mr Reilly gave evidence on BCBCS’s behalf that, as someone who had been personally involved in preparing KSC’s budget, he had considered KSC’s operating needs and had found that a substantial portion of the functions performed at the Balikpapan office would be redundant once the Tabang Plant achieved commercial production by the end of December 2011. BCBCS claims that KSC’s budget for FY 2011/2012 explicitly catered for the Balikpapan office in 2011 only because KSC took a conservative approach. On balance, we prefer Mr Nicholson’s approach on the basis of Mr Reilly’s evidence.

Whether BCBC would have deferred the payment of certain fees by KSC

182 The question is whether BCBC would have deferred payments under the sub-licence agreement dated 28 March 2008 (“the Sub-Licence”) and the Technology Services Agreement dated 3 April 2008 (see *First Judgment* at [32(d)]). BCBC and KSC were the parties to both agreements. BR makes three main arguments on this sub-issue.

- (a) First, BR challenges Mr Nicholson’s assumption that KSC would not have been obliged to pay the Sub-Licence fee and fees for Technical, Maintenance and Support Services under the Technology Services Agreement (collectively, “the Fees”) and that any interest on the Fees would be waived. BR argues that the Sub-Licence and the Technology Services Agreement did not provide any mechanism for

payment to be deferred or for interest to be waived. They were “Ancillary Agreements” per Annex 4 of the JV Deed and could therefore be varied or terminated only with the unanimous consent of KSC’s directors.

(b) Second, BCBC would have had to show that the deferred payment of the Fees would have been in its commercial interest and consistent with the duties of its directors. This, BR submits, could not have been the case as the head licensors of the BCB Process were pressing for the payment of the licence fees due to them. Since BCBC’s only source of revenue was KSC’s payment of the Fees, it could not have paid those licence fees without first obtaining payment from KSC. KSC, in turn, would not have been able to finance its CAPEX and operational losses and would have been forced to cease business without a deferral.

(c) Third, BR points to the lack of evidence that WEC could have funded BCBC’s payments to the head licensors. In fact, the evidence shows that BCBC was actively seeking to defer payment of the licence fees to the head licensors.

183 BCBCS says that payment of the Fees would have been deferred until KSC was in a positive cash position and that it would have waived interest on the Fees. This was confirmed by Mr Flannery, the managing director and the CEO of WEC, in his testimony. It would have been a huge boost to BCBC if the technology underlying the BCB Process had been proved to work, and so deferral of KSC’s payment of the Fees would have made commercial sense.

184 We generally prefer BCBCS's arguments on this sub-issue. We previously found in Tranche 2 that BCBCS was willing and able to fund KSC (see *Second Judgment* at [223] and *Remittal Judgment* at [13]). It naturally follows that BCBC would have been willing and able to defer payment of the Fees. The deferral would simply have been a unilateral postponement of a contractual obligation. It would not have been a variation or termination requiring the approval of the directors that BR had appointed to KSC's board. However, we disagree that BCBC would have waived interest due on the Fees. It seems to us that the corollary to deferment of the Fees would have been the payment of interest as BCBC's compensation for postponing payment of those fees.

Whether KSC would have been gifted US\$20m

185 Mr Nicholson assumes that WEC would have provided gift funding of US\$20m through BCBCS to KSC. BR argues that this assumption is unrealistic. According to BR, such funding would have been unlawful as it would have amounted to a breach of fiduciary or statutory duties by WEC's directors. In contrast, BCBCS relies on our prior finding that BCBCS was willing and able to fund KSC up to June 2012 (see *Remittal Judgment* at [13], [15] and [19]). There would have been sound commercial reasons to continue such funding, even if by way of a gift, due to the importance of establishing the viability of the technology underlying the BCB Process. As such, funding KSC by way of a gift of US\$20m even after 2012 could not have been a breach of duty on the part of WEC's directors. Courts should also be slow to interfere with commercial decisions taken by directors (see, eg, *Vita Health Laboratories Pte Ltd and others v Pang Seng Meng* [2004] 4 SLR(R) 162 at [17]–[18]).

