



**Registrar**

# **National Electric Power Regulatory Authority**

## **Islamic Republic of Pakistan**

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No. NEPRA/R/TRF-520/AEPL-2019/5543-5545  
February 14, 2020

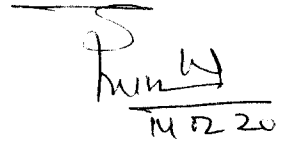
**Subject: Decision of National Electric Power Regulatory Authority in the matter of Modification Petition filed by Artistic Energy (Pvt.) Ltd. for its 49.3 MW Wind Power Project located at Jhimpir, District Thatta [Case # NEPRA/TRF-520/AEPL-2019]**

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Annex-I(a) & I(b) (10 Pages) in Case No. NEPRA/TRF-520/AEPL-2019.

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.
3. The Order along with Annex-I(a) & I(b) of the Authority's Decision are to be notified in the official Gazette.

Enclosure: As above



14 Feb 20

( Syed Safeer Hussain )

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

CC:

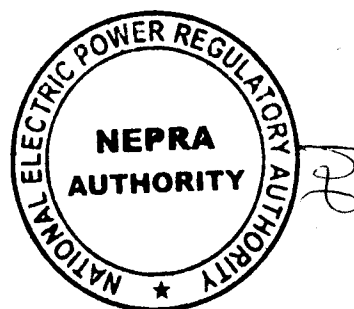
1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.

**DECISION OF NATIONAL ELECTRIC POWER REGULATORY AUTHORITY IN THE MATTER OF MODIFICATION  
PETITION FILED BY ARTISTIC ENERGY (PRIVATE) LIMITED FOR ITS 49.3 MW WIND POWER PROJECT LOCATED AT  
JHIMPIR, DISTRICT THATTA, SINDH, PAKISTAN.**

1. Artistic Energy (Private) Limited ("AEPL" or "the petitioner") filed the subject tariff modification petition ("modification petition") before National Electric Power Regulatory Authority ("NEPRA" or "the Authority") vide letter dated October 12, 2019.
2. The subject modification petition has been filed for the adjustment in the debt repayment schedule as approved by NEPRA while adjusting the tariff of AEPL at its Commercial Operation Date ("COD") vide its decision dated April 04, 2019 ("COD Decision"). AEPL has requested for this adjustment on account of the savings in the cost of financing under the State Bank Pakistan Refinancing Scheme ("SBP Scheme"). The petitioner submitted that it has negotiated the cost of financing under SBP Scheme at 4.5% compared to standard and earlier approved cost of 6%, resulting in the saving of spread by 1.5%.

**Background of the Case**

3. The Authority after due proceedings determined Upfront Tariff for Wind Power Projects on June 24, 2015 ("Upfront Tariff, 2015") which was issued on June 24, 2015 and was reviewed on October 19, 2015. AEPL applied for the unconditional acceptance of the Upfront Tariff, 2015 and was awarded the same vide decision of the Authority issued on March 31, 2016. The levelized tariff of Rs. 12.7064/kWh for the tariff control period of twenty (20) years was determined for AEPL based on its proposed financing structure of 100% local loan. The tariff given to AEPL was computed using 3 month KIBOR (8.22%) plus spread of 3%. It was given in AEPL's tariff decision that the savings in the allowed spread shall be shared between the power purchaser and AEPL in the ratio of 60:40 respectively in case AEPL will be able to negotiate spread at less than the approved limits.
4. In June, 2016, SBP Scheme was introduced to provide concessionary financing for renewable energy projects. Under that scheme, SBP, through commercial banks, decided to provide finance to renewable energy projects (wind, solar, bagasse etc.) of up to 6 billion per project having capacity limit up to 50 MW. The cost of financing of 6% (fixed) for maximum debt servicing tenor of ten years was approved in the SBP Scheme. That cost was comprised of 2% share for SBP and 4% share for participating commercial bank.
5. In light of the aforesaid SBP Scheme, the Authority initiated suo moto proceeding under its legal framework to review the tariffs of the renewable energy projects that had been approved prior to issuance of the said Scheme. The Authority issued its decision on that proceeding on July 18, 2018 which, inter alia, provides following:



