



National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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No. NEPRA/R/ADG(Trf)/TRF-372/SSML-2016/1466-1468
January 24, 2022

Subject: Decision of the Authority in the matter of Tariff Modification Petition filed by Shahtaj Sugar Mills Limited (SSML) in respect of Generation Tariff dated January 02, 2017 (Case No. NEPRA/TRF-372/SSML-2016)


Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Annexure-I, II & III (19 Pages) in Case No. NEPRA/TRF-372/SSML-2016.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official Gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 within 30 days from the intimation of this Decision. In the event the Federal Government fails to notify the subject tariff Decision or refer the matter to the Authority for reconsideration, within the time period specified in Section 31(7), then the Authority shall notify the same in the official Gazette pursuant to Section 31(7) of NEPRA Act.

3. The Order part along with Annex-I, II & III of the Authority's Decision is to be notified in the official Gazette.

Enclosure: As above


24/1/22
(Iftikhar Ali Khan)

Secretary
Ministry of Energy (Power Division)
'A' Block, Pak Secretariat
Islamabad

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.

**DECISION OF THE AUTHORITY IN THE MATTER OF TARIFF MODIFICATION PETITION FILED BY SHAHTAJ
SUGAR MILLS LIMITED IN RESPECT OF GENERATION TARIFF DATED JANUARY 02, 2017**

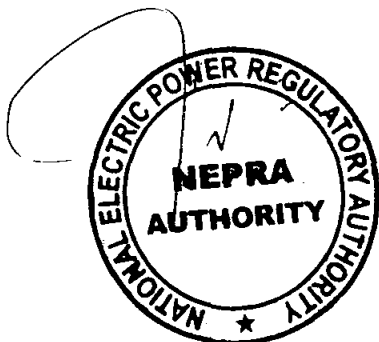
Introduction

1. Shahtaj Sugar Mills Limited ("SSML" or "Shahtaj" or "the Petitioner") vide letter dated July 10, 2021 submitted the review motion pursuant to Rule 16(6) of the NEPRA (Tariff Standards and Procedure) Rules, 1998 ("Tariff Rules") read together with Regulation 3(2) of the NEPRA (Review Procedure) Regulations, 2009 ("Review Regulations") for review of the tariff granted to SSML vide decision dated January 02, 2017 for its 32MW (Gross Capacity) New Bagasse Based Cogeneration Power Plant ("the Project") to be setup in district Mandi Bahauddin. Subsequent to filing of subject review motion, SSML vide letter dated July 29, 2021 requested to treat its above mentioned review motion as an application for modification of tariff.

Brief Background

2. SSML was granted the Generation License by NEPRA on November 11, 2016 to establish the Project. SSML vide letter dated November 10, 2016 opted for the upfront tariff determined by the Authority on May 29, 2013 (upfront tariff, 2013) which was granted to it vide decision dated January 02, 2017. Later, AEDB issued Letter of Support ("LOS") to SSML and NEPRA on December 26, 2017 approved the Energy Purchase Agreement ("EPA") to be signed between Central Power Purchasing Agency Guarantee Limited ("CPPAGL") and SSML.
3. In the subject petition, SSML stated that EPA could not be executed due to the decision of Cabinet Committee on Energy ("CCOE") in Case No. CCE-42/10/2017 conveyed on January 05, 2018 which, inter alia, provides that only those projects shall be implemented where either the Implementation Agreement ("IA") or EPA has been signed. According to the Petitioner, it filed the writ petition before Honorable Islamabad High Court ("IHC") in 2018 against the aforesaid decision of CCOE.
4. Later, the aforesaid decision of January 05, 2018 was modified by the CCOE vide decision taken in Case No. CCE-12/04/2019 dated February 27, 2019 and issued vide Power Division letter dated April 04, 2019. In the instant decision of CCOE, renewable energy projects were put in three categories. SSML was put in Category-I of the decision for which following was decided by CCOE:

"All those projects which have been granted LOS by AEDB will be permitted to proceed towards the achievement of their requisite milestones as per RE Policy 2006. However, if more than one year has elapsed since determination of tariff by NEPRA, the said tariffs will be reviewed by NEPRA to bring them



in line with the prevailing market conditions and rationalization of cost keeping in view consumer interest as well as subsequent determinations on the same technologies given by NEPRA. Such review shall include appropriate time extension to reach financial closing."

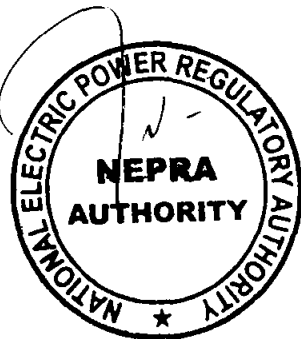
5. The Petitioner has stated in the subject petition that the decision of CCOE conveyed vide letter dated April 04, 2019 has been ratified by Council of Common Interest ("CCI") vide its decision dated August 06, 2020 as reflected in Alternative & Renewable Energy Policy, 2019 ("ARE Policy, 2019") duly notified in October, 2020. Section 5.4 of the ARE Policy, 2019 provides the following:

"Notwithstanding the expiry of the RE Policy 2006, the projects granted letters of intent/letters of support under the RE Policy 2006 before its expiry shall continue to be governed by the Cabinet Committee on Energy's (CCOE) decision in case number CCE-12/04/2019(V) (as amended from time to time) and shall be dealt with accordingly..."

6. SSML stated that the subject petition has been filed in light of the CCOE decision dated February 27, 2019 which has been ratified by CCI, as reflected in ARE Policy, 2019. SSML referred the decisions issued by NEPRA dated April 09, 2021 whereby the tariffs of 07 operational bagasse cogeneration projects were reviewed by the Authority in light of their Memorandum of Understanding ("MOU")/Master Agreements with CPPAGL and requested for the same modifications in its tariff. SSML further submitted that it reserves the right to take additional grounds and evidence at the time of the hearing, for which the Petitioner requests for the opportunity to present its case with supporting documentation, justification, and related evidence.

Proceedings

7. The Authority considered the subject petition and decided to hold a hearing on the matter. Individual notices of hearing were sent to stakeholders on September 23, 2021. Following issues were framed and approved for the hearing:
- Describe in detail the change in different parameters and corresponding tariff of SSML is requested, to meet the conditions given in the CCOE decision?
 - Whether the requested modified tariff fulfills the criteria of least cost, given the existing and upcoming generation in the system?
 - Any other relevant issue arising during the proceedings.



