National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

NEPRA Tower, Ataturk Avenue(East), G-5/1, Islamabad
Ph: +92-51-9206500, Fax: +92-51-2600026
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/TRF/STIPPs-2015/5123-5125
April 7, 2015

Subject: **Determination of the Authority in the matter of Utilization of Existing Available Generation Capacity – Policy for Short Term Independent Power Producers <u>(STIPPs) [Case # NEPRA/TRF/STIPPs-2015]</u>**

Dear Sir,

Please find enclosed herewith the subject Determination of the Authority along with Annexure-I (21 pages).

2. The Determination is being intimated to the Federal Government for the purpose of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

Enclosure: <u>As above</u>

(Syed Safeer Hussain) 07.04.15

Secretary
Ministry of Water & Power
'A' Block, Pak Secretariat
Islamabad

CC:

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

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DETERMINATION OF THE AUTHORITY

IN THE MATTER OF

UTILIZATION OF EXISTING AVAILABLE GENERATION CAPACITY POLICY FOR SHORT-TERM INDEPENDENT POWER PRODUCERS (STIPPS)

April 7, 2015

The Authority, in exercise of the powers conferred by Regulation 3(1) of Upfront Tariff (Approval & Procedure) Regulations, 2011 read with Rule 3(1) of the Tariff (Standards & Procedure) Rules – 1998 and Section 7 of the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997, and all other powers enabling it in this behalf, and after taking into consideration all the submissions made by the parties, issues raised, evidence/record produced during hearings, and all other relevant material, hereby issues this determination.

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(Khawaja Muhammad Naeem)
Member

1/4/15

(Maj. Rtd. Haroon Rashid)
Member

3. 4. 15

(Himayat Ullah Khan)
Member

3/4/2015

(Habibullah Khilji)
Vice Chairman

6/4/15

(Brig. Rtd. Tariq Saddozai)
Chairman

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07.04.15

Background:

1.1 In order to utilize existing available generation capacity in the country, Ministry of Water & Power submitted the Summary for ECC's approval on 2.1.2015. The scope of the policy in the summary is as under:

This Policy will be applicable for all power generating units that are installed or which will be installed later on without any direct patronization, protections or interference of the Government of Pakistan, except for the undisputed due payment obligations of National Transmission and Despatch Company (NTDC) for electricity that would be purchased by it under this Policy.

1.2 The subject Summary was considered by the ECC on 10.1.2015. The Summary of the Ministry of Water & Power along with decision of ECC's decision No. 02/01/2015 dated 10.01.2015 regarding *"Utilization of the Existing Available Generation Capacity – Policy for the Short-term IPPs"* was communicated to NEPRA on 16th January 2015 **(Annex-I)**. The decision of ECC is reproduced as under:

"The Economic Coordination Committee of the Cabinet considered the Summary, dated 2nd January 2015 submitted by the Water & Power Division on "Utilization of the Existing Available Generation Capacity – Policy for Short-term IPPs" and approved the proposal contained in Annex-I of the Summary and further allowed 3 years exemption given on temporary import of power generation machinery and equipment for supply of electricity to national grid / bulk purchaser subject to condition that it would not be re-exported and should not be used for the purpose other than it was imported as earlier envisaged under SRO 567(I)/2006 dated 05-06-2005. NEPRA would determine upfront tariff for these projects. The term of the project would be 3 years."

2 Proceedings

2.1 Considering the Economic Coordination Committee of the Cabinet (ECC) decision dated 10.01.2015 and in exercise of the powers conferred by Regulation 3(1) of Upfront Tariff (Approval & Procedure) Regulations, 2011 read with Rule 3(1) of the Tariff (Standards & Procedure) Rules – 1998 and Section 7 of the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997, the Authority decided to initiate suo moto proceedings with respect to the development of upfront tariff for Short-term Independent Power Producers (STIPPs) – Utilization of Available Generation Capacity for the period of 3 years. Keeping in view the Summary of the Ministry of Water & Power, and benchmarks available with NEPRA in the cases of RFO based Independent Power Producers (IPPs), the following proposal was developed:

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Energy Charge and Capacity Charge (on take & pay basis considering 88% plant availability) on the basis of Weighted Average Cost of Capital (75:25 debt equity) along with (depreciation as a principle repayment) for the period of three years.