*"In case the company shall secure full or certain portion of debt under Revised Financing Scheme introduced by SBP then its tariff shall be adjusted on the terms as given in the Scheme. The cost of financing under SBP Scheme shall be taken as 6%. The savings in cost of financing as given in the Scheme, if negotiated/availed by the company, shall be shared in the ratio of 60:40 between the power purchaser and power producer."*

6. This aforesaid decision was made part of a number of tariff determinations/decisions of renewable energy projects earlier issued by the Authority. A list of all those determinations/decisions of different renewable technologies like bagasse, wind, solar and small hydro was provided as Annexure with that decision issued on July 18, 2018. Likewise, the aforesaid decision was made part of the tariff decision of AEPL issued on March 31, 2016.
7. AEPL achieved its COD on March 16, 2018. Upon achievement of COD, the petitioner submitted a request dated March 30, 2018 to NEPRA for adjustment of its tariff as per the mechanism prescribed in its tariff decision. The Authority issued the COD Decision on April 04, 2019 while adjusting the levelized tariff of AEPL to Rs. 11.5613/kWh. The aforesaid tariff was calculated on debt amount of Rs. 8.410 billion. AEPL submitted that it secured Rs. 6 billion under SBP Scheme at 6% cost of financing whereas the remaining amount of Rs. 2.41 billion was dealt under commercial financing at KIBOR plus 3%. Accordingly, the approved tariff was computed on aforesaid amounts and respective costs of financing.

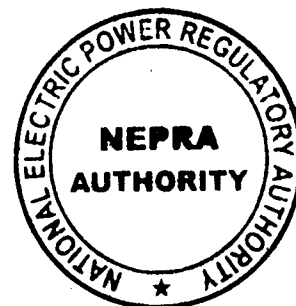
**Subject Petition**

8. Now the petitioner vide its instant request has informed the Authority that it has negotiated the financing cost under SBP Scheme from 6% to 4.5%, resulting in a saving of 1.5%. AEPL has requested to share the said savings of 1.5% in the ratio of 60:40 between power purchaser and AEPL respectively. The petitioner has also submitted that the said saving has been availed by AEPL from October 15, 2018. Along with its modification petition, a copy of the Amended Commercial Facility Agreement has also been provided by AEPL.

**Analysis and Decision of the Authority**

9. The subject petition was considered and admitted by the Authority on October 31, 2019.
10. The Authority noted that in the COD Decision of AEPL, the debt servicing schedule for Rs. 6 billion loan as secured by the petitioner under the SBP scheme was spread over the tenor of ten years. That debt servicing schedule was computed at 6% and was divided into forty quarters of equal annuity installments. AEPL has achieved COD on March 16, 2018 and as per submitted Amended Commercial Facility Agreement, the negotiated spread of 4.5% is applicable from October 15, 2018, i.e. two quarters after the achievement of COD. To revise the debt servicing schedule, the rate of 5.1% (40% of 1.5%, i.e. 0.6% is the share of AEPL) has been used.

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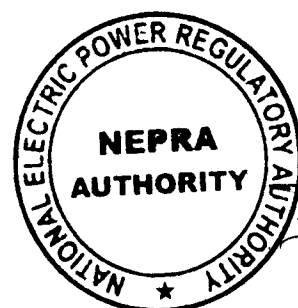
11. As the negotiated rate is applicable from October 15, 2018, therefore, the approved debt servicing schedule has been revised for the remaining thirty eight (38) quarters. Doing so, the levelized tariff of Rs. 11.5613/kWh as approved for AEPL in COD Decision comes down to Rs. 11.4235/kWh.
12. The Authority has decided not to hold a hearing in this matter considering that the benefit will be passed on to the end consumers in the form of reduction in tariff and that the request is in line with already provided sharing mechanism which was determined after following due process of law.