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8. The hearing was held on September 28, 2021 which was attended by the representatives of the Petitioner and CPPAGL. Post hearing, SSML submitted its comments on the points discussed during the hearing. Later, CPPAGL dated October 08, 2021 sent its comments on the matter. Those comments of CPPAGL were forwarded to SSML for its response. The Petitioner submitted its response on CPPAGL's comments on October 11, 2021. The relevant points as discussed during the hearing and commented upon by CPPAGL and the Petitioner are given below.

Describe in detail the change in different parameters and corresponding tariff of SSML is requested, to meet the conditions given in the CCOE decision?

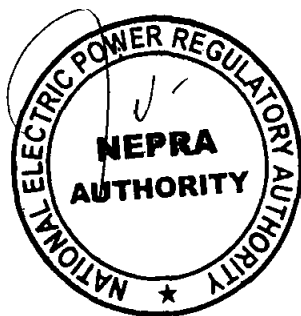
9. With respect to this issue, produced below is the summary of the relevant points raised by CPPAGL and response thereon as submitted by the Petitioner followed by the analysis and decision of the Authority.

A. New Tariff Determination

10. CPPAGL while referring to the decision of CCOE dated February 27, 2019 submitted that the request of the Petitioner to allow upfront tariff, 2013 in indexed form may be turned down and SSML be directed to file fresh tariff petition on cost plus basis pursuant to NEPRA Tariff Rules, 1998. SSML submitted that it is a wrong statement on part of CPPAGL that the upfront tariff, 2013 in the indexed form has been claimed, rather lower tariff with modifications approved by NEPRA on April 09, 2021 in case of 07 operational bagasse IPPs is being asked for. Additionally, SSML submitted that the technology of the Project has already been finalized and partially installed and because of the variation in the exchange rate from 101.60 PKR/USD to 170.73 PKR/USD, fresh petition and re-determination of tariff on cost plus basis would not be in the favor of the consumers. The Authority has analyzed the case in detail and considered that it would be in the interest of the consumers to modify the upfront tariff of SSML, primarily in view of inflation and exchange rate variations since the time upfront tariff, 2013 was determined. However, the Authority is of the view that tariff modifications in the instant matter shall not only be restricted to the Authority's decisions issued on April 09, 2021 in case of operational bagasse projects, as the same was done in light of MOUs/Master Agreements. Instead, the Authority has decided to modify the upfront tariff of SSML to bring its different parameters in line with the approvals currently being allowed by NEPRA.

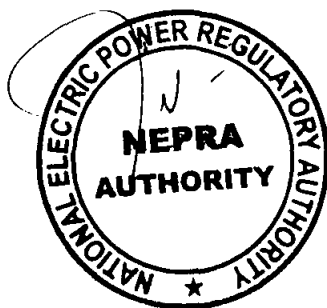
B. Efficiency

11. CPPAGL submitted that upfront tariff, 2013 provides for the efficiency of 24.5% (net LHV) whereas the Authority determined 28.37% (net LHV) efficiency in its upfront tariff 2017. CPPAGL highlighted that the



project cost remained same in 2013 and 2017 upfront tariffs, however, there was upward revision of around 4 percentage points in efficiency in upfront tariff, 2017. CPPAGL also referred the example of various small sized steam turbine-based power plants like Fatima Energy and FPCL where the Authority allowed 29.21% (net LHV) and 29.24% (net LHV) efficiency respectively for the life of the projects. Stating above, CPPAGL recommended that the minimum efficiency benchmark may be set by the Authority at 28.37% (net LHV) with the direction that heat rate test to be conducted by the Engineer (to be appointed under section 2.6 of the EPA) in the presence of power purchaser according to ASME code such as PTC 6. The reference Fuel Cost Component ("FCC") may be revised downwards only based on said heat rate test results at Commercial Operations Date ("COD"), however, no adjustment in FCC be allowed in case heat rate exceeds to the said minimum efficiency benchmark.

12. SSML responded that it has already incurred up to 61% of its project cost which includes boiler, turbo generators, and other machinery and allied equipment based on the parameters required under upfront tariff, 2013 which in the case of SSML was notified by the Federal Government. Shahtaj apprised that it has already selected and installed a 67-bar boiler; efficiency of which cannot be more than 24.5%. The higher efficiency benchmark requires additional cost to be incurred as in the case of Fatima Energy Ltd., the per MW cost was approx. USD 1.84 million whereas in the case of SSML, the upfront tariff is determined based on the per MW cost of USD 0.9795 million. SSML stated that the net efficiency is a combination of the crushing period and non-crushing period, hence, the heat rate test has its practical limitations which needs to be considered. Additionally, SSML submitted that CPPAGL while negotiating the tariff has not proposed any such heat rate test with regard to bagasse-based power projects already in operation.
13. The Authority has considered the above submissions and is of the view that the parameters of project cost and efficiency are directly linked with each other. CPPAGL has mentioned and compared the efficiency of different tariff cases without mentioning/comparing the project cost approved in those cases. Even for the upfront tariff, 2017, CPPAGL has ignored that EPC cost in that tariff was relatively higher than upfront tariff, 2013 in terms of USD. Further, the impact of exchange rate was not taken into account by CPPAGL while comparing the project cost of these two upfront tariffs. In view thereof, the Authority hereby decides to allow the efficiency of 24.5% to Shahtaj. Further, the Authority decided that heat rate test shall be conducted by an Independent Engineer at the time of COD of the Project, in the presence of NEPRA professionals as observer. The FCC shall be revised downwards only based on said heat rate test results, however, no adjustment in FCC shall be allowed in case heat rate exceeds to the efficiency benchmark of 24.50%. Additionally, the Authority has decided that capacity test shall also be conducted at the time of COD to ascertain the approved auxiliary consumption of 8.5%. In case of auxiliary



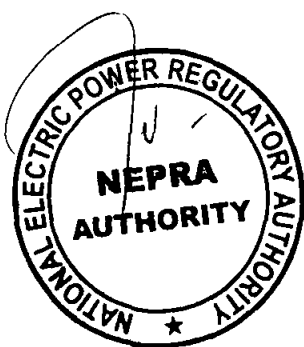
consumption lower than the approved limit of 8.5%, necessary adjustments in all the applicable components of tariff shall be made, however, no adjustment shall be allowed for auxiliary consumption higher than 8.5%.