186 On this sub-issue, we favour BCBCS's position. WEC's directors never actually considered whether to make a gift of US\$20m to KSC. But this fact alone does not mean that it would have been improper for WEC's directors to make such a gift to KSC.

The cash flow under the PRM

187 The cash flow under the PRM would have constituted a separate means by which BCBCS could have recouped some of its wasted expenditure (see [65] above).

188 BR says that Mr Nicholson's calculations of the cash flow under the PRM are grossly inflated for various reasons. First, Mr Nicholson used a price of US\$8.60 per tonne of feedstock coal over the life of the Tabang Plant. Under cl 8.2 of KSC's coal supply agreement with Bara dated 3 April 2008, or the 2008 CSA (see *First Judgment* at [32(a)]), the base price of US\$8.60 per tonne would be adjusted after four years to account for changes in the costs of coal mining and delivery, and to provide for a 35% profit margin. Clause 3 of the April 2011 Side Letter states that, to the extent that the base price under the 2010 CSAs is higher than that under the 2008 CSA, such amount will be credited to KSC in a payment reconciliation. Clauses 4 and 5 of the 2010 CSAs also provide for the base price to be adjusted in accordance with formulae in cl 8 of the 2008 CSA. This means that the base price would have increased to about US\$15 to US\$18 (or US\$16.50 on average) per tonne from 2021 onwards. Second, Mr Nicholson failed to take into account Indonesian withholding tax (20%) and value added tax (10%) in his calculations. Third, Mr Nicholson applied the Singapore (and not the Indonesian) corporate tax rate to adjustments, distributions and payments under the PRM. Fourth, Mr Nicholson failed to take into account royalties on coal sales which Bara and FSP had to pay to the

Indonesian government. Fifth, Mr Nicholson failed to take into account the fact that BR is only a 90% shareholder in Bara and FSP and that 10% of any payments would go to the minority shareholders.

189 BCBCS argues that BR only belatedly challenged the base price of feedstock coal. BCBCS thus objects to documents purporting to demonstrate that the base price would have increased to between US\$15 to US\$18. On taxes, BCBCS submits that Mr Taylor was not qualified to opine on tax matters and his evidence should be disregarded. On royalties, Mr Taylor’s evidence that Bara and FSP would have to pay royalties to the Indonesian government relies on a third-party document (namely, a 2011 “Mining Investments and Taxation Guide” by PricewaterhouseCoopers); there is no evidence of what royalties, if any, are payable today.

190 We accept some, but not all, of BR’s criticisms of Mr Nicholson’s calculations. It is likely that mining costs would have increased over the years. The difficulty lies in how such increases should be estimated (for example, by adopting a measure of inflation). There is nothing in BCBCS’s submissions which addresses this issue. On taxes, even if Mr Taylor was not qualified to opine on Indonesian tax law, there is nonetheless evidence in the form of a letter from MS Taxes International (which BCBCS and BR jointly engaged) that some tax would be levied on transfers under the PRM. Mr Nicholson’s assumption that no taxes would have been payable therefore strikes us as improbable.

191 On royalties and BR’s 90% shareholding in Bara and FSP, the April 2011 Side Letter sets out a mechanism for preserving the original economics agreed between the parties. This consists of two adjustments which Mr Nicholson summarises in his report: one dealing with the situation where the feedstock coal prices payable under the 2010 CSAs are higher than the

feedstock coal prices that would have been paid under the 2008 CSA; and the other dealing with the situation where the selling prices for the upgraded coal briquettes exceed the sale price of US\$46.25 per tonne provided for in the Coal Briquette Sale Agreement between KSC and BR. BR's contentions thus boil down to a complaint that the two adjustments do not in fact preserve the original economics of the transaction. But assume that the original economics are not preserved. The mere fact that the parties' agreed mechanism did not preserve the original economics cannot justify disregarding the wording of the April 2011 Side Letter.