13. **ORDER**

Pursuant to section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with Rule 6 of the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000, AEPL is allowed to charge the following specified/approved tariff for delivery of electricity to the power purchaser.

**REVISED TARIFF ON BOO BASIS**

Years	O & M	Insurance	Return on equity	Principal repayment of debt	Interest	Total tariff
1	1.5039	0.6349	3.6623	3.9820	3.8960	13.6790
2	1.5039	0.6349	3.6623	4.3253	3.4496	13.5760
3	1.5039	0.6349	3.6623	4.6171	3.1578	13.5760
4	1.5039	0.6349	3.6623	4.9319	2.8430	13.5760
5	1.5039	0.6349	3.6623	5.2718	2.5030	13.5760
6	1.5039	0.6349	3.6623	5.6392	2.1357	13.5760
7	1.5039	0.6349	3.6623	6.0366	1.7383	13.5760
8	1.5039	0.6349	3.6623	6.4669	1.3080	13.5760
9	1.5039	0.6349	3.6623	6.9332	0.8417	13.5760
10	1.5039	0.6349	3.6623	7.4389	0.3360	13.5760
11 to 20	1.5039	0.6349	3.6623	-	-	5.8011
<b>Levelized – Rs./kWh</b>						<b>11.4235</b>
Indexation	PKR/US \$ & US CPI	PKR/US \$	PKR/US \$	-	KIBOR	

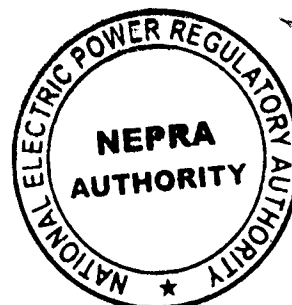


- (i) This tariff is applicable for wind power generation from this project as licensed also.
- (ii) This tariff will be limited to the extent of net annual energy generation supplied to the power purchaser up to 35% net annual plant capacity factor. Net annual energy generation supplied to the power purchaser in a year, in excess of 35% net annual plant capacity factor will be charged at the following tariffs,

<b><u>Net annual plant capacity factor</u></b>	<b><u>% of the prevalent tariff</u></b>
Above 35% to 36%	75%
Above 36% to 37%	80%
Above 37%	100%

- (iii) The wind risk will be borne by AEPL (power producer).
- (iv) No adjustment for certified emission reductions has been accounted for in this tariff. However, upon actual realization of carbon credits, the same shall be distributed between the power purchaser and the applicant in accordance with the applicable GOP Policy for Development of Renewable Energy for Power Generation, 2006, as amended from time to time.
- (v) This tariff will be applicable for a period of twenty (20) years from the commencement of commercial operations.
- (vi) This tariff has been finalized on the basis of information and source documents as provided by AEPL regarding its financing structure.
- (vii) **Indexations/adjustment**

The tariff allowed to applicant, will remain unchanged throughout the tariff control period, except for the adjustments due to indexations/adjustment detailed in this order. The indexations of Operation & Maintenance Cost, Return on Equity and Interest (where applicable) components are allowed on quarterly basis on 1<sup>st</sup> July, 1<sup>st</sup> October, 1<sup>st</sup> January and 1<sup>st</sup> April. Whereas, Insurance component will be adjusted annually. The mechanism of indexations/adjustment will be as under:



(a) Indexations applicable to O & M:

$$OM_{(REV)} = OM_{(REF)} * US\ CPI_{(REV)} / US\ CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$$

Where:

$OM_{(REV)}$  = The revised applicable O&M tariff component indexed with US CPI and exchange rate parity

$OM_{(REF)}$  = The reference O&M tariff component for the relevant period

$US\ CPI_{(REV)}$  = The revised US CPI (all urban consumers) based on latest available information with respect to US CPI (notified by US Bureau of Labor Statistics)