C. Annual Plant Factor

14. CPPAGL submitted that the Annual Plant Capacity Factor ("APCF") may be considered as 55% as determined in bagasse upfront tariff, 2017. To support this point, CPPAGL submitted data showing the APCF achieved by a number of operational bagasse projects. Additionally, CPPAGL submitted that all energy offered to the extent of APCF shall be taken on priority basis after which the same may be allowed to be procured as per the principles of economic dispatch. Further, CPPAGL submitted that energy beyond APCF be allowed the payment of only the variable component of tariff.
15. SSML submitted that upfront tariff, 2017 was never adopted by any of the projects, therefore, setting APCF more than 45% for the projects that opted for upfront tariff, 2013 would not be sustainable. The Petitioner also stated that higher APCF as mentioned by CPPAGL was only limited to a few operational projects which have more sugar mills and it is impossible for SSML to achieve the 45% benchmark. Further, the Petitioner requested that the despatch priority up to the APCF, as given in upfront tariff, 2013, be remain the same. Additionally, SSML submitted that tariff with respect to energy beyond 45% was allowed the variable cost + 30% of the fixed cost to operational bagasse projects whose tariffs were reviewed on April 09, 2021, and the same be allowed to SSML.
16. The Authority has considered the above submissions and is of the view that the risk of resource is the responsibility of the producer in the upfront tariff, 2013. From the data as submitted by CPPAGL, it was noted that though few projects are comfortably meeting or exceeding the specified annual plant factor of 45%. However, there are projects which were not able to achieve 45% in some years and as a result would not have received the specified revenues. In view thereof, the Authority hereby decides to allow the annual capacity factor of 45% to Shahtaj. SSML would be given dispatch on priority basis up to the plant factor of 45% and for energy beyond 45%, the dispatch would be purely on the basis of economic merit order. For energy beyond annual plant factor of 45%, the FCC and variable O&M only shall be admissible.

D. Project Cost

17. After detailed consideration, the Authority has decided to allow the same cost (EPC, Other Project Cost, and Financing Fee & Charges) to the Petitioner as was approved in upfront tariff, 2013. However, the



approved amount of the Interest during Construction has been changed, basis of which is explained in the following section. The breakup of the project cost being approved is given hereunder:

Project Cost	USD Mill / MW
EPC	0.8112
Other Project Cost	0.0695
Financing Fee & Charges	0.0176
Interest during Construction	0.0708
Total	0.9691

18. The approved project cost shall be adjusted the time of COD of the Project as per the mechanism given in the Order part of this decision.

E. Cost and Servicing Tenor of Financing

19. Upfront tariff, 2013 was worked out and approved based on debt to equity ratio of 80:20. The provision of only commercial local financing was given in the upfront tariff, 2013. The margin over KIBOR of 3% was approved for debt servicing tenor of 10 years, out of tariff control period of 30 years.
20. Debt to Equity Ratio: NEPRA Benchmarks Guidelines, 2018 provides that the debt to equity ratio for all renewable power projects will be 80:20. Accordingly, the Authority has decided not to change the allowed debt to equity ratio of 80:20 as was approved in the Shahtaj's tariff.
21. Cost & Mix of Financing: The tariff given to SSML was approved on commercial local loan at the cost of KIBOR + margin of 3%. CPPAGL submitted that SSML be asked to avail the financing under State Bank of Pakistan ("SBP") Scheme before availing the commercial local loan. Shahtaj submitted that it is already in discussion with its lenders regarding the said financing and is trying its best to achieve the same and any benefit thereto would be passed onto the consumer through CPPAGL. The Authority has considered above and decided to approve the tariff of Shahtaj based on 50% financing under SBP Scheme (maximum limit as given in that Scheme) and 50% on commercial local loan. For SBP financing, the rate of 6%, as stated in the SBP Scheme, is approved. For commercial loan, the cost at the rate of KIBOR + 2.25%, as given in the NEPRA Benchmarking Guidelines, is approved. In case the petitioner is not able to secure portion of financing under SBP scheme then that portion shall be adjusted with conventional local financing at the time of its COD. However, the petitioner shall have to prove through documentary evidence issued by SBP/commercial bank that it exhausted the option of availing 50% financing under SBP scheme before



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availing commercial local loan for that part. Further, the Authority has decided that in case the Petitioner shall be able to negotiate better financing cost with its lenders then the savings (positive difference between allowed cost and negotiated cost) shall be pass on to the consumers as per the mechanism given in the order part of this decision.

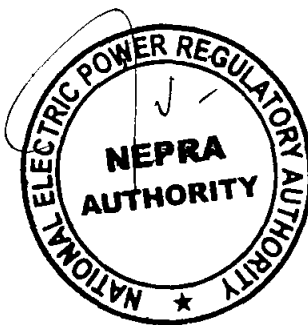
22. Tenor of Debt Servicing: The debt servicing tenor of SBP loan shall be 10 years (as stated in the SBP Scheme). For commercial local loan, the debt repayment period of 15 years has been approved.

F. Return on Equity

23. In the upfront tariff, 2013, the Return on Equity ("ROE") of 17% was approved by the Authority. That ROE was approved based on USD, i.e. variations in exchange rate with respect to change in parity on quarterly basis was allowed. CPPAGL submitted that equity being in local currency (PKR), the ROE be fixed at 10% to 12% without dollar or any other indexation and there should be claw back mechanism to share the profits earned by the company beyond that limit. SSML responded that ROE be modified in line with the reductions made in the operational bagasse IPPs. The Authority has considered the above submissions and decided to change the ROE from earlier approved 17% (USD based) to 12% (USD based). The variations in the ROE component shall be allowed variations due to change in exchange rates on yearly basis as per the mechanism given in the Order part of this decision. After five years from the date of COD, the ROE at the rate of 17% (PKR based at Rs. 168/USD) shall be admissible to Shahtaj, which shall remain applicable till the end of the tariff control period. The ROE component at 17% (PKR based at Rs. 168/USD) shall be computed based on approved equity amount in COD adjustment decision. It is to be noted that the computation of ROE in this decision has been made while considering the cash flows on monthly basis such that annual ROE comes out at the level of specified returns. Further, the Authority has decided to claw back the profits, when exceed beyond the specified limit, as per the term given in the Order part of this decision.

E. Operation and Maintenance Cost

24. In the upfront tariff 2013, the per annum O&M cost was allowed on the basis of 3.25% of the approved EPC cost. This was bifurcated into 40:60 fixed and variable O&M cost components respectively. The variable portion of the O&M was further divided into 75% in foreign portion and 25% in local portion, with applicable indexations on quarterly basis.



