PUBLIC UTILITIES COMMISSION OF SRI LANKA

FAIRNESS IN RISK ALLOCATION AND COST PASS THROUGH OF IPP PPAs

Power Purchase Agreements of two combined cycle IPP PPAs, AES Kelanitissa (Private) Limited and West Coast Power (Private) Limited were studied under this study on risk allocation and cost pass through.

1. Introduction

This report is prepared under a study on fairness in risk allocation and cost pass through of IPP PPAs, as a corporate plan activity planned for year 2014**.** A follow up activity to provide policy advice based on the findings of this task is planned for year 2015. The primary objective of the study is reduction in the electricity generation cost of Sri Lanka, in the long-run. At the moment generation cost contributes to more than 80% of the total cost of supply of electricity.

The purposes of the study are to;

- Review few Independent Power Producer (IPP) Power Purchase Agreements (PPAs) selected on the basis of their term of the agreement,
- Identify the areas where risk allocation and benefits are not in favor of Ceylon Electricity Board,
- Propose recommendations for amendments.

In the following sections of the report we have listed identified issues of the agreements and recommendation for re-negotiation.

1.1 Selected IPP PPAs

Selected IPP PPAss for the study are;

AES Kelanitissa (Private) Limited

Signed between THE CEYLON ELECTRICITY BOARD (CEB) and AES KELANITISSA (PRIVATE) LIMITED (Company) on 5th of June 2000 at Colombo in Sri Lanka. The agreement is build-own-operate-transfer contract and will be terminated in 2023.

This plant is a combined cycle power plant with a net dependable capacity of 163,150 kW.

West Coast Power (Private) Limited

Signed between THE CEYLON ELECTRICITY BOARD (CEB) and WEST COAST POWER (PRIVATE) LIMITED (Company) on 10th of January 2007 at Colombo in Sri Lanka. The agreement is build-own-operate-transfer contract and will be terminated in 2032.

This plant is a combined cycle power plant with a net dependable capacity of 270,000 kW.

The details of each ambiguous/ biased clause of each PPA is described in the following sections.

2. AES Kelanitissa (Private) Limited

2.1 Supply to the Company

Clause 6.1.3 (i)

Electrical energy from the CEB System at 33kV (subject to the 1MVA limit set out in Clause 5.11.2) when required by the Company to Start-Up the Facility at the Interconnection Point for 33kV Transmission Line. Such amounts of energy shall be supplied and charged to the Company by CEB and payable by the Company ***on the same terms and conditions (including tariff) applicable to the supply of electrical energy at 33kV by CEB to CEB's industrial consumers*** *at the time of such supply*

Comment

CEB, as a practice charge power generators at General purpose rate. But according to the particular clause above CEB should supply power to facility at industrial tariff rates which causes a revenue loss.

2.2 Water Supply

Clause 6.1.9

Unless otherwise specified in this Clause 6.1, throughout the Operational Period CEB shall at its sole cost and expense:

from the Day occurring one hundred and eighty Days prior to the Scheduled Combined Cycle Operation Date until expiry of the Operational Period ***maintain the Water Intake Facilities and the Water Connection Facilities and deliver to the River Water Interconnection Point a supply of River Water***

Comment

It is usually the practice of IPPs to include all their costs to the capacity charge but charge some of the costs as the energy charge/variable operation and maintenance charge. Thus the purchaser ending up paying some costs twice.

Similarly as per this clause CEB may be paying for water intake construction twice.

since water supply is built and maintained by CEB any costs relate to building and maintaining of water intake facility shouldn't be included in Capital Cost Recovery Rate, Variable Operation and Maintenance Rate or any other cost recovery rate.

2.3 Fuel Supply

Clause 6.4.1

Company shall not be in breach of its obligations under this Clause 6.4.1 if it fails to comply with the foregoing as a result of a breach by CPC of its obligations under the Fuel Supply Agreement or Force Majeure (as defined in the Fuel Supply Agreement) affecting the supply of Fuel thereunder

Comment

Full risk of fuel supply is with CEB. Agreement between Ceylon petroleum Corporation (CPC) and the Company is to supply fuel for the facility to operate. It is part of its own supply chain and any party breaching that contract is not an issue with CEB. Company should take care of its own supply chain.

CPC and CEB being state owned organizations IPP is trying to pass the risk of breach of contract by CPC to CEB. But since both CPC and CEB are two separate organizations managed by two different managements, it is not fair to pass the mismanagement of one organization to the other through this PPA.

2.4 Available Capacity and Dispatch

Clause 6.5.1 (ii) (e)

the Company shall not be in breach of its obligations under Clause 6.2 and Clause 6.5.1(i):

(e) where arising as a consequence of a Shortfall (as defined in the FSA) or a breach by CPC or the Government of their respective obligations under the FSA and the Implementation Agreement; or

Comment

Described in previous paragraph also, the Company should take care of its supply chain and make sure availability is maintained.

Clause 6.5.1 (ii) (f)

the Company shall not be in breach of its obligations under Clause 6.2 and Clause 6.5.1(i):

(f) where such breach is due to a Forced Outage; or

Comment

Company is paid a sufficient Operation and Maintenance charge and it is the obligation of the Company to maintain the facility at good condition with necessary investments and supply firm power to CEB therefore not maintaining the availability due to forced outage is a breach of contract.