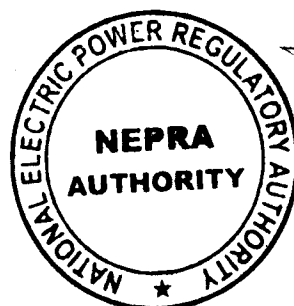
$US\ CPI_{(REF)}$  = Reference US CPI (all urban consumers)–current reference 233.707 US CPI (all urban consumers) for the month of January, 2015 as notified by the US Bureau of Labor Statistics

$ER_{(REV)}$  = Revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan as at the last day of the preceding quarter

$ER_{(REF)}$  = Reference TT & OD selling rate of US dollar – current reference 101.50

(b) Adjustment of Insurance Component

The actual insurance cost for the minimum cover required under contractual obligations with the power purchaser not exceeding 1% of Rs. 194.67 million per MW (US \$ 1.9179 million per MW) will be treated as pass-through. Insurance component of reference tariff shall be adjusted annually as per actual, upon production of authentic documentary evidence by the applicant, according to the following formula:



AIC	=	$\text{Ins}_{(\text{Ref})} / \text{P}_{(\text{Ref})} * \text{P}_{(\text{Act})}$
Where		
AIC	=	Adjusted insurance component of tariff
$\text{Ins}_{(\text{Ref})}$	=	Reference insurance component of tariff
$\text{P}_{(\text{Ref})}$	=	Reference premium @ 1% of Rs.194.67 million
$\text{P}_{(\text{Act})}$	=	Actual premium per MW of installed capacity or 1% of US \$ 1.9179 million converted into Pak Rupees on exchange rate prevailing on the 1 <sup>st</sup> day of the insurance coverage period, whichever is lower

(c) Indexations applicable to Return on Equity

$$\text{ROE}_{(\text{LREV})} = \text{ROE}_{(\text{LREF})} * \text{ER}_{(\text{REV})} / \text{ER}_{(\text{REF})}$$

Where:

$\text{ROE}_{(\text{LREV})}$  = The revised applicable return on equity tariff component indexed with exchange rate parity

$\text{ROE}_{(\text{LREF})}$  = The reference return on equity tariff component for the relevant period

$\text{ER}_{(\text{REV})}$  = Revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan as at the last day of the preceding quarter

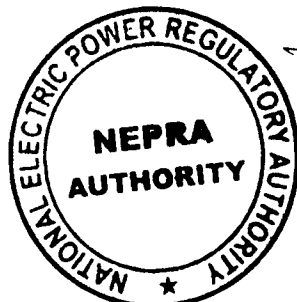
$\text{ER}_{(\text{REF})}$  = Reference TT & OD selling rate of US dollar – current reference 101.50

(d) Indexations applicable to Interest after achieving COD

$$\Delta I = \text{P}_{(\text{REV})} * (\text{KIBOR}_{(\text{REV})} - 8.22\%) / 4$$

Where:

$\Delta I$  = The variation in interest charges applicable corresponding to variation in 3 months KIBOR.  $\Delta I$  can be positive or negative depending upon whether 3 months KIBOR<sub>(REV)</sub> per annum > or < 8.22%. The interest payment obligation will be



enhanced or reduced to the extent of  $\Delta I$  for each quarter under adjustment.

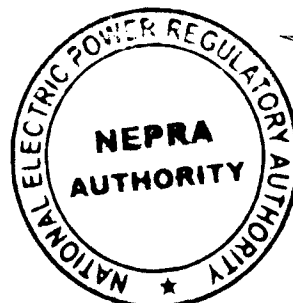
$P_{(REV)}$  = is the outstanding principal (as indicated in the attached debt service schedule to this order at Annex I(b)), on a quarterly basis at the relevant quarterly calculations date. Quarter 1 shall commence on the commercial operations date (i.e. the first figure will be used for the purposes of calculation of interest for the first quarter after commercial operations date).