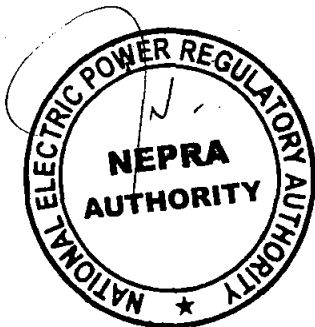
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25. CPPAGL submitted that the O&M cost be capped at 3% of EPC cost in line with bagasse upfront tariff 2017. Further, it submitted that in case the company intends to hire 3rd party as O&M contractor then the same may be hired through bidding process while following NEPRA Selection of O&M Contractor Guidelines 2021. Furthermore, CPPAGL commented that reference O&M component should be revised every 3-5 years so that indexation may not lead to extraordinary gains. Moreover, the proportion of fixed and variable (foreign & local) components also required to be rationalized and indexation be made on annual basis.
26. SSML requested the Authority to allow whatever has been proposed by CPPAGL in the Master Agreement to other similar bagasse power projects having notified upfront tariff 2013. Further, SSML submitted that it will comply with all the directions of the Authority with regard to O&M bidding.
27. It is noted that vide decisions issued on April 09, 2021, the Authority had approved 10% reduction in the O&M cost of operational bagasse IPPs. This has translated into the O&M cost at around 2.925% of the EPC cost approved in upfront tariff, 2013. Accordingly, the Authority hereby approves O&M cost at the rate of 2.925% of the EPC cost for Shahtaj also i.e. 10% reduction in the O&M cost earlier approved for the Petitioner. Additionally, considering the current approvals, the Authority has decided that whole of the O&M cost shall be denominated in local currency which will be indexed yearly in accordance with the mechanism given in the Order part of this decision. Further, a term has also been stated in the Order part of this decision with respect to competitive process to be followed for the selection of O&M contractor.

F. Insurance during Operation

28. In the upfront tariff, 2013, insurance during operation to the tune of 1% of the approved EPC cost was allowed, with no indexation thereon. The Authority vide its decisions issued on April 09, 2021 in case of operational bagasse projects, reduced the approved limit of 1% to 0.7% of the EPC cost, while maintaining the decision of no indexation on that component. CPPAGL has submitted that the insurance during operation be adjusted annually, on actual basis, subject to maximum of 0.5% of the EPC cost. SSML stated to make the same adjustment as were made in the tariffs of other bagasse IPPs. Considering the above discussion and current approvals, the Authority has decided to allow insurance at the rate of 0.5% of the EPC cost. The approved component shall be fixed and no indexation therein shall be made.



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G. Fuel Price

29. In the upfront tariff, 2013, the bagasse price and corresponding FCC was worked out based on the prices of the imported coal (South African) using heating value of both fuels. The price of bagasse of Rs. 2,860.80 per ton and FCC of Rs. 5.7702/kWh (24.50% efficiency) was approved. The yearly indexation of the FCC was prescribed (starting from October 01 every year) which was also linked with the variation in international price of the imported coal in USD. In upfront tariff, 2017, bagasse price was worked out and approved on the basis of available market prices (informed by stakeholders during the proceedings) during crushing and non-crushing season instead of linking the same with any of the alternative fuels. The bagasse price was set at Rs. 2,750/ ton and indexation thereon of 2% flat after every two years was allowed in the determination.
30. Considering bagasse pricing and indexation mechanism approved under upfront tariff, 2017 more rationale and in consumer interest, the Authority initiated suo moto review proceedings for modification in the working of fuel pricing and adjustment mechanism for bagasse IPPs which were awarded upfront tariff, 2013. After due proceedings, the Authority issued the decision on July 16, 2019 whereby the fuel pricing and indexation mechanism thereof as approved in upfront tariff, 2013 was modified to the one approved in upfront tariff, 2017. The applicability of that decision was to start from October 01, 2018. Based on that decision, the FCC of bagasse IPPs given upfront tariff, 2013 was Rs. 5.5466/kWh, for the period starting from October 01, 2018 till September 30, 2020. However, the above decision was challenged by the operational bagasse IPPs through different petitions in honorable High Court of Islamabad. That case is still pending adjudication.
31. CPPAGL submitted that the pricing mechanism of bagasse as determined in bagasse based upfront tariff, 2017 may be considered for the subject matter. SSML during the hearing and while responding to comments of CPPAGL stated that it will comply with all the directions of the Authority with regards to pricing mechanism of bagasse.
32. Considering the above details, the Authority has decided to approve the FCC for Shahtaj based on the bagasse price of Rs. 2,750 per ton. The indexation on the reference FCC shall be allowed after final adjudication of the aforesaid decision of the Authority dated July 16, 2019 by the honorable High Court of Islamabad.



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H. Working Capital

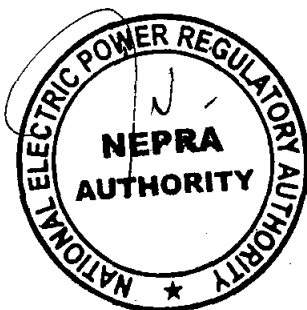
33. CPPAGL submitted that the treatment of working capital be made in line with mechanism as approved in bagasse upfront tariff, 2017 as bagasse is the left over from the sugar mills hence no upfront payment for fuel arrangement is required. SSML requested the Authority to allow whatever has been proposed by CPPAGL in the Master Agreement to other similar bagasse power projects. The Authority noted that it approved working capital cost component of Rs. 0.1924/kWh in the upfront tariff, 2013 to cover the time lag in receipts and payments of fuel. However, in upfront tariff, 2017, it was noted that working capital component has been allowed in the tariffs for those technologies where fuel payments are made in advance which is not the case in bagasse projects, therefore, did not include that component in that tariff. In view of its latest decision, the Authority hereby decides not to allow the working capital component to Shahtaj also.

Whether the requested modified tariff fulfills the criteria of least cost, given the existing and upcoming generation in the system?

34. SSML during the hearing submitted that the Authority has approved Indicative Generation Capacity Expansion Plan ("IGCEP") 2021-30 on September 24, 2021 in which the Project is included. Further, SSML submitted that the upfront tariff has been rationalized by NEPRA through decisions issued on April 09, 2021 which the petitioner is also asking for. In addition to above, the Petitioner submitted the fuel cost component data for the month of June, 2021 of different technologies to justify the least cost of the Project and shown that its energy can displace the expensive units. Furthermore, the Petitioner submitted that bagasse is local fuel which results in saving of foreign exchange in case of imported fuel. The Authority has considered the response of the Petitioner. Considering the approved IGCEP and in view of generation on local fuel as well as the denomination of majority part of the tariff of SSML in local currency, the Authority considered this issue settled.