Whether BR's performance under the JV Deed should be taken into account and, if so, how it should be taken into account

192 BR submits that the value of its performance of the JV Deed should be deducted from the damages payable to BCBCS on account of its wasted expenditure, such that BCBCS is entitled to reduced damages or no damages at all. This is because where a party in breach has provided some consideration, the innocent party would have received the benefit of the partial performance of the contract and should thus not recover *all* of the money that it has expended. According to BR, BCBCS received the full value of its loans under the First SLA and the Second SLA by, respectively: (a) a matching loan of US\$25m from BR to KSC; and (b) BR's contribution of its own loan facility of US\$25m to KSC. BR also contends that BCBCS received the full value of its loan under the PLFA as BR had provided the Coal Advance and had procured its subsidiaries to supply coal at below-market rates. BCBCS counters that BR confuses restitution with breach of contract. BCBCS did not receive any value for its wasted expenditure as it did not recover anything from the Project.

193 We disagree with BR. It is difficult to see how loans extended by BR to KSC can be characterised as a benefit obtained by BCBCS, especially since it is undisputed that BCBCS has not derived any returns from KSC.

Conclusion on issue 2

194 In summary, we find that, although the Tabang Plant could have achieved nameplate capacity by June 2012 (see [144] above), BR would have been entitled to put KSC into liquidation (see [149] above). This would have had the effect of preventing BCBCS from recouping any of its wasted expenditure (see [154] above). We have additionally found the following, even if BR did not liquidate KSC:

- (a) In support of BCBCS's case:
 - (i) the Tabang Plant was envisaged to have a minimum life of 20 years, with the prospect of continued operation beyond that period if the plant proved successful (see [162] above);
 - (ii) the Tabang Plant would have been attained a CCR of 1.5 (see [165] above);
 - (iii) Mr Nicholson's views on OPEX are to be preferred (see [181] above);
 - (iv) BCBC would have deferred payments under the Sub-Licence and the Technology Services Agreement (see [184] above);
 - (v) WEC would have provided gift funding of US\$20m through BCBCS to KSC (see [185] above); and

(vi) loans extended by BR to KSC cannot be characterised as a benefit obtained by BCBCS (see [193] above).

(b) Contrary to BCBCS's case:

(i) BR's obligation to supply coal to KSC would have expired by 7 April 2028 and BCBCS would not have been able to recoup the entirety of its wasted expenditure before then (see [157] and [159]–[160] above);

(ii) Mr. Ball's price coal price calculations are to be preferred (see [169], [173] and [176]–[177] above);

(iii) additional CAPEX of some US\$0.6m would be needed for the Tabang Plant each year (see [179] above);

(iv) BCBC would have charged interest on deferred payments under the Sub-Licence and the Technology Services Agreement (see [184] above); and

(v) Mr Nicholson's calculations of the cash flow under the PRM need to be reduced to take account of tax (see [190] above).

195 In the light of the foregoing, and in particular [194(b)(i)] and [147] above, we are of the view that BCBCS would not have recouped its wasted expenditure from KSC's cash flow even if BR did not liquidate KSC. We therefore answer issue 2 in the negative and dismiss BCBCS's claim for damages for its wasted expenditure.

Issue 3: BCBCS's claim for loss of a chance***Whether BR was obliged to proceed with the expansion of the Tabang Plant to 3 MPTA***

196 The final issue concerns BCBCS's claim for the loss of a chance to expand the footprint of the Tabang Plant to 3 MTPA and to profit therefrom. For the loss of a chance to constitute a compensable head of damage, it must be shown that the provision of the chance is the object of the duty that has been breached (see *Tembusu Growth Fund Ltd v ACTAtek, Inc and others* [2018] 4 SLR 1213 ("*Tembusu Growth*") at [123]). Therefore, in order for BCBCS to sustain its loss of a chance claim, it must be shown, at the very least, that BR was obliged under the JV Deed to proceed with the expansion of the Tabang Plant to 3 MTPA.