2.2 Following generation tariff was developed for input / comments of the stakeholders:

Generation Tariff for Short-term Independent Power Producers (STIPPs)

	Energy Purchase Price (Rs./kWh)				Capacity Purchase Price (PKR/kW/Hour)								Total
Year	FCC	Var. O&M		Total	Fixed O&M		Cost of	Ins.	WACC	Depr.	Total	CPP @	Tariff
		Foreign	Local	EPP	Local	Foreign	W/C				CPP	88% PA	Rs. /kWh
1	10.39724	0.6794	0.2098	11.2864	0.1473	0.1288	0.1669	0.0234	0.4796	0.1851	1.1311	1.2854	12.5718
2	10.39724	0.6794	0.2098	11.2864	0.1473	0.1288	0.1669	0.0234	0.4543	0.2104	1.1311	1.2854	12.5718
3	10.39724	0.6794	0.2098	11.2864	0.1473	0.1288	0.1669	0.0234	0.4256	0.2391	1.1311	1.2854	12.5718

2.3 The above tariff was based on the following assumptions:

- Rs. 45,000 per M.Ton fuel price in case of RFO based power plants.
- Variable & Fixed O&M, Working Capital on the basis of RFO based IPPs.
- Efficiency of 38.3% on RFO fuel.
- Insurance 1% of the EPC cost i.e. US$ 0.2 million.
- Project cost assumed as US$ 0.3 million per MW.
- IRR 15%

2.4 The proposed terms and conditions were as under:

- Fuel shall be the responsibility of the power producer
- Interconnection shall be the responsibility of the power purchaser
- Merit Order shall be strictly followed by the NPCC
- Tariff shall be on take and pay basis
- Tariff, eligibility criteria and terms and conditions laid down by the Authority shall be part of the Power Purchase Agreement

2.5 The eligibility criteria developed for the STIPPs were as under:

- Permissions from the relevant agencies for the utilization of plant and machinery
- Incorporation of Special Purpose Company under the laws of Pakistan
- Project Company to obtain Generation License from NEPRA
- No objection from NAB for utilization of plant and machinery (in case of defunct rental projects);
- Unconditional and irrevocable waiver of claims of arbitration against Government of Pakistan, and its entities (in case of defunct rental projects).

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- The power producer shall submit the consent from the power purchaser for purchase of electricity along with the power evacuation plan
- Certificate from an Independent Engineer that the generation equipment and machinery is fit and safe for power generating operations

2.6 Following issues were also approved by the Authority for input of the stakeholders:

- Whether the proposal with respect to the project cost of US$ 0.3 million per MW is reasonable?
- Whether the proposed O&M cost for RFO based STIPPs is reasonable?
- Whether the variable O&M cost is reasonable?
- Whether IRR of 15% is reasonable?

3 Hearing

Hearing in the matter was scheduled on 23.2.2015 at NEPRA Tower. The notice of hearing in the matter was published on 13.2.2015 in daily "The News". Individual notices were issued to all the stakeholders. In response one intervention request was received from Anwar Kamal Law Associates. The Energy Department Government of Sindh, Gulf Power, Reshma Power and Power Purchaser submitted the comments in the subject matter. The hearing was held as per advertised schedule which was attended by the representatives of the stakeholders. However, the intervener did not participate in the hearing.