Comments of AEDB

35. AEDB vide its letter dated November 28, 2021 has commented that Clause X of the applicable CCOE decision states that "The company has to provide an undertaking to withdraw all the lawsuits against Federal / Provincial Government." AEDB vide letter dated October 03, 2021 asked SSML to follow the said directions of CCOE, however, the said has not been complied with. The above letter of AEDB was forwarded to Shahtaj for the response. SSML vide letter dated December 23, 2021 submitted its response whereby it has informed that it applied for the withdrawal of the case before the Islamabad High Court.



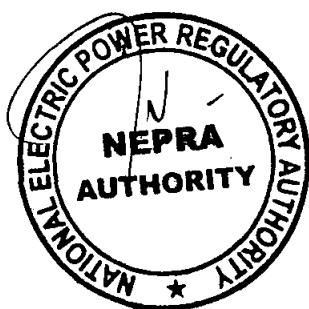
The honorable Court on that application directed all the entities to proceed with the completion of all the milestones and directed NEPRA to determine/modify/revalidate the generation tariff of SSML. Further, SSML submitted that based on the modified tariff and after obtaining final verdict of honorable court on pending application of withdrawal of the case, the AEDB will be approached for extension of LOS.

36. ORDER

The Authority hereby modify the tariff dated January 02, 2017 of Shahtaj Sugar Mills Limited for its 32 MW Project for delivery of electricity to the power purchaser as following:

Tariff components	Levelized Tariff (Rs/kWh)
Fuel Cost	5.5466
Variable O&M Cost	0.3868
Fixed O&M Cost	0.2579
Insurance	0.1102
Return on Equity	0.6300
Debt Service (SBP Loan)	0.9179
Debt Service (Commercial Loan)	1.2118
Total	9.0611

- Levelized tariff works out to be Rs. 9.0611/kWh.
- The tariff has been worked out on Build, Own and Operate basis.
- Project Cost of USD 0.9691 million/MW has been approved.
- Debt to Equity ratio of 80:20 has been approved.
- Tariff has been computed based on 50% SBP concessionary financing and 50% commercial local financing.
- The cost of debt of 6% for SBP financing has been approved.
- The cost of debt of KIBOR (9.50%) + spread of 2.25% for commercial local financing has been used.
- Debt Repayment period of 10 years for SBP financing has been approved.
- Debt Repayment period of 15 years for commercial local financing has been approved.





- ROE of 12% has been allowed.
- O&M Cost @ of about 2.925% of the EPC cost has been allowed.
- Insurance during Operation has been approved as 0.50% of the allowed EPC Cost.
- Construction period of 20 months has been allowed.
- Net Annual Plant Capacity Factor of 45% has been approved.
- Plant efficiency of 24.5% has been approved.
- Auxiliary consumption of 8.5% has been approved.
- Reference Exchange Rate of 98 PKR/USD has been used
- The above reference tariff is applicable for 30 years from commencement of COD.
- The reference component wise Tariff Table is attached herewith as **Annex-I**
- The reference Debt Service Schedule of SBP financing is attached herewith as **Annex-II**.
- The reference Debt Service Schedule of local commercial financing is attached herewith as **Annex-III**.

A. Adjustment at the time of COD

The reference upfront tariff will be adjusted at the reference date of May 31, 2015 keeping in view the decision of the Authority dated July 07, 2015, to account for cost variations during the project construction period, and this adjustment will be applicable to the project upon achievement of commercial operations. The following adjustment in the reference upfront tariff will be made at the time of COD of the Project.

- The 40% of the approved total project cost has been assumed in foreign currency (USD) which shall be adjusted with respect to PKR/USD exchange rate variation to be worked out on quarterly basis as per the assumed schedule of debt and equity injections spread over 20 months of project construction period starting from October 01, 2013 till May 31, 2015, as given hereunder:

Debt & Equity Injections	Qtr.1	Qtr. 2	Qtr.3	Qtr. 4	Qtr.5	Qtr.6	2 months (after Qtr.6)	Total
% of total project cost	20%	20%	15%	15%	10%	10%	10%	100%





- ii. The interest during construction of the commercial local loan will be adjusted on account of variation in quarterly KIBOR, over the reference KIBOR of 9.50%, during the period from October 01, 2013 till May 31, 2015.

Based on above adjustments, the components of return on equity, return on equity during construction component and debt servicing of reference tariff will be revised.

- iii. The savings in the approved spreads/cost shall be shared between the power purchaser and power producer in the ratio of 60:40.
- iv. O&M cost components shall be revised with local CPI only, keeping in view the adjustments approved in the decision of the Authority dated July 07, 2015.
- v. The reference fuel cost component in this decision has been worked out on the basis of efficiency of 24.50% (net LHV). The Petitioner is hereby directed to carry out the heat rate test at the time of COD by an Independent Engineer. Based upon the heat rate test results of the Project, the reference fuel cost component of tariff shall only be adjusted downward in case efficiency comes out higher than 24.5%. However, no upward adjustment in fuel cost component shall be made in case of efficiency results lower than 24.50%.
- vi. The reference tariff components in this decision have been computed using the auxiliary consumption of 8.5%. The Petitioner is hereby directed to carry out the capacity test at the time of COD by an Independent Engineer. Based upon the capacity test results of the Project, all the applicable reference tariff components shall be adjusted downward only in case auxiliary consumption comes out lower than 8.5%. However, no upward adjustment in the tariff components shall be made in case of auxiliary consumption results higher than 8.50%.

B. Indexations

The following indexation shall be applicable to the reference tariff after one-time adjustment. Adjustment of O&M and ROE components shall be made on annual basis starting from 1st July every year. Adjustment of Debt Servicing Component shall be made on quarterly/bi-annual basis in case of commercial local loan. The indexation mechanisms are given hereunder:



i) Operation and Maintenance Costs

O&M component of tariff shall be adjusted based on revised rates of local Inflation (CPI) as notified by Pakistan Bureau of Statistics according to the following formula;

$O\&M_{(REV)}$	=	$O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
Where;		
$O\&M_{(REV)}$	=	The revised O&M Local Component of Tariff
$O\&M_{(REF)}$	=	The reference O&M Local Component of Tariff
$CPI_{(REV)}$	=	The revised CPI (General)
$CPI_{(REF)}$	=	The reference CPI (General) of 177.74 for the month of April, 2013

Note: The adjustment in the reference O&M components shall be made at the time of COD of the project using the revised CPI value as taken in the decision of the Authority dated July 07, 2015. The first adjustment during operation shall be made taking CPI value at COD as reference and index value for the month of May, preceding the date of COD of the Project, as revised CPI.

ii. Adjustment of debt servicing component

The debt servicing component after one-time adjustment will remain unchanged throughout the tariff control period except for the adjustment due to variation in KIBOR in case for commercial local financing. The interest component of local commercial loan will be adjusted for KIBOR variation on quarterly basis.