$KIBOR_{(REV)}$  = Revised 3 months KIBOR rate as at the last day of the preceding quarter.

Note: The variations in KIBOR would only be allowed on the amount of debt not financed under the State Bank of Pakistan Revised Financing Scheme (i.e outstanding principal in the attached debt service schedule to this order at Annex-I(b))

(viii) **Other Terms and Conditions of Tariff:**

- General assumptions, which are not covered in this decision, determination of the Authority in the matter of upfront tariff for wind power generation dated June 24, 2015 and National Electric Power Regulatory Authority Upfront Tariff (Approval & Procedure) Regulations, 2011, may be dealt with as per the standard terms of the Energy Purchase Agreement.
- Further savings in the cost of financing under SBP Scheme during any time of loan tenor shall be shared between power purchaser and power producer in the ratio of 60:40. The savings in the approved spread of commercial financing during any time of loan tenor shall also be shared between power purchaser and power producer in the ratio of 60:40.




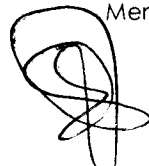


*Decision of the Authority in the matter of  
Modification Petition filed by Artistic Energy (Private) Limited*


14. The order along with Annex-I(a) and Annex-I(b) attached herewith are 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.

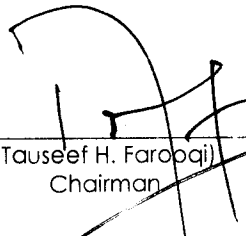
**AUTHORITY**

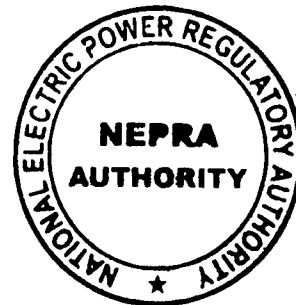
  
(Saif Ullah Chattha)  
Member 4.2.2020

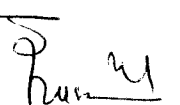
  
(Rehmatullah Baloch)  
Member 24/2/2020

  
(Rafique Ahmed Chaudhry)  
Member 24/2/20

  
(Engr. Bahadur Shah)  
Member/ Vice Chairman

  
(Tauseef H. Farooqi)  
Chairman

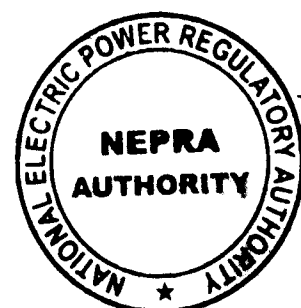


  
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**UPFRONT TARIFF FOR WIND POWER PROJECTS**  
**Debt Servicing Schedule for Financing under State Bank Scheme**  
**Artistic Energy Private Limited**

Debt Amount (Rs.) 6,000,000,000  
Interest Rate 6.00% For 1st & 2nd quarter  
Interest Rate 5.10% From 3rd quarter onwards  
Annual Energy (kWh) 151,153,800