Clause 6.5.1 (ii) (i)

the Company shall not be in breach of its obligations under Clause 6.2 and Clause 6.5.1(i):

*(i) where due to an **Availability Dispatch Shortfall**;*

Comment

Company should maintain its stocks (fuel and other) sufficient for it to adhere to any dispatch instructions (within declared availability) even though CEB's best estimate dispatch instruction is lower than the actual instruction.

Clause 6.5.1 (iii) (a)

(iii) during the Operational Period by 1200 Hours on each Day, the Company shall issue an availability declaration ("Availability Declaration") in respect of each Hour of the next Day to declare the Facility's Available Capacity stating the kW output of the Facility at Reference Conditions

*(a) any **Availability Declaration may be amended by the Company prospectively at any time**;*

Comment

As per the above clause Company is able to amend the Availability Declaration in the last minute. Such changes of the Availability Declaration make dispatch plans less economical and more difficult to produce. Company has no risk of not achieving the Availability Declaration as it can change the Declaration at the last minute.

A penalty charge can be brought in if the Company changes the Availability Declaration after a specific agreed time.

Clause 6.5.2 (i) (ii) (iii)

*(i) **CEB shall give the Company notice of CEB's good faith best estimate of the Dispatch** of the Facility in MWh output for each Week in that Month and the next succeeding eleven Months for the aggregate Dispatch of the Facility for each such Month;*

*(ii) **CEB shall give the Company notice of CEB's good faith best estimate of the Dispatch** of the Facility in MWh output for such week and the succeeding three Weeks on a weekly aggregate basis;*

*(iii) **CEB shall give the Company notice of CEB's good faith best estimate of the Dispatch** of the Facility in MWh output, reactive power requirements and requirements for Start-Up for each Hour in such Day and for the next succeeding Day;*

Comment

Estimates can vary significantly with hydro conditions. Therefore Company should not expect the actual dispatch instructions to match with the estimate.

Clause 6.5.2 (v)

CEB shall indemnify the Company in respect of any demurrage charges incurred by the Company in accordance with the Fuel Supply Agreement as a result of Dispatch specified in Dispatch Instructions having differed from the anticipated level of dispatch indicated for such period

Comment

Demurrage should be borne by the Company. Company should plan for full dispatch of the plant.

Clause 6.5.4

unless the Parties agree, the Company shall not be required to operate the Facility in open-cycle mode following the Combined Cycle Operation Date

Comment

There can be situations where the plant is not operative in combined cycle mode but in open cycle mode in such situations system operator should be able to dispatch the plant in open cycle mode to ensure the security of supply therefore CEB should be able to do so at a different heat rate. Economic viability should be assessed to run the plant as a gas turbine with a lower startup cost for peaking purpose.

2.5 Payment in Dollars

Clause 7.4.2

7.4.1 Any US Dollar payment due to the Company under this Agreement (each such payment being a "Required US$ Amount") shall be paid to the Rupee Conversion Account in Rupees in an amount calculated at the Reference Exchange Rate.

7.4.2 ***As soon as practicable following receipt of any Rupee amounts in accordance with Clause 7.4.1, the Company shall convert*** *(or shall cause the Company Nominated Bank to convert), subject to obtaining all necessary Governmental Approvals in respect of such receipt and/or conversion such Rupee amounts into US Dollars at the Reference Exchange Rate (such amount of US Dollars received by the Company after deduction of any payments by the Company of commissions and bank charges incurred at normal commercial rates by the Company in connection with such conversion ("Commissions") being the "Converted US$ Amount"). The Company shall as soon as practicable*

following such conversion notify CEB of the Reference Exchange Rate, the amount of any Commissions and the Converted US$ Amount in respect of such conversion.

Comment

The conversion date of Rupees to Dollars is mentioned as '*As soon as practicable following receipt of any Rupee amounts'.* That doesn't specify an exact date of conversion thus CEB is exposed to exchange rate risk. If exchange rate is moving unfavorable to CEB a delayed conversion will cost them more. Further to the exchange rate risk, not knowing the exact date of conversion may prevent CEB effectively managing their exchange rate risks.

Company may convert the Rupees into Dollars as and when they want but CEB should not be responsible for any exchange rate variation after CEB deposit the Rupee amount in the *Rupee Conversion Account*

2.6 Company Liquidated Damages Payable for Non Achievement of Performance Tests, Dispatch Instructions and Target Availability

Clause 7.6.2

the Facility does not:

(i) comply with the Dispatch requirements set out in a Dispatch Instruction; or

(ii) achieve the Adjusted Target Availability in any Contract Year,

and the Company becomes liable to pay liquidated damages to CEB pursuant to Paragraphs 9.11, 9.12 and 9.13 of Schedule 9 (Capacity Charge and Energy Charge), respectively, the Company shall pay to CEB, as liquidated damages, the relevant amount in Rupees calculated in accordance therewith and ***such liquidated damages will be deducted from the Energy Charge payable to the Company in the next Monthly Invoice or from the Energy Charge for such subsequent Months*** *as to secure their payment at the earliest opportunity.*

Comment

If the plant is not dispatched in subsequent months there will not be any Energy Charge to CEB. Therefore CEB will not be able to realize the payment until an Energy Charge is invoiced. Liquidated Damages should be deducted from Capacity Charges as it is paid every month.