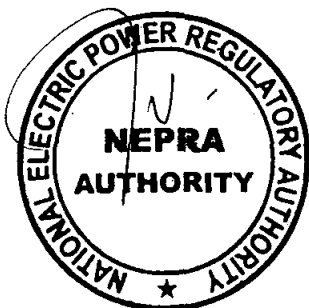
iii. Return on Equity

Return on Equity (ROE) as well as Return on Equity during Construction (ROEDC) components of tariff shall be adjusted for variation in PKR/USD exchange rate for five (05) years from COD according to the following formula:

$$ROE_{(REV)} = ROE_{(REF)} * ER_{(REV)} / ER_{(REF)}$$

$$ROEDC_{(REV)} = ROEDC_{(REF)} * ER_{(REV)} / ER_{(REF)}$$

Where;

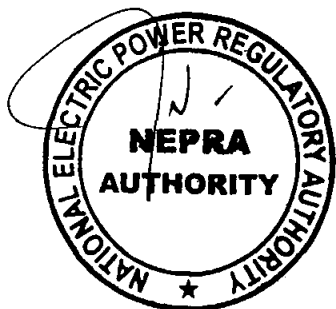


ROE _(REV)	=	Revised Return on Equity component of tariff expressed in Rs/kWh adjusted with exchange rate variation.
ROEDC _(REV)	=	Revised Return on Equity during Construction component of tariff in Rs/kWh adjusted with exchange rate variation.
ROE _(REF)	=	Reference Return on Equity component of tariff expressed in Rs/kWh.
ROEDC _(REF)	=	Reference Return on Equity during Construction component of tariff expressed in Rs/kWh.
ER _(REV)	=	Revised TT and OD selling rate of US dollar as notified by the National Bank of Pakistan on June 30 th of each year.
ER _(REF)	=	Reference TT and OD selling rate of 98 PKR/USD.

Note: The adjustment in the reference ROE and ROEDC components shall be made at the time of COD of the project using the mechanism as stated in the decision of the Authority dated July 07, 2015. The first adjustment during operation shall be made taking exchange rate value at COD as reference and exchange rate of 30th June, preceding the date of COD of the Project, as revised exchange rate.

C. Terms and Conditions of Upfront Tariff

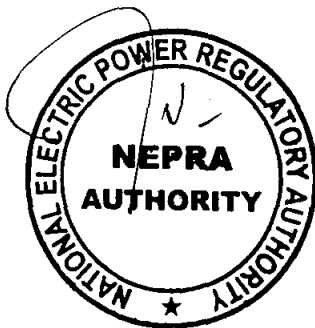
- i. The Upfront tariff is applicable for power generation using bagasse.
- ii. The tariff will be applicable and become effective after COD of the Project.
- iii. SSML is required to achieve COD as per the timelines given in the approved IGCEP.
- iv. All plant and equipment shall be new and of acceptable standards. The verification of the plant and equipment will be done by the Independent Engineer at the time of the commissioning of the plant duly appointed by the power purchaser.
- v. Annual energy beyond the specified plant factor of 45% shall be paid the fuel and variable O&M cost components only.



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- vi. The procurement on priority despatch/must run condition shall be made to the extent of specified annual plant factor of 45%. Only fixed components of tariff (applicable tariff minus fuel and variable O&M) shall be paid in case of non-despatch by the power purchaser up to the annual plant factor of 45%. Beyond 45%, the plant shall be given despatch on economic merit order basis.
- vii. The Energy Purchase Agreement shall state the mechanism of penalty to power producer in case the power producer does not fulfil its commitment of making the declared capacity available during season and off season.
- viii. The savings in the spread over KIBOR for commercial local loan as well as in the cost under SBP Scheme during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40.
- ix. The Authority may consider making changes in the approved O&M cost while capping the allowed prevailing level, which shall be governed under NEPRA (Selection of Operation and Maintenance Contractors by Generation Companies) Guidelines, 2021.
- x. In case the company earns annual profit in excess of the approved ROE, then that extra amount shall be shared between the power producer and consumers through claw back formula to be decided by the Authority vide the relevant framework.
- xi. Pre COD sale of electricity (electricity supplied during the testing phase) is allowed to the project company, subject to the terms and conditions of Energy Purchase Agreement at the reference fuel cost component and variable O&M components of tariff.
- xii. In case the company is obligated to pay any tax on its income from generation of electricity, or any duties and/or taxes, not being of refundable nature, are imposed on the company, the exact amount paid by the company on these accounts shall be reimbursed on production of original receipts. This payment shall be considered as a pass-through payment. However, withholding tax on dividend shall not be a pass through item.
- xiii. This tariff will be applicable for a period of thirty years (30) from the commencement of commercial operations.
- xiv. The project is allowed the use of other biomass fuel such as rice husk, cotton stalk etc. in combination with Bagasse or separately. However use of coal imported or local is not allowed.





- xv. FCC shall be adjusted in accordance with the mechanism as per Authority's decision dated July 16, 2019, upon final adjudication of that decision by the honorable Islamabad High Court.
- xvi. No adjustment for certified emission reductions has been accounted for in the tariff. However, upon actual realization of carbon credits, the same shall be distributed between the power purchaser and the power producer in accordance with the applicable GOP Policy, amended from time to time.
37. The EPA/PPA executed shall be consistent with all applicable documents including Generation License and NEPRA's tariff determination/decision for the power producer. Any provision of EPA which is inconsistent with above said documents shall be void to that extent and its financial impact shall not be passed on to the end consumer.
38. The Order part along with the 03 Annexures is recommended for notification by the Federal Government in the official gazette in accordance with Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

AUTHORITY

Rehmatullah Baloch
Member

Did not attend.