197 Clause 3.2 of the JV Deed provides:

It is proposed, subject to the Feasibility Study, that the [Tabang] Plant will initially be able to produce [1 MTPA] of Upgraded Coal Briquettes ... and *if the Project is successful* then it is the intention of the parties to increase the capacity of the [Tabang] Plant so that it is able to produce [3 MTPA] of Upgraded Coal Briquettes until the expiry of the Coal Supply Agreement.

[emphasis added].

198 The process of contractual interpretation requires the court to ascertain, based on all the relevant objective evidence, the intention of the parties at the time they entered into the contract; the text ought always to be the first port call for the court, although the relevant context is also important (see *Y.E.S F&B Group Pte Ltd v Soup Restaurant Singapore Pte Ltd (formerly known as Soup Restaurant (Causeway Point) Pte Ltd* [2015] 5 SLR 1187 at [32]). We agree with BR that the plain words of cl 3.2 admit of no ambiguity and they are nothing more than an expression of parties' intention to expand the capacity of

the Tabang Plant. Crucially, the phrase, “it is the intention of the parties” is prefixed by “if the Project is successful”. This emphasises that the intention (*not* agreement) of the joint venture parties to proceed with any expansion would have been contingent on the Tabang Plant being successful in the first place. While we note that the parties disagree on whether the “success” of the Project would be determined solely by the Tabang Plant’s ability to achieve nameplate capacity, for present purposes, it is clear that parties could not have known of the prospects of the Project at the time when they executed the JV Deed on 7 June 2006. At the time when the JV Deed was entered into, the parties would have intended that any plans for the Tabang Plant’s expansion be left for future negotiation. There could have been no agreement on the same.

199 We therefore hold that BR was not obliged to expand the production capacity of the Tabang Plant to 3 MTPA. This alone is fatal to BCBCS’s loss of a chance claim, as the facts of *Tembusu Growth* ([196] above) (at [123]–[125]) demonstrate. Even if BCBCS had expected the parties to follow through with their (contingent) intention to expand the Tabang Plant’s capacity to 3 MTPA, and no matter how reasonable its expectation might have been, the fact remains that BR was not obliged to carry out such an expansion. In our judgment, BCBCS’s loss of a chance claim must fail.

Whether the doctrine of loss of a chance is applicable

200 In the light of the above, BCBCS’s loss of a chance claim must fail. However, BR has also put forth another argument as to why that must be so, which we will also consider for completeness. BR submits that the doctrine of loss of a chance only applies in situations where the chance to acquire the asset or benefit which has allegedly been lost is dependent on the actions of a third party; the doctrine does not apply in situations where the chance alleged to be

lost is dependent on the *defendant's* actions. BR says that the present case falls within the latter.

201 We agree with BR. Even if it could be argued that BR was obliged to expand the capacity of the Tabang Plant to 3 MTPA, and that the purpose of that obligation is to provide to BCBCS the chance of such expansion and of deriving profits thereupon, BCBCS's chance to profit from the Tabang Plant's increased capacity is contingent on BR's (and indeed, its own) actions, rather than the actions of an independent third party. In these circumstances, the doctrine of loss of a chance is simply inapplicable. Claims for loss of a chance arise only where "the contingency, on which a particular head of claimed-for loss depends, is a matter of *third-party* discretion, ***rather than the discretion of the defaulting promisor or the disappointed promisee***" [emphasis in original in italics; emphasis added in bold italics] (see *The Law of Contract in Singapore* ([54] above) at para 21.026).

202 The decision in *Auston International Group Ltd and another v Ng Swee Hua* [2009] 4 SLR(R) 628 ("*Auston*") is instructive in this regard. The respondent in *Auston* agreed to subscribe for convertible bonds in the appellant. Subsequently, the respondent commenced proceedings against the appellant, alleging that the appellant had failed to issue the bond certificates. The respondent thus claimed to be entitled to damages on the basis that he had lost a real and substantial chance of converting the bonds into shares. The trial judge held, among other things, that the appellant had breached the agreement between the parties by failing to issue the bond certificates to the respondent, and that damages ought to be assessed on the basis of the respondent's loss of a chance to convert the bonds into shares.