The reason why IPPs do not favor any deduction from their Capacity Charge is that debt service and return to shareholders are promised through the Capacity Charge. Deductions from the Capacity Charge may cause reduction of shareholder returns.

2.7 Corporate Taxes

Clause 8.4.1/8.4.2

8.4.1 CEB shall, pursuant to Clause 8.4.3, throughout the Term reimburse all Corporate Taxes (other than Payable Taxes) paid or incurred by the Company (or charged to the Company by any party directly engaged by the Company in connection with the Project) together with the amounts specified in Clause 8.4.2.

8.4.2 In the case of any Corporate Taxes (other than Payable Taxes) paid or incurred by the Company during the Construction Period (or charged to the Company by any party directly engaged by the Company in connection with the Project), ***CEB shall also reimburse to the Company all costs incurred by the Company on reasonable commercial terms in financing such payments including all commitment fees, guarantee fees, commissions, foreign exchange costs and interest on borrowed funds*** *from the date of such financing until the date of reimbursement by CEB pursuant to Clause 8.4.3.*

Comment

Reimbursement of all fees aforesaid is not the international best practice.

Corporate taxes are paid before equity providers of the company get their share, therefore Company should keep provisions for future tax payments related to each month out of the returns to equity of the same month. So there can't/ shouldn't be any financing costs for taxes. In the case of any Corporate Taxes paid or incurred by the Company during the Construction Period, there may be a financing cost as there is no cash inflow to the Company except in the Open Cycle Operation Period (is in the Construction Period)

Clause 8.4.4

If there is a change in Payable Taxes which results in the aggregate net liability of the Company *(or the liability of any party directly engaged by the Company in connection with the Project, to the extent such liability of such party is borne by the Company) in relation to such Payable Taxes increasing in excess of US$100,000,* ***CEB shall pay to the Company an amount equal to such excess.***

Comment

Changes in payable taxes are beyond the control of CEB. The Company through this clause has eliminated the risk of any tax changes and secured its return.

2.8 Consequences of Change in Law Event

Clause 9.2.1

If, from the date of this Agreement:

(i) the effect of one or more ***Change in Law Events is to increase the costs of a capital cost nature*** *paid or incurred by the Company (including any increase in costs of a capital cost nature charged to the Company by any party directly engaged by the Company in connection with the Project) during any Change in Law Period by more than US$75,000; or*

(ii) the net effect of one or more ***Change in Law Events is to increase the Recurrent Costs paid or incurred*** *by the Company (including any increase in Recurrent Costs charged to the Company by any party directly engaged by the Company in connection with the Project) in any Change in Law Period by more than US$25,000,*

the ***Parties shall agree on an equitable adjustment to the Capacity Charge and/or Energy Charge so that the Company shall be in no better or worse a financial position*** *in respect of such costs in excess of the threshold amount specified in Clause 9.2.1(i) and (ii) or CEB shall pay to the Company any such excess amounts in accordance with an invoice delivered by the Company in accordance with Clause 8.1.1(vi) (together with all costs incurred by the Company on reasonable commercial terms in financing such excess payments including all commitment fees, guarantee fees, commissions, foreign exchange costs and interest on borrowed funds from the date of such financing until the date of reimbursement by CEB).*

Comment

Changes in law are beyond the control of CEB. The Company through this clause has eliminated the risk of over spending and fixed or variable cost as a result of a Law change thus secured its rate of return.

The benefit of any capital cost reduction due to a change in law is not transferred to CEB.

2.9 Liabilities and Indemnities

Clause 10.1

Company Delay Charge

If an Operation Date has not occurred on or before the relevant Scheduled Operation Date the delay charge to be paid by the Company in respect of delay under Clause 5.10.4 ("Company Delay Charge") shall be a sum in liquidated damages (which shall be the limit of the Company's liability to CEB in respect of such delays and such delays shall not entitle CEB to terminate this Agreement in connection therewith other than pursuant to Clause 13.1.2) calculated as follows:

10.1.1 up and until the Open Cycle Operation Date, US Dollars twenty thousand per Day or part Day after the Scheduled Open Cycle Operation Date up to a ***limit not exceeding US Dollars one million two hundred thousand;***

10.1.2 up and until the Combined Cycle Operation Date, US Dollars forty-five thousand per Day or part Day after the Scheduled Combined Cycle Operation Date, up to a ***limit not exceeding US Dollars two million seven hundred thousand;***

Comment

Company delay charges are paid as a per day charge, but it is limited by a ceiling after reaching that ceiling there is no incentive for the Company to complete the work as soon as possible. Therefore this charge should not be limited by a ceiling.

2.10 Insurance by the Company

Clause 11.3.1 (ii)

Minimum Insurance to be maintained by the Company

(ii) insurance against the loss of revenue resulting from breakdown, damage or destruction during the Operational Period;

Comment

It is Company's responsibility to maintain the plant as per the technical requirements and prevent any avoidable breakdowns and damages. As per the above clause if the company is going to maintain an insurance against the loss of revenue resulting from breakdown, damage or destruction, the premium of that cover cannot be recovered through capacity charge.

2.11 Amendments

Clause 15.5

This Agreement may only be amended or varied by the written agreement of both Parties.

Comment

The procedure of amending the agreement is not clear, authorized person to sign for the amendment is not mentioned.