Engr. Maqsood Anwar Khan
Member

Rafique Ahmed Shaikh
Member

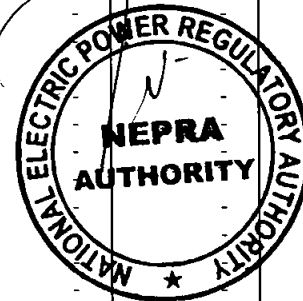
Tauseef H. Farooqi
Chairman



24/1/22

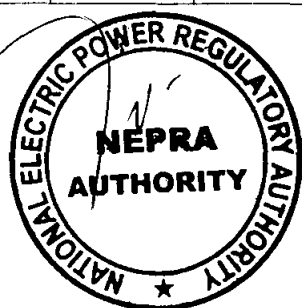
**Generation Tariff for 32 MW Bagasse Based Power Project
Shataj Sugar Mills Limited (SSML)**

Year	Fuel Component	Variable O&M Local	Fixed O&M Local	Insurance	Return on Equity	ROEDC	SBP Loan Repayment	SBP Interest Charges	Commercial Loan Repayment	Commercial Interest Charges	Tariff
	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh
1	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	0.7939	0.6143	0.2762	1.2256	9.8415
2	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	0.8426	0.5655	0.3102	1.1917	9.8415
3	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	0.8943	0.5138	0.3482	1.1536	9.8415
4	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	0.9492	0.4590	0.3910	1.1108	9.8415
5	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	1.0075	0.4007	0.4390	1.0628	9.8415
6	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	1.0693	0.3389	0.4929	1.0089	9.8415
7	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	1.1349	0.2733	0.5534	0.9484	9.8415
8	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	1.2045	0.2036	0.6214	0.8805	9.8415
9	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	1.2785	0.1297	0.6977	0.8042	9.8415
10	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	1.3569	0.0513	0.7833	0.7185	9.8415
11	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	0.8795	0.6223	8.4333
12	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	0.9875	0.5143	8.4333
13	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	1.1087	0.3931	8.4333
14	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	1.2449	0.2570	8.4333
15	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	1.3977	0.1041	8.4333
16	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
17	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
18	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
19	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
20	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
21	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
22	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
23	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
24	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
25	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
26	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
27	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
28	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
29	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
30	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	-	-	-	-	6.9315
Levelized Tariff	5.5466	0.3868	0.2579	0.1102	0.5996	0.0304	0.6553	0.2626	0.4631	0.7487	9.0611



Debt Servicing Schedule (SBP Loan)
Shataj Sugar Mills Limited (SSML)

Relevant Quarters	Base amount	Principal Repayment	Interest	Balance Principal	Total Debt Service	Annual Principal Repayment	Annual Interest	Annual Debt Servicing
	(Rs. in million/MW)					Rs./kWh		
1	37.9871	0.7000	0.5698	37.2871	1.2698	0.1941	0.1580	0.3520
2	37.2871	0.7105	0.5593	36.5766	1.2698	0.1970	0.1551	0.3520
3	36.5766	0.7211	0.5486	35.8555	1.2698	0.1999	0.1521	0.3520
4	35.8555	0.7320	0.5378	35.1235	1.2698	0.2029	0.1491	0.3520
5	35.1235	0.7429	0.5269	34.3805	1.2698	0.2060	0.1461	0.3520
6	34.3805	0.7541	0.5157	33.6265	1.2698	0.2091	0.1430	0.3520
7	33.6265	0.7654	0.5044	32.8611	1.2698	0.2122	0.1398	0.3520
8	32.8611	0.7769	0.4929	32.0842	1.2698	0.2154	0.1367	0.3520
9	32.0842	0.7885	0.4813	31.2956	1.2698	0.2186	0.1334	0.3520
10	31.2956	0.8004	0.4694	30.4953	1.2698	0.2219	0.1301	0.3520
11	30.4953	0.8124	0.4574	29.6829	1.2698	0.2252	0.1268	0.3520
12	29.6829	0.8246	0.4452	28.8583	1.2698	0.2286	0.1234	0.3520
13	28.8583	0.8369	0.4329	28.0214	1.2698	0.2320	0.1200	0.3520
14	28.0214	0.8495	0.4203	27.1719	1.2698	0.2355	0.1165	0.3520
15	27.1719	0.8622	0.4076	26.3097	1.2698	0.2390	0.1130	0.3520
16	26.3097	0.8752	0.3946	25.4346	1.2698	0.2426	0.1094	0.3520
17	25.4346	0.8883	0.3815	24.5463	1.2698	0.2463	0.1058	0.3520
18	24.5463	0.9016	0.3682	23.6447	1.2698	0.2500	0.1021	0.3520
19	23.6447	0.9151	0.3547	22.7296	1.2698	0.2537	0.0983	0.3520
20	22.7296	0.9289	0.3409	21.8007	1.2698	0.2575	0.0945	0.3520
21	21.8007	0.9428	0.3270	20.8579	1.2698	0.2614	0.0907	0.3520
22	20.8579	0.9569	0.3129	19.9010	1.2698	0.2653	0.0867	0.3520
23	19.9010	0.9713	0.2985	18.9297	1.2698	0.2693	0.0828	0.3520
24	18.9297	0.9859	0.2839	17.9439	1.2698	0.2733	0.0787	0.3520
25	17.9439	1.0006	0.2692	16.9432	1.2698	0.2774	0.0746	0.3520
26	16.9432	1.0157	0.2541	15.9276	1.2698	0.2816	0.0705	0.3520
27	15.9276	1.0309	0.2389	14.8967	1.2698	0.2858	0.0662	0.3520
28	14.8967	1.0463	0.2235	13.8503	1.2698	0.2901	0.0620	0.3520
29	13.8503	1.0620	0.2078	12.7883	1.2698	0.2944	0.0576	0.3520
30	12.7883	1.0780	0.1918	11.7103	1.2698	0.2989	0.0532	0.3520
31	11.7103	1.0941	0.1757	10.6162	1.2698	0.3033	0.0487	0.3520
32	10.6162	1.1106	0.1592	9.5056	1.2698	0.3079	0.0441	0.3520
33	9.5056	1.1272	0.1426	8.3784	1.2698	0.3125	0.0395	0.3520
34	8.3784	1.1441	0.1257	7.2343	1.2698	0.3172	0.0348	0.3520
35	7.2343	1.1613	0.1085	6.0730	1.2698	0.3220	0.0301	0.3520
36	6.0730	1.1787	0.0911	4.8943	1.2698	0.3268	0.0253	0.3520
37	4.8943	1.1964	0.0734	3.6979	1.2698	0.3317	0.0204	0.3520
38	3.6979	1.2143	0.0555	2.4836	1.2698	0.3367	0.0154	0.3520
39	2.4836	1.2325	0.0373	1.2510	1.2698	0.3417	0.0103	0.3520
40	1.2510	1.2510	0.0188	-	1.2698	0.3468	0.0052	0.3520



Debt Servicing Schedule (Commercial Local Loan)

Shataj Sugar Mills Limited (SSML)