203 The appellant appealed against the trial judge's decision. One of the issues before the Court of Appeal was how damages ought to be assessed. The Court of Appeal disagreed with the trial judge's decision to assess damages on the basis of the loss of a chance and found that the doctrine was inapplicable as the case did not involve the hypothetical actions of an independent third party:

38 The remaining issue we have to decide is how damages should be assessed. Having found that the Convertible Bonds were issued, the Judge decided the issue of liability against the appellants and also that damages be assessed on the basis of the loss of chance to convert the Convertible Bonds into the Conversion Shares. We do not agree with this basis for assessment. The doctrine of 'loss of chance' was recently revisited by this court in *JSI Shipping (S) Pte Ltd v Teofoongwonglcloong* [2007] 4 SLR(R) 460 at [147]–[156], wherein the principles laid down in *Allied Maples Group Ltd v Simmons & Simmons* [1995] 1 WLR 1602 ('*Allied Maples*') were re-endorsed. In essence, where the loss of chance caused by the defendant's default is dependent upon the action of an independent third party, a plaintiff might not be required to show on a balance of probabilities that the chance would have come to fruition. Damages would be assessed so long as the chance is a real or substantial one, as opposed to a speculative one. On the other hand, if no third party is involved, a plaintiff must prove what he would have done if there had been no breach on a balance of probabilities. The distinction is evident from the following extract from Harvey McGregor, *McGregor on Damages* (Sweet & Maxwell, 17th Ed, 2003) ... at paras 8-034–8-037:

In his judgment [in *Allied Maples*] Stuart-Smith L.J. distinguished between three types of situation or categories. In his first category fall cases in which the defendant's negligence consists in some positive act of misfeasance and the question of causation is one of historical fact; this is of course the situation to which Lord Reid averted in *Davies v Taylor* and proof on the balance of probabilities prevail here. In the second category fall cases in which the defendant's negligence consists of an omission where causation depends not upon a question of historical fact but upon the answer to the hypothetical question what would the claimant have done if there had been no negligence; how the claimant would have reacted is again subject to proof on the balance of probabilities. In the third category fall cases in which the claimant's loss depends upon the

hypothetical action of a third party, whether in addition to action by the claimant or independently of it; here the claimant need only show that he had a substantial chance of the third party acting in such a way as to benefit him.

...

From the above it can be seen that what is required to bring loss of a chance into play is the hypothetical action of a third party.

...

... there is undoubtedly today an unfortunate tendency to argue loss of a chance in situations where it can have no conceivable application. The temptation is of course great; if total success cannot be achieved, aiming for a percentage success is attractive.

[emphasis added]

204 The decision in *Lavarack v Woods of Colchester Ltd* [1967] 1 QB 278 (“*Lavarack*”) precludes any suggestion that a defendant may be considered an “independent third party”. The plaintiff in *Lavarack* was employed by the defendant as their European representative. Under the employment agreement, he was entitled to “such bonus (if any) as the directors ... shall from time to time determine.” The defendant subsequently dismissed the plaintiff. Following the plaintiff’s dismissal, the defendant revised its salary structure to remove the bonus scheme; employees of a similar grade to the plaintiff also received an increase in their salary.

205 The plaintiff successfully brought a claim for wrongful dismissal. On appeal, one of the issues before the court was whether the plaintiff was entitled to compensation for the loss of a chance of earn either future bonuses or the equivalent. The majority of the English Court of Appeal held that the plaintiff had no right to be compensated for remuneration which *might* have become due under a future agreement which the defendant *might* have made with him (at 297C):

In the present case, if the defendants had continued their bonus scheme, it may well be that upon the true construction of this contract of employment the plaintiff would have been entitled to be recompensed for the loss of the bonus to which he would have been likely to be legally entitled under his service agreement until its expiry. But it is unnecessary to decide this. They were under no contractual obligation to him to continue the scheme and in fact it was discontinued. His legal entitlement under the contract on which he sues would thus have been limited after March 31, 1965, to his salary of £4,000 per annum. And there, in my view, is the end of the matter. I know of no principle upon which he can claim as damages for breach of one service agreement compensation for remuneration which might have become due under some imaginary future agreement which the defendants did not make with him but might have done if they wished. If this were right, in every action for damages for wrongful dismissal, the plaintiff would be entitled to recover not only the remuneration he would have received during the currency of his service agreement but also some additional sum for loss of the chance of its being renewed upon its expiry. ...