2.12 Available Capacity

Schedule 8 - Paragraph 8.2.1

The actual Available Capacity for any one Hour (AAh) shall be determined according to the following provisions:

8.2.1 subject to Paragraphs 8.2.2 and 8.2.3, for each Hour of the Operational Period, AAh shall be ***the lesser*** *of:*

(a) ***the lowest declared Available Capacity*** *for that Hour in the prevailing Availability Declaration or the declared Available Capacity determined under Clause 6.5.1(vi), expressed in kW; and*

*(b****) the lowest achieved kW output*** *(adjusted to Reference Conditions) during that Hour* ***if lower than ninety seven percent of the kW output required under a Dispatch Instruction*** *provided that if the variations in the CEB System voltage and/or frequency levels, at any time during such Hour, exceed the limits specified in Paragraph 5.5.2 of Schedule 5 (Minimum Functional Specification) ("CEB System Problem"), the kW output level specified in any prevailing Dispatch Instruction shall, for that Hour, and for each subsequent Hour during which such CEB System Problem continues, be deemed to be zero;*

Comment

If the company is given a dispatch instruction lesser than the declared availability for an hour, it should supply exactly or more than the dispatch instruction given to them. But according to above condition the company can supply 97% of the dispatch instruction and still claim for the higher declared availability of the plant for that hour.

It can be argued that if the dispatch instruction is same as the availability declaration, a tolerance of 3% is logical.

Schedule 8 - Paragraph 8.2.3

for each Hour of the Operational Period during times of (i) Sri Lanka Force Majeure affecting the Company's ability to generate energy at the Facility, (ii) Sri Lanka Force Majeure affecting CEB's ability to supply to or receive energy from the Facility, (iii) prior to the Conversion Date, Non-Sri Lanka Force Majeure affecting CEB's ability to supply to or receive energy from the Facility, or (iv) an ***Availability Dispatch Shortfall****, AAh shall be the lesser of:*
(a) A_{FMV}*;*

(b) A_{FMC}*;*

(c) the applicable value for Net Dependable Capacity for that Hour; and

(d) the lowest Available Capacity level indicated in a Firm Maintenance Programme for that Hour, as such programme may be adjusted pursuant to Clause 6.6.9;

Comment

Availability Dispatch Shortfall as described above in Clause 6.5.1 (ii) is not an obligation of CEB but an obligation of the Company. In a situation where Company is unable to supply its power to its maximum capacity because Company has only planned its supplies based on the CEB's best estimate on energy requirement (actuals can differ from estimates due to various practical reasons), CEB should not be penalized. It is Company's responsibility to supply energy to its full capacity and plan for the supplies.

Therefore the actual Available Capacity (AA_h) in Availability Dispatch Shortfall should not be determined under this paragraph. Should be treated as normal and determined under paragraph 8.2.1

Further the actual Available Capacity (AA_h) cannot be more than the addition of A_v and A_{FMR} (defined below)

Therefore the values stated above in (a) and (b) should be limited according to the equation given below.

$A_{FMV/FMC} = A_v +$ (equal or less than **one**) X A_{FMR}

Where:

Av is the lowest declared Available Capacity

A_{FMR} is as explained in paragraph 8.2.4 (given below)

(i) pursuant to Clause 12 (a) the Company declares Sri Lanka Force Majeure, or (b) prior to the Conversion Date, CEB declares Non-Sri Lanka Force Majeure, or (c) CEB declares Sri Lanka Force Majeure; or

(ii) an Availability Dispatch Shortfall occurs,

the Parties shall within seven Days of such declaration meet to try to ***agree upon the reduction in Available Capacity (A_{FMR}) as a result of the circumstances referred to in Paragraphs (i) and (ii)*** *above.*

2.13 Target Availability

Schedule 8 - Paragraph 8.5.3

two Months prior to the start of any Contract Year, the initially ***agreed Target Availability for such Contract Year given in Paragraph 8.5.2 may be adjusted by the Company by up to two percentage points****, provided that the arithmetical average of the Target Availability for each Contract Year,*

calculated over the Combined Cycle Operational Period, shall be at least ninety two percent. There shall be no retrospective adjustment of the Target Availability.

Comment

Rational for the allowance of 2% change for the Target Availability is not clear.

Schedule 8 - Paragraph 8.6

For the purpose of calculating the liquidated damages for non-achievement of the Target Availability for the Open Cycle Operational Period (TAoc) and the ***Target Availability for any Contract Year (TAy) the respective Target Availability's shall be reduced to take account of the following****, such reduced Target Availability being the "****Adjusted Target Availability****":*

(a) ***Non-Sri Lanka Force Majeure affecting the Company's ability to generate energy*** *at the Facility;*

Comment

The risk of Non-Sri Lanka Force Majeure affecting the Company should be borne by the Company for the reason that Company's equity rate of return is supposed to compensate for the risk of Non-Sri Lanka Force Majeure affecting the Company.

2.14 Energy Charges

Schedule 9 - Paragraph 9.8

Heat Rate

Comment

Predetermined heat rates are used throughout the life time of the plant, but there is a fair chance of varying the actual heat rate from predetermined values. Therefore a provision should be in place to amend the heat rate subsequent to a performance test.