Relevant Quarters	Base amount (PKR)	Principal Repayment (PKR)	Interest (PKR)	Balance Principal (PKR)	Total Debt Service (Million PKR)	Annual Principal Repayment Rs./kWh	Annual Interest Rs./kWh
1	6,000,000,000	110,562,610	90,000,000	5,889,437,390	200,562,610	3.0600	2.1445
2	5,889,437,390	112,221,049	88,341,561	5,777,216,340	200,562,610		
3	5,777,216,340	119,113,262	73,659,508	5,658,103,079	192,772,770		
4	5,658,103,079	120,631,956	72,140,814	5,537,471,123	192,772,770		
5	5,537,471,123	122,170,013	70,602,757	5,415,301,109	192,772,770	3.2954	1.8060
6	5,415,301,109	123,727,681	69,045,089	5,291,573,428	192,772,770		
7	5,291,573,428	125,305,209	67,467,561	5,166,268,219	192,772,770		
8	5,166,268,219	126,902,850	65,869,920	5,039,365,368	192,772,770		
9	5,039,365,368	128,520,862	64,251,908	4,910,844,507	192,772,770	3.4667	1.6347
10	4,910,844,507	130,159,503	62,613,267	4,780,685,004	192,772,770		
11	4,780,685,004	131,819,036	60,953,734	4,648,865,967	192,772,770		
12	4,648,865,967	133,499,729	59,273,041	4,515,366,238	192,772,770		
13	4,515,366,238	135,201,851	57,570,920	4,380,164,387	192,772,770	3.6469	1.4545
14	4,380,164,387	136,925,674	55,847,096	4,243,238,713	192,772,770		
15	4,243,238,713	138,671,477	54,101,294	4,104,567,237	192,772,770		
16	4,104,567,237	140,439,538	52,333,232	3,964,127,699	192,772,770		
17	3,964,127,699	142,230,142	50,542,628	3,821,897,556	192,772,770	3.8364	1.2649
18	3,821,897,556	144,043,576	48,729,194	3,677,853,980	192,772,770		
19	3,677,853,980	145,880,132	46,892,638	3,531,973,848	192,772,770		
20	3,531,973,848	147,740,104	45,032,667	3,384,233,744	192,772,770		
21	3,384,233,744	149,623,790	43,148,980	3,234,609,954	192,772,770	4.0359	1.0655
22	3,234,609,954	151,531,493	41,241,277	3,083,078,461	192,772,770		
23	3,083,078,461	153,463,520	39,309,250	2,929,614,941	192,772,770		
24	2,929,614,941	155,420,180	37,352,590	2,774,194,761	192,772,770		
25	2,774,194,761	157,401,787	35,370,983	2,616,792,974	192,772,770	4.2457	0.8557
26	2,616,792,974	159,408,660	33,364,110	2,457,384,314	192,772,770		
27	2,457,384,314	161,441,120	31,331,650	2,295,943,194	192,772,770		
28	2,295,943,194	163,499,495	29,273,276	2,132,443,700	192,772,770		
29	2,132,443,700	165,584,113	27,188,657	1,966,859,587	192,772,770	4.4664	0.6350
30	1,966,859,587	167,695,311	25,077,460	1,799,164,276	192,772,770		
31	1,799,164,276	169,833,426	22,939,345	1,629,330,850	192,772,770		
32	1,629,330,850	171,998,802	20,773,968	1,457,332,048	192,772,770		
33	1,457,332,048	174,191,787	18,580,984	1,283,140,262	192,772,770	4.6986	0.4028
34	1,283,140,262	176,412,732	16,360,038	1,106,727,530	192,772,770		
35	1,106,727,530	178,661,994	14,110,776	928,065,535	192,772,770		
36	928,065,535	180,939,935	11,832,836	747,125,601	192,772,770		
37	747,125,601	183,246,919	9,525,851	563,878,682	192,772,770	4.9428	0.1586
38	563,878,682	185,583,317	7,189,453	378,295,365	192,772,770		
39	378,295,365	187,949,504	4,823,266	190,345,861	192,772,770		
40	190,345,861	190,345,861	2,426,910	(0)	192,772,770		



**UPFRONT TARIFF FOR WIND POWER PROJECTS**  
**Debt Servicing Schedule for Local Commercial Financing**  
**Artistic Energy Private Limited**

Debt Amount (Rs.) 2,410,647,147  
Interest Rate (Kibor+3%) 11.22%  
Annual Energy (kWh) 151,153,800