206 *Lavarack* was endorsed by the Court of Appeal in *Latham Scott v Credit Suisse First Boston* [2000] 2 SLR(R) 30 (“*Latham*”). *Latham* concerned an appellant whose employment contract provided for a discretionary annual bonus in addition to a salary. Shortly after starting work, the appellant’s employment was terminated by the respondent. The appellant commenced proceedings against the respondent for wrongful dismissal. He claimed damages for the loss of a chance to earn the annual bonus, which he argued he would have earned had he not been wrongfully dismissed. Citing *Lavarack*, the Court of Appeal rejected the appellant’s claim and held that even if the appellant’s employment had not been terminated, he would not have been legally entitled to claim the annual bonus since that bonus was entirely discretionary (at [57]). The Court of Appeal considered that a plaintiff is only entitled to damages in respect of benefits deprived by a breach of contract when these benefits are those which the defendant was contractually obliged to confer in the first place; even if *Hadley v Baxendale* ([31] above) permits recovery for all losses within the

parties' reasonable contemplation at the time of contracting, it does not render the defendant liable in damages for failing to do that which he had no obligation to do (at [59]–[64]). Returning to the context of the present case, if a defendant were viewed as an “independent third party” for the purposes of the loss of a chance doctrine, that would make the defendant liable in damages for depriving the plaintiff of a favourable outcome, even if the defendant was never contractually obliged to provide the plaintiff with one. That result cannot be correct.

207 Indeed, that the doctrine of loss of chance only applies to situations involving the hypothetical action of a *third party* is readily explicable. As noted earlier, a defendant is not liable in damages for not doing that which he is not bound to do (see *Latham* at [60]). It is also trite that damages should be assessed on the assumption that a defendant will perform the contract in the manner least onerous to itself – in other words, that it will seek to perform only its obligations under the contract and nothing more. Accordingly, BR is only liable for what it was contractually obliged to do, not what BCBCS had expected it to do (see *The Law of Contract in Singapore* ([54] above) at para 21.020).

Whether BCBCS has proved its loss of a chance to profit from the Tabang Plant's increased capacity

208 Given our conclusion above that BCBCS's loss of a chance to profit from the Tabang Plant's increased capacity is not a compensable head of damage, and that the doctrine of loss of chance is inapplicable to the present case, there is, strictly speaking, no need for us to decide whether BCBCS has proved its loss of a chance to profit from the Tabang Plant's increased capacity. Nevertheless, for completeness, we briefly explain why we answer this question in the negative.

209 For BCBCS’s claim to succeed, it needs to show on a balance of probabilities that, if not for BR’s breaches: (a) there was a chance that the Tabang Plant’s capacity would have been expanded to 3 MTPA; and (b) that chance was a real and substantial chance one. Ultimately, this turns on the factual issues of: (a) whether the parties would have expanded the capacity of the Tabang Plant to 3 MTPA; and (b) whether the Tabang Plant could have been expanded to 3 MTPA.

Whether the parties would have expanded the capacity of the Tabang Plant to 3 MTPA

210 As we considered earlier, cl 3.2 of the JV Deed provides that parties intend (not agree) to increase the capacity of the Tabang Plant “if the Project is successful” (see [192] above). We note that the parties disagree on whether the “success” of the Project would be determined solely by the Tabang Plant’s ability to achieve nameplate capacity. Even assuming that “success” (per cl 3.2 of the JV Deed) means achieving nameplate capacity (as BCBCS contends) and that, on a balance of probabilities, BCBCS would have agreed to expand the Tabang Plant’s capacity to 3 MTPA, we find that BR would almost certainly *not* have been on board with such an expansion.