2.15 Liquidated Damages in relation to the NDC

Schedule 9 - Paragraph 9.11

L is the level of the damages for such reduced output, which in the case of:

- *the open cycle Performance Test shall be Rs 500 per kW; and*
- *the combined cycle Performance Test shall be Rs 500 per kW.*

Comment

Rs. 500 per kW seems inadequate/ too low. Liquidated damages for the reduction in NDC should be matched with the replacement cost of additional capacity (marginal capacity cost) to the system. But the capacity cost paid to the Company is reduced proportional to the reduction in NDC.

2.16 Liquidated Damages for non-achievement of Dispatch Instructions

Schedule 9 - Paragraph 9.12.1

Subject to Paragraph 9.12.2, if during the Open Cycle Operational Period or the Combined Cycle Operational Period the actual achieved kW output of the Facility (adjusted to Reference Conditions) ***is below ninety seven percent of the kW output required in a Dispatch Instruction****, and if such an event occurs more frequently than the threshold provided in this Paragraph 9.12, then the Company shall pay CEB a sum in liquidated damages*

Comment

The rational for 3% tolerance is not clear.

Schedule 9 - Paragraph 9.12.2

The Company shall have no liability under Paragraph 9.12.1 where the reason for the actual achieved kW output of the Facility (adjusted to Reference Conditions) being below ninety seven percent of the kW output required by the relevant Despatch Instruction is due to:

(i) ***Force Majeure; or***

(ii) breach by CEB of its obligations under this Agreement; or

(iii) a CEB System Problem; or

(iv) ***an Availability Dispatch Shortfall****.*

Comment

Risk of Force Majeure should be borne by the Company for the same reason discussed before in this report.

Availability Dispatch Shortfall is a matter Company should take care of not an obligation of CEB.

2.17 Liquidated Damages for not achieving the Target Availability

Schedule 9 - Paragraph 9.13

*If the **Actually Achieved Annual Availability is more than one percent less than the Adjusted Target Availability** then the liquidated damages payable by the Company*

Comment

A tolerance of 1% is allowed for not achieving the Target Availability. But when the company is paid incentives for over achievement of the Target Availability no margin is considered. There is no rational for the 1% tolerance.

2.18 Consequence to Capacity Charge for Greater Availability during Scheduled Maintenance

Schedule 9 - Paragraph 9.14

Without prejudice to Paragraph 9.8 of this Schedule 9, if in respect of any Hour during the period of Scheduled Maintenance the Company declares the Available Capacity in an Availability Declaration to be greater than provided in respect of such period of Scheduled Maintenance under a Firm Maintenance Programme, then the Capacity Charge payable for such additional Available Capacity during that period of Scheduled Maintenance shall be calculated in accordance with Paragraph 9.7 of this Schedule 9 provided that the value of CCRoc or CCRcc (as applicable) stated in Annex A to this Schedule 9 and used in such calculation shall be:

***9.14.1 fifty percent, if such additional Available Capacity is not as a result of a request from CEB**; and*

***9.14.2 one hundred and fifty percent, if such additional Available Capacity is as a result of a request from CEB**.*

Comment

Since CEB prepares its dispatch plans taking into consideration the scheduled maintenance of the plant, any additional availability is of no use to CEB unless CEB is unable to supply the demand in the same period.

Therefore **paying any fraction of the capacity charge for not requested availability is not recommended**. Company is not required to supply more than the figure given under Firm Maintenance Programme.

If CEB is unable to cater for the demand in the scheduled period of maintenance, CEB may **request the company to declare in addition** to the figure given under Firm Maintenance Programme, and then the **Company has the right to earn 100% of the capacity charge, not 150%.**

2.19 Minimum Insurance to be Maintained by the Company

Schedule 14 - Paragraph 14.2

2. Consequential Loss Following All Risks:

Cover*:*

Loss of revenue due to loss of capacity and/or loss of output as a direct consequence of loss of or damage to the Facility and caused by a peril insured under Paragraph 1 above.

4. Consequential Loss Following Machinery Breakdown:

Cover*:*

Loss of revenue due to loss of capacity and/or loss of output as a direct consequence of loss of or damage to the Facility caused by a peril insured under Paragraph 3 above.

Comment

As per the above paragraphs company should maintain an insurance cover for the loss of revenue as a direct consequence of loss of or damage to the Facility. But the **premium of this insurance cover should be solely borne by the company** (or by its capital lenders) because it is not CEB's obligation to ensure a specific rate of return to the Company.

2.20 Recommendations

It should be further evaluated in detail a breakdown of the capacity charges payable to the Company. Each component of the capacity charge should represent a cost to the Company other than the return on equity.

Some IPPs tends to refinance their loans at a lower rate after signing the PPAs at a higher rate. Those cases should be revisited and capacity charges should be adjusted accordingly. But the AES Kelanitissa has paid off the loan.

Recommendation of this study is as follows;

- The Company is expecting CEB to estimate their future energy requirement to plan their supply chain according to the CEB's good faith estimate, order fuel only required for the estimated generation. If any case Company is instructed to run the plant over and above the CEB's estimation, Company is not liable for any non-achievement of the dispatch instructions.

It should be further investigated whether Company is paid an interest on working capital, if yes then the Company is liable to run the plant not limiting to the CEB's estimate.

- Company has the ability to amend the availability declaration at any time according to this PPA, thus the Company mitigates risk of inability to fully dispatch the plant due to unforeseen circumstances.