Relevant quarter	Base amount	Principal Repayment	Interest	Balance Principal	Total Debt Service	Annual Principal Repayment	Annual Interest	Annual Debt Servicing
	(Rs. in million/MW)					Rs./kWh		
1	37.9871	0.2384	1.1159	37.7487	1.3543	0.0661	0.3094	0.3755
2	37.7487	0.2454	1.1089	37.5033	1.3543	0.0680	0.3074	0.3755
3	37.5033	0.2526	1.1017	37.2507	1.3543	0.0700	0.3054	0.3755
4	37.2507	0.2600	1.0942	36.9907	1.3543	0.0721	0.3034	0.3755
5	36.9907	0.2677	1.0866	36.7230	1.3543	0.0742	0.3013	0.3755
6	36.7230	0.2755	1.0787	36.4475	1.3543	0.0764	0.2991	0.3755
7	36.4475	0.2836	1.0706	36.1639	1.3543	0.0786	0.2968	0.3755
8	36.1639	0.2919	1.0623	35.8720	1.3543	0.0809	0.2945	0.3755
9	35.8720	0.3005	1.0537	35.5714	1.3543	0.0833	0.2921	0.3755
10	35.5714	0.3093	1.0449	35.2621	1.3543	0.0858	0.2897	0.3755
11	35.2621	0.3184	1.0358	34.9437	1.3543	0.0883	0.2872	0.3755
12	34.9437	0.3278	1.0265	34.6159	1.3543	0.0909	0.2846	0.3755
13	34.6159	0.3374	1.0168	34.2784	1.3543	0.0935	0.2819	0.3755
14	34.2784	0.3473	1.0069	33.9311	1.3543	0.0963	0.2792	0.3755
15	33.9311	0.3575	0.9967	33.5736	1.3543	0.0991	0.2763	0.3755
16	33.5736	0.3680	0.9862	33.2056	1.3543	0.1020	0.2734	0.3755
17	33.2056	0.3788	0.9754	32.8267	1.3543	0.1050	0.2704	0.3755
18	32.8267	0.3900	0.9643	32.4367	1.3543	0.1081	0.2673	0.3755
19	32.4367	0.4014	0.9528	32.0353	1.3543	0.1113	0.2642	0.3755
20	32.0353	0.4132	0.9410	31.6221	1.3543	0.1146	0.2609	0.3755
21	31.6221	0.4254	0.9289	31.1967	1.3543	0.1179	0.2575	0.3755
22	31.1967	0.4379	0.9164	30.7589	1.3543	0.1214	0.2541	0.3755
23	30.7589	0.4507	0.9035	30.3081	1.3543	0.1250	0.2505	0.3755
24	30.3081	0.4640	0.8903	29.8442	1.3543	0.1286	0.2468	0.3755
25	29.8442	0.4776	0.8767	29.3666	1.3543	0.1324	0.2431	0.3755
26	29.3666	0.4916	0.8626	28.8750	1.3543	0.1363	0.2392	0.3755
27	28.8750	0.5061	0.8482	28.3689	1.3543	0.1403	0.2352	0.3755
28	28.3689	0.5209	0.8333	27.8480	1.3543	0.1444	0.2310	0.3755
29	27.8480	0.5362	0.8180	27.3118	1.3543	0.1487	0.2268	0.3755
30	27.3118	0.5520	0.8023	26.7598	1.3543	0.1530	0.2224	0.3755
31	26.7598	0.5682	0.7861	26.1916	1.3543	0.1575	0.2179	0.3755
32	26.1916	0.5849	0.7694	25.6067	1.3543	0.1622	0.2133	0.3755
33	25.6067	0.6021	0.7522	25.0047	1.3543	0.1669	0.2085	0.3755
34	25.0047	0.6197	0.7345	24.3849	1.3543	0.1718	0.2036	0.3755
35	24.3849	0.6380	0.7163	23.7470	1.3543	0.1769	0.1986	0.3755
36	23.7470	0.6567	0.6976	23.0903	1.3543	0.1821	0.1934	0.3755
37	23.0903	0.6760	0.6783	22.4143	1.3543	0.1874	0.1880	0.3755
38	22.4143	0.6958	0.6584	21.7185	1.3543	0.1929	0.1825	0.3755
39	21.7185	0.7163	0.6380	21.0022	1.3543	0.1986	0.1769	0.3755
40	21.0022	0.7373	0.6169	20.2649	1.3543	0.2044	0.1710	0.3755
41	20.2649	0.7590	0.5953	19.5059	1.3543	0.2104	0.1650	0.3755
42	19.5059	0.7813	0.5730	18.7246	1.3543	0.2166	0.1589	0.3755
43	18.7246	0.8042	0.5500	17.9204	1.3543	0.2230	0.1525	0.3755
44	17.9204	0.8278	0.5264	17.0925	1.3543	0.2295	0.1459	0.3755
45	17.0925	0.8522	0.5021	16.2404	1.3543	0.2363	0.1392	0.3755
46	16.2404	0.8772	0.4771	15.3632	1.3543	0.2432	0.1323	0.3755
47	15.3632	0.9030	0.4513	14.4602	1.3543	0.2503	0.1251	0.3755
48	14.4602	0.9295	0.4248	13.5307	1.3543	0.2577	0.1178	0.3755
49	13.5307	0.9568	0.3975	12.5739	1.3543	0.2653	0.1102	0.3755
50	12.5739	0.9849	0.3694	11.5890	1.3543	0.2731	0.1024	0.3755
51	11.5890	1.0138	0.3404	10.5752	1.3543	0.2811	0.0944	0.3755
52	10.5752	1.0436	0.3106	9.5316	1.3543	0.2893	0.0861	0.3755
53	9.5316	1.0743	0.2800	8.4573	1.3543	0.2978	0.0776	0.3755
54	8.4573	1.1058	0.2484	7.3515	1.3543	0.3066	0.0689	0.3755
55	7.3515	1.1383	0.2160	6.2132	1.3543	0.3156	0.0599	0.3755
56	6.2132	1.1717	0.1825	5.0414	1.3543	0.3249	0.0506	0.3755
57	5.0414	1.2062	0.1481	3.8353	1.3543	0.3344	0.0411	0.3755
58	3.8353	1.2416	0.1127	2.5937	1.3543	0.3442	0.0312	0.3755
59	2.5937	1.2781	0.0762	1.3156	1.3543	0.3543	0.0211	0.3755
60	1.3156	1.3156	0.0386	(0.00)	1.3543	0.3647	0.0107	0.3755