Relevant Quarters	Base amount (PKR)	Principal Repayment (PKR)	Interest (PKR)	Balance Principal (PKR)	Total Debt Service (Million PKR)	Annual Principal Repayment Rs./kWh	Annual Interest Rs./kWh
1	2,410,647,147	33,409,838	67,618,652	2,377,237,309	101,028,490	0.9220	1.7515
2	2,377,237,309	34,346,984	66,681,507	2,342,890,325	101,028,490		
3	2,342,890,325	35,310,417	65,718,074	2,307,579,909	101,028,490		
4	2,307,579,909	36,300,874	64,727,616	2,271,279,035	101,028,490		
5	2,271,279,035	37,319,113	63,709,377	2,233,959,922	101,028,490	1.0299	1.6436
6	2,233,959,922	38,365,914	62,662,576	2,195,594,007	101,028,490		
7	2,195,594,007	39,442,078	61,586,412	2,156,151,929	101,028,490		
8	2,156,151,929	40,548,429	60,480,062	2,115,603,501	101,028,490		
9	2,115,603,501	41,685,812	59,342,678	2,073,917,689	101,028,490	1.1504	1.5231
10	2,073,917,689	42,855,099	58,173,391	2,031,062,590	101,028,490		
11	2,031,062,590	44,057,185	56,971,306	1,987,005,405	101,028,490		
12	1,987,005,405	45,292,989	55,735,502	1,941,712,417	101,028,490		
13	1,941,712,417	46,563,457	54,465,033	1,895,148,960	101,028,490	1.2850	1.3885
14	1,895,148,960	47,869,562	53,158,928	1,847,279,398	101,028,490		
15	1,847,279,398	49,212,303	51,816,187	1,798,067,095	101,028,490		
16	1,798,067,095	50,592,708	50,435,782	1,747,474,387	101,028,490		
17	1,747,474,387	52,011,834	49,016,657	1,695,462,553	101,028,490	1.4354	1.2381
18	1,695,462,553	53,470,766	47,557,725	1,641,991,787	101,028,490		
19	1,641,991,787	54,970,621	46,057,870	1,587,021,167	101,028,490		
20	1,587,021,167	56,512,546	44,515,944	1,530,508,620	101,028,490		
21	1,530,508,620	58,097,723	42,930,767	1,472,410,897	101,028,490	1.6034	1.0702
22	1,472,410,897	59,727,365	41,301,126	1,412,683,533	101,028,490		
23	1,412,683,533	61,402,717	39,625,773	1,351,280,816	101,028,490		
24	1,351,280,816	63,125,063	37,903,427	1,288,155,752	101,028,490		
25	1,288,155,752	64,895,721	36,132,769	1,223,260,031	101,028,490	1.7910	0.8826
26	1,223,260,031	66,716,046	34,312,444	1,156,543,985	101,028,490		
27	1,156,543,985	68,587,431	32,441,059	1,087,956,553	101,028,490		
28	1,087,956,553	70,511,309	30,517,181	1,017,445,244	101,028,490		
29	1,017,445,244	72,489,151	28,539,339	944,956,093	101,028,490	2.0005	0.6730
30	944,956,093	74,522,472	26,506,018	870,433,622	101,028,490		
31	870,433,622	76,612,827	24,415,663	793,820,794	101,028,490		
32	793,820,794	78,761,817	22,266,673	715,058,978	101,028,490		
33	715,058,978	80,971,086	20,057,404	634,087,892	101,028,490	2.2346	0.4389
34	634,087,892	83,242,325	17,786,165	550,845,567	101,028,490		
35	550,845,567	85,577,272	15,451,218	465,268,295	101,028,490		
36	465,268,295	87,977,714	13,050,776	377,290,580	101,028,490		
37	377,290,580	90,445,489	10,583,001	286,845,091	101,028,490	2.4961	0.1775
38	286,845,091	92,982,485	8,046,005	193,862,606	101,028,490		
39	193,862,606	95,590,644	5,437,846	98,271,962	101,028,490		
40	98,271,962	98,271,962	2,756,529	0	101,028,490		