- As per the various sections discussed above in this report we observe that Company has insulated itself from all the risks possible mainly from changes in Law, foreign exchange risk, cash flow risk, Force Majeure etc. and ensured a risk free cash flow to the equity.

  Therefore return on equity paid to the Company included in the capacity charge should be in par with the risk free rate.

- It is a minimum requirement of the insurance that company cover its *loss of revenue due to loss of capacity and/or loss of output as a direct consequence of loss of or damage to the Facility*.
  Above is another example of Company ensuring a firm cash flow.
  Regarding this insurance cover we recommend that Company should not be paid the premium of this specific insurance through the capacity charge.

- As discussed above in this report Company through this PPA is allowed margins (tolerance) before they are charged Liquidated Damages for non-achievement of dispatch instructions and target availability. We recommend that such margins should not be allowed.

- There is no provision in this PPA to recheck the performances of the plant by conducting a performance test and reestablish the heat rate. It is fair enough for both parties to reestablish the heat rate that is used to calculate the energy charge.

3. West Coast Power (Private) Limited

3.1 Supply to the Company

Clause 5.11 The Company's Electricity Requirements During the **Construction Period**.

5.11.1

The Company shall obtain its electricity requirements at voltages below and equal to 33kV, on application to the relevant CEB office as for ***any other industrial electricity consumer****.*

Comment

CEB, as a practice charge a construction site at General purpose rate. But according to the particular clause above CEB should supply power to facility at industrial tariff rates which causes a revenue loss.

6.1.3.

The CEB Shall supply to the Company electrical energy from the CEB System at 220kV at the Interconnection Point for the purpose of Strat-Up of the Facility. Such amounts of energy shall be supplied and charged to the Company by CEB and payable by the Company ***on the same terms and conditions (including tariff) applicable to the supply of electrical energy at 220kV by CEB to CEB's industrial consumers*** *at the time of such supply.*

Comment

CEB, as a practice charge power generators at General purpose rate. But according to the particular clause above CEB should supply power to facility at industrial tariff rates which causes a revenue loss

3.2 Available Capacity and Dispatch

Clause 6.5.1 (iii) (a)

(iii) during the Operational Period by 1200 Hours on each Day, the Company shall issue an availability declaration ("Availability Declaration") in respect of each Hour of the next Day starting the facility's Declared Available Capacity.

(a) any ***Availability Declaration may be amended by the Company prospectively at any time*** *provided the Availability Declaration for the current hour stands.*

Comment

As per the above clause Company is able to amend the Availability Declaration in the last minute. Such changes of the Availability Declaration make dispatch plans less economical and more difficult to produce. Company has no risk of not achieving the Availability Declaration as it can change the Declaration at the last minute. As recommended above in the AES section (2.4) financial penalties should be imposed.

3.3 Payment of Euro Components of Electricity Payments

Clause 7.4.1

Any Euro payment due to the Company under this Agreement (each such payment being a "Required EURO Amount") shall be paid to the Rupee Conversion Account in Rupees in an amount calculated at the Reference Exchange Rate.

Clause 7.4.2

***As soon as practicable following receipt of any Rupee amounts** in accordance with Clause 7.4.1, the Company shall convert (or shall cause the Company Nominated Bank to convert), in respect of such conversion of such Rupee amounts into Euro at the Reference Exchange Rate (such amount of Euro received by the Company after deduction of any payments by the Company of commissions and bank charges incurred at normal commercial rates by the Company in connection with such conversion ("Commissions") being the "Converted EURO Amount"). The Company shall as soon as practicable following such conversion notify CEB of the Reference Exchange Rate, the amount of any Commissions and the Converted US$ Amount in respect of such conversion.*

Comment

The conversion date of Rupees to Euro is not clearly defined. Therefore the Company can manipulate the process to get maximum profit.

As discussed under Section 2.5 of AES Kelanitissa, CEB is not responsible for the exchange rate variations after first payment of the Rupee amount in respect of any foreign payment.

3.4 Consequences of Change in Law Event

Clause 9.2.1 and 9.2.2

9.2.1

If, from the date of this Agreement:

*(i) the effect of one or more **Change in Law Events is to increase the costs of a capital cost nature** paid or incurred by the Company during any Change in Law Period by more than EURO 100.000; or*

*(ii) the net effect of one or more **Change in Law Events is to increase the Recurrent Costs paid or incurred** by the Company in any Change in Law Period by more than EURO 50,000.*

the Company shall provide the CEB with verifiable evidence of the increase and/or the CEB in its reasonable opinion agreeing that there has been an increase in such costs, the Parties shall agree on an equitable adjustment to the Capacity Charge and/or Energy Charge so that the Company shall be in no better or worse a financial position in respect of such costs in excess of the threshold amount specified in clause 9.2.1 (i) and (ii) or the CEB shall at its option pay to the Company any such excess amounts in accordance with an invoice delivered by the Company in accordance with clause 8.1.1. (iv).

9.2.2

If, in any Change in Law Period, the net effect of one or more Change in Law Events is to reduce the Recurrent Costs paid or incurred by the Company by more than Euro 50,000 the Parties shall agree on an equitable adjustment to the Capacity Charge and/or Energy Charge so that the Company shall be in no better or worse a financial position in respect of such costs in excess of the threshold amount specified in this clause 9.2.2 or the Company shall pay to the CEB an amount equal to the amount that such reduction exceeds Euro 50,000.