211 We need only point out that five and a half years after the incorporation of KSC, and after the parties had periodically exceeded agreed caps on expenditure, the Tabang Plant was still unable to achieve 1 MTPA despite nearly US\$153m having been poured into the Project. BR would therefore have entertained serious doubts as to whether it should continue working with BCBCS to expand the Tabang Plant’s capacity to 3 MTPA, given that it had been an uphill battle to achieve production capacity of even 1 MTPA. Indeed, we previously found that, at the November 2011 Board Meeting, BR had

informed BCBCS of its wish to exit the joint venture by the end of December 2011, principally because it no longer made commercial sense for BR to continue with the joint venture (see *Second Judgment* at [29(a)]–[29(c)] and [161]). Hence, notwithstanding our findings that the Tabang Plant would have achieved 1 MTPA by June 2012 (see [144] above) and that BCBCS was willing and able to unilaterally fund KSC until the completion of commissioning and testing or until June 2012 (see *Remittal Judgment* at [13]–[19]), BR’s reluctance to proceed with any expansion of the Tabang Plant’s production capacity is fatal to BCBCS’s claim for loss of a chance.

212 While BCBCS accepts that damages should be assessed on the basis that BR performs its obligations in the way that is most beneficial to BR, it cites *Durham Tees Valley Airport v BMIBaby Ltd and another* [2010] EWCA Civ 485 for the proposition that a party will be assumed to have acted in good faith (albeit with its own commercial interests in mind) and not uncommercially to spite the other party. The point remains, however, that even if BR had acted in good faith, it would not have been uncommercial for BR to decide against continuing the Project, given the breakdown in the parties’ relationship. Moreover, BCBCS’s and BR’s financial experts agree that the deteriorating relationship between the parties would have concerned prospective lenders, thereby throwing into question KSC’s ability to secure additional funding from third party lenders for the expansion of the Tabang Plant.

213 In its written submissions, BCBCS asserts that the parties continued to enjoy a positive working relationship even as of November 2011. It highlights that BR offered to continue supplying coal to KSC on or about 2 November 2011 and that Bara/FSP had in fact supplied coal to KSC until 9 November 2011. BCBCS’s assertion, however, ignores two realities. First, the fact that BR was prepared to continue supplying KSC with coal is hardly synonymous with

its wish to continue the joint venture. Indeed, BR indicated its willingness to continue supplying KSC with coal *at the same time* that it intimated its desire to withdraw from the Project (see *First Judgment* at [71] and *Second Judgment* at [37]). Second, in relation to Bara's/FSP's continued supply of coal to KSC until 9 November 2011, the obvious corollary thereof is that Bara/FSP *stopped* supplying coal to KSC after that date at BR's request (see *Second Judgment* at [33]). We therefore find that, in any event, there did not exist a real and substantial chance that BR would have agreed to increase the Tabang Plant's capacity to 3 MTPA.

Whether the capacity of the Tabang Plant would have been expanded to 3 MTPA?

214 In any case, to succeed on its claim for loss of a chance, BCBCS would also have had to show that: (a) it would have secured funding for the construction of the second and third plants either by way of third party financing or gift financing from WEC; (b) the infrastructure at Tabang was sufficient to support a 3 MTPA plant footprint; (c) there was sufficient coal in the Tabang mines to support a 3 MTPA plant footprint; and (d) KSC would have enjoyed positive cash flows from the expansion.