Comment

The benefit of any capital cost reduction due to a change in Law is not transferred to CEB. But the Company gets the compensation for any capital cost increase due to a change in Law.

3.5 Liabilities and Indemnities

Clause 10.1

Company Delay Charge

If an Operation Date has not occurred on or before the relevant Scheduled Operation Date the delay charge to be paid by the Company in respect of delay under Clause 5.10.4 ("Company Delay Charge") shall be a sum in liquidated damages (which shall be the limit of the Company's liability to CEB in respect of such delays and such delays shall not entitle CEB to terminate this Agreement in connection therewith other than pursuant to Clause 13.1.2 and 13.1.3) calculated as follows:

10.1.1

up and until the Open Cycle Operation Date, US Dollars twenty thousand per Day or part Day after the Scheduled Open Cycle Operation Date up to a ***limit not exceeding US Dollars one million two hundred thousand;***

10.1.2

up and until the Combined Cycle Operation Date, US Dollars forty-five thousand per Day or part Day after the Scheduled Combined Cycle Operation Date, up to a ***limit not exceeding US Dollars two million seven hundred thousand;***

Comment

Imposing an upper limit to Company delay charges will put limitations to the urgency of the Company to complete its works at its earliest.

3.6 Actual Available Capacity

Schedule 8 - Paragraph 8.2

The actual Available Capacity for any one Hour (AA_h) shall be determined according to the following provisions:

8.2.1 subject to Paragraphs 8.2.2 and 8.2.3, for each Hour of the Operational Period, AA_h shall be ***the lowest*** *of:*

(a) ***the declared Available Capacity*** *for that Hour: and*

(b) the Declared Available Capacity level indicated in a Firm Maintenance Programme for that Hour as such programme may be adjusted pursuant to clause 6.6.8; and

(c) the lowest achieved kW output for that hour if ***lower than 97% of the*** *kW output required under the Dispatch Instruction (as determined under the clause 6.8.12) provided that the instances in which the kW output during an Hour (determined under clause 6.8.12) is lower than 97 % of the kW output required under the Dispatch Instruction occurs concurrently with a CEB System Problem will not be taken into consideration for the purposes of this sub clause (c)*

Comment

With this condition the Company can escape with 97% output without being subjected to a penalty.

Schedule 8 - Paragraph 8.2.3

for each Hour of the Operational Period during times of Sri Lanka Force Majeure affecting the Company's ability to generate energy at the Facility, or affecting CEB's ability to receive energy from the Facility, AA_h shall be the lowest of:
(a) A_{FMV};

(b) NDC_{OC} or NDC_{CC}, as applicable and has the value stated in Table A2, Annex A of Schedule 9; and

(c) the Declared Available Capacity level indicated in Firm Maintenance Programme for that Hour, as such programme may be adjucted pursuant to clause 6.6.8;

Where,

$$A_{FMV} = A_V + \left(\frac{A_V}{NDC - A_{SLFMR}}\right) * A_{SLFMR}$$

A_V is the lesser of

(i) The Declared Available Capacity for that hour

(ii) the lowest achieved kW output for that hour if lower than 97% of the kW output required under the Dispatch Instruction (as determined under the clause 6.8.12) provided that the instances in which the kW output during an Hour (determined under clause 6.8.12) is lower than 97 % of the kW output required under the Dispatch Instruction occurs concurrently with a CEB System Problem will not be taken into consideration for the purposes of this sub clause (ii)

Comment

With this condition the Company can escape with 97% output without being subjected to a penalty.

3.7 Target Availability

Schedule 8 - Paragraph 8.5.3

two Months prior to the start of any Contract Year, the initially ***agreed Target Availability for such Contract Year given in Paragraph 8.5.2 may be adjusted by the Company by up to 5% percentage points****, provided that the arithmetical average of the Target Availability for each Contract Year, calculated over the Combined Cycle Operational Period, shall be at least ninety two percent. There shall be no retrospective adjustment of the Target Availability.*

Comment

Rational for the allowance of 5% change for the Target Availability is not clear.

3.8 Capacity Charges

Schedule 9 - Paragraph 9.7.2

$RCCR_Y$ Keeps increasing leading to a huge rupee component of the Capacity Charge calculated for a certain month.

3.9 Energy Charges

Schedule 9 - Paragraph 9.8

Energy Charge payment is calculated in accordance with a given formula which includes a pre-determined value for the **Heat Rate** which will be amended after the first year of the term.

Comment

It is ambiguous whether the amendment of the heat rate will result in an adjustment of previous energy charges paid to the Company, therefore it is recommended to reward the condition allowing CEB to gain any beneficial adjustment of already paid energy charges.

3.10 Liquidated Damages in relation to the NDC

Schedule 9 - Paragraph 9.11

L is the level of the damages for such reduced output, which in the case of:

- *the open cycle Performance Test shall be Euro 200 per kW; and*
- *the combined cycle Performance Test shall be Euro 300 per kW.*

Comment

Liquidated damages for the reduction in NDC should be matched with the replacement cost of additional capacity (marginal capacity cost) to the system. But the capacity cost paid to the Company is reduced proportional to the reduction in NDC.