215 In relation to funding, we do not consider that third party funding would have been available. We accept BR's submissions that prospective lenders would not have lent money to KSC because of the breakdown of the parties' relationship. Further, even on the basis of Mr Derek Nelson's (BCBCS's costings expert) and Mr Nicholson's figures, the lenders would have considered whether KSC could meet the appropriate debt service cover ratio ("DSC Ratio") of 1.7, being the ratio of net cash operating income (typically measured by earnings before interest tax, depreciation and amortisation ("EBITDA")) over a

period to the amount of principal and interest for the same period. A DSC Ratio of 1.7 means that net cash operating income has to be 170% of the amount of principal and interest falling due in the relevant period. On Mr Nicholson's numbers, a loan of US\$120 million would have been required for the expansion of the Tabang Plant up to 3 MTPA and on that basis KSC would have needed to project cashflows of US\$204 million over the seven years of the loan. On Mr Nicholson's own numbers, however, KSC would only have an EBITDA of approximately US\$36.4 million during the life of the loan, which would be substantially below the requisite DSC Ratio of 1.7. We do not think that the evidence of BCBCS's witnesses about the interest of banks and others in providing finance constitutes any basis for coming to a different conclusion.

216 Nor do we think, that a loan or a gift would have been provided by WEC/BCBCS for the reasons set out by BR. We think that the necessary funding would only realistically have been lent on commercial terms. Whilst we have held that it is likely that KSC would have been gifted US\$20m in relation to the original plant (see [185]–[186] above), we consider that gift financing of the second and third plants would have raised different commercial considerations and, in particular, would have related to the far greater expenditure necessary for those additional plants. While BCBCS relies on the evidence of Mr Maras and Mr Flannery, we do not think that constructing two further plants for KSC at Tabang would have been the outcome of the analysis which Mr Flannery says would have been undertaken by BCBCs and WEC to consider whether to proceed with the expansion. Further, we are not persuaded that Mr Maras' evidence shows that BCBCS and WEC realistically had sufficient wherewithal to provide the levels of gift funding which would have been necessary for the second and third plants. Even if they had the wherewithal, we do not think they would have provided finance except on commercial terms.

217 On that basis, we conclude that BCBCS would not have secured funding for the construction of the second and third plants, either by way of third party financing or gift funding from WEC/BCBCS.

218 In relation to whether there was sufficient coal in the Tabang mines to support a 3 MTPA plant footprint, we have already held that the JV Deed did not oblige BR to renew the Bara and FSP concessions beyond their expiry dates on 7 April 2028 and 21 July 2025 so that BR's obligation to supply coal to KSC would have expired by 7 April 2028 (see [157]–[160] above). We therefore do not think that the expansion of the Tabang Plant would have proceeded because of the problems which would have arisen with the availability of coal supplies.

219 Therefore, even if BCBCS had been able to pursue a claim based on loss of a chance and we had accepted that there was sufficient infrastructure for the expansion of the Tabang Plant's capacity, nevertheless on Mr Nicholson's predictions of positive cashflow, we do not consider that BCBCS has established, on a balance of probabilities, that there was a real and substantial chance that the capacity of the Tabang Plant would have been expanded to 3 MTPA.

Conclusion on issue 3

220 For the foregoing reasons, we dismiss BCBCS's claim for damages in respect of the loss of a chance to profit from the operation of the Tabang Plant at an expanded capacity of 3 MTPA.

Conclusion

221 For the reasons set out above, we dismiss BCBCS's claim for damages for its wasted expenditure and its claim for damages for the loss of a chance to expand the Tabang Plant's capacity to 3 MTPA and profit therefrom.

222 We will hear the parties on costs for these proceedings (namely, the present tranche, as well as Tranche 1 and Tranche 2), including any interlocutory or outstanding matters on which cost orders are required.

Quentin Loh
Judge of the Appellate Division

Vivian Ramsey
International Judge

Anselmo Reyes
International Judge

Francis Xavier s/o Subramaniam Xavier Augustine SC, Disa Sim, Chia Xin Ran Alina, Tng Sheng Rong (Tang Shengrong), Ang Tze Phern, Edwin Tan, Foo Xian Fong, Timothy Chan, Tracy Gani and Zheng Yirong (Rajah & Tann Singapore LLP) for the plaintiffs; Davinder Singh s/o Amar Singh SC, Jaikanth Shankar, Tan Ruo Yu, Tan Mao Lin, Irina Golovkovskaya, Darren Low, Rajvinder Singh Chahal and Amarpall Singh (Davinder Singh Chambers LLC) for the defendants.