3.11 Liquidated Damages for non-achievement of Dispatch Instructions

Schedule 9 - Paragraph 9.12.1

Subject to Paragraph 9.12.2, if during the Open Cycle Operational Period or the Combined Cycle Operational Period the actual achieved kW output of the Facility ***is below ninety seven percent of the kW output required in a Dispatch Instruction****, and if such an event occurs more than twenty times during the Open Cycle Operational Period or ten time during any Contract Year, then the Company shall pay CEB a sum in liquidated damages*

Comment

With this condition the Company can escape with 97% output without being subjected to a penalty. As discussed in the relevant section of the AES Kelanitissa above.

3.12 Liquidated Damages for not achieving the Target Availability

Schedule 9 - Paragraph 9.13

*If the **Actually Achieved Annual Availability is more than one percent less than the Adjusted Target Availability** then the liquidated damages payable by the Company*

Comment

A tolerance of 1% is allowed for not achieving the Target Availability. But when the company is paid incentives for over achievement of the Target Availability no margin is considered. There is no rational for the 1% tolerance.

3.13 Consequence to Capacity Charge for Greater Availability during Scheduled Maintenance

Schedule 9 - Paragraph 9.14 – Second para

Without prejudice to paragraph 9.8 of this Schedule 9, if in respect of any Hour during the period of Scheduled Maintenance the Declared Available Capacity is greater than the availability of the Facility for Dispatch provided in respect of such period of Scheduled Maintenance under a Firm Maintenance Programme, and if such additional available capacity is as a result of a request from the CEB, then the Capacity Charge payable for such additional available capacity during that period of Scheduled Maintenance shall be calculated in accordance with paragraph 9.7 of this Schedule 9 provided that the values of $ECCR_{OC}$ and $RCCR_{OC}$ in respect of Open Cycle Operation Period, or $ECCR_{CC}$ and $RCCR_{CC}$ in respect of Combined Cycle Operation Period (as applicable) stated in Annex A to this Schedule 9 and used in such calculation shall be one hundred and fifty percent of the applicable value in Annex A to this Schedule 9.

Comment

If CEB requests the company to declare in addition to the figure given under Firm Maintenance Programme, Company can earn the normal capacity charge (i.e. 100%), but allowing the Company to have 150% of its normal value is not reasonable.

3.14 Minimum Insurance to be Maintained by the Company

Schedule 13 – PART 2 – Operating period

2. Consequential Loss Following All Risks:

***Cover**:*

Loss of revenue due to loss of capacity and/or loss of output as a direct consequence of loss of or damage to the Facility and caused by a peril insured under Paragraph 1 above.

4. Consequential Loss Following Machinery Breakdown:

***Cover**:*

Loss of revenue due to loss of capacity and/or loss of output as a direct consequence of loss of or damage to the Facility caused by a peril insured under Paragraph 3 above.

Comment

As per the above paragraphs company should maintain an insurance cover for the loss of revenue as a direct consequence of loss of or damage to the Facility. But the **premium of this insurance cover should be solely borne by the company** (or by its capital lenders) because it is not CEB's obligation to ensure a specific rate of return to the Company.

3.15 Recommendations

Given the fact that PPA of AES Kelanitissa is an older one than that of West Coast, following statements can be made.

- Some of the discrepancies identified in the PPA of AES Kelanitissa are not there with the PPA of West Coast. It seems that CEB has monitored the implications of PPA of AES Kelanitissa and has put their efforts to correct those problems in West Coast PPA.

- However, still there are several instances where it seems that the PPA treats Company to get more advantage over CEB in an unfair manner. Such cases are pointed out in the analysis done under West Coast PPA.

- It should be investigated that the Company has renegotiated the rates of the loan and obtained a lower interest rate. If the Company has renegotiated for a lower rate of loan, it is recommended to renegotiate for a lower debt recovery rate with the Company.

- One of the most interesting points of this analysis is that the financial benefit taken by West Coast under its PPA is much higher than that taken by the AES Kelanitissa under its PPA. However a detailed analysis should be carried out to identify the Return on Assets paid to West Coast in terms of capacity charge.

- A comparison of capacity charges paid to AES Kelanitissa and West Coast power plants is given below, an extraction of the report on 'Sri Lanka: Electricity Supply Chain Analysis and Proposals for Revamping'

We show below (Table 2) the total estimated Capital Cost Recovery Rate (CCRR) for the two IPPs, as stated in their respective PPAs, as a measure of their respect unit investment costs. This cost is obtained by discounting the annual CCRR payments to allow for different profiling of charges over time. For this purpose, we have used a discount rate of 12% which reflects what might be considered a reasonable cost of capital for such a project.

Table 2 Total capital cost recovery rates compared

PV @ 12%	AES Kelanitissa	West Coast Power
Rs/kW	83,542	262,665
US$/kW	643	2,021

Source: PPAs and consultant calculations. Combined-cycle operation only. Paid CCRR represents total CCRR expressed in Rs/kW/year multiplied by target availability. Conversion to Rs/kW/year uses exchange rates of US$ 1 : Rs 130 and € 1 : Rs 175.

The implied capital cost for AESK is 643 US$/kW. This is at the bottom end of the range that we might expect from a comparison with published costs (see Table 3). However, the AESK PPA was signed 15 years ago and, since that date, capital costs for electricity generation have greatly increased. The average increase in capital costs for power generation since 2000 is estimated at 85%[13] which would imply a capital cost of 643 US$/kW in 2000 would be equivalent to 1,190 US$/kW at current prices, which would move this to the top of the range of external estimates.