4 Intervener's Concerns

4.1 The intervener submitted that:

- In accordance with the 18th Amendment, the subject of 'Electricity' has been placed in the Federal Legislative List at Entry No. 4 Part-II. This Entry was earlier listed under the Concurrent Legislative List at serial No.34. In view of the amendment, for any Policy decision on the subject of 'Electricity', the competent forum is now the Council of Common Interest rather than the ECC.
- It appears that this is an effort to accommodate the Power Plants which were earlier set up under the scheme of Rental Power Plants. The contracts, under which these were either commissioned or under the process of commissioning, were rescinded by the Order of the Honorable Supreme Court of Pakistan (in Human Rights Cases No. 7734-G/2009, 56712/2010 & 1003-G/2010) on the charge that these contracts were non transparent and illegal (The Judgment has since been reported as 2012 SCMR). 773. It was held by the Supreme Court that all functionaries, including Sponsors of the RPPs who had derived financial benefit from the RPP contracts are, prima facie, involved in corruption and corrupt practices, therefore, they are liable for both civil and criminal action.
- The cases are under enquiry in the National Accountability Bureau (NAB). The Review Applications of the GOP and the RPPs in respect of the decision of the Supreme Court are pending for adjudication and were last fixed for hearing before

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Bench I of the Supreme Court on 11.02.2015 and were adjourned on the request of the Federation.

- Even if the Sponsors got themselves cleared from NAB after a process of 'Plea Bargain', they continued to remain tainted.
- After the judgment of the Supreme Court of Pakistan, these Projects should have been de-commissioned, and the machinery should have been re-exported as per the terms of their contracts and the conditions of their import. If these Plant(s) were installed on NTDC or DISCOs' land and/or connected with the Transmission and sub-Transmission system of NTDC, they should have been dismantled from these sites.
- NEPRA should not process the applications of those Power Plants which were brought in the Country under the RPP scheme and the Supreme Court has declared their contracts illegal and void ab-initio.
- The fresh induction of oil based Power Plants of 38.3% efficiency at this point of time is an act likely to push Pakistan further back in economic terms for the benefit of a few profit seekers.
- The CPPA/NTDC is unable to take the power generated from Saba Power Generation Company, Japan Power Generation Limited, SEPCOL Power Generation Company and K-Electric Power Limited due to issues of efficiency despite the fact that consumers of electricity have already paid off their debt. The consumers of electricity are paying Capacity Purchase Price to GENCOs, KAPCO and other Power Plant owners without taking electricity from them because these Power Plants have long term agreements/commitments with the Power Purchaser on "take or pay" basis. Further, NTDC is also charging Tariff on account of the interconnection and transmission facilities (WACC/RAB) which it has already constructed for these Power Plants.
- The Reference RFO price has been assumed at Rs. 45,000/ M. Ton (Excl. Freight); the price excluding freight may not give a correct picture for the actual EPP to be paid by the consumers. It is a matter of concern that when the Authority assumes the RFO price in the cases of consumers of the DISCOs, it is considered on the higher side while assumptions here are on the lower side when compared to the projected fuel price in the matter of DISCOs' Tariff. It is requested that NEPRA should up-date all its Tariffs along with all their components on monthly basis and all the assumptions should be the same to get a comparison on 'apple to apple' basis.
- The O&M cost comparison is required to be made with GENCOs, other IPPs and KEL Power Plants to have a sound basis for the proposed O&M for STIPPs in comparison to the other Power Plants already supplying power in the system.
- The Supreme Court of Pakistan has already observed in its judgment that the issue of capacity is not that serious as is being presented and highlighted. The country's available capacity, which is supplying electricity under long term contracts on 'Take or Pay' basis is not being utilized to its full capacity while consumers are paying for the idle capacity as also increased Tariff in addition to facing the problem of serious

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load shedding. With this "initiative", the consumers of Pakistan will continue to pay for idle capacity and the Power Plants brought in Pakistan through corrupt practices, as per Supreme Court Judgment, will start getting the profits.

5 Comments of Energy Department, Government of Sindh

Energy department Government of Sindh has submitted the following comments;

- Proposed tariff of Rs. 12.5718/kWh is on higher side, the Authority to examine it on the basis of lower tariffs approved like coal based power projects.
- The 15% IRR similar to thermal power plants be looked into which is on higher side.
- The proposed rate of KIBOR 10.18% also be examined.
- The project cost for the Short-term Power Projects also is on higher side.

6 Comments of Gulf Power Company

6.1 The proposed project cost is not at all reasonable. This cost is unrealistic and grossly under-estimated. No basis for the estimation of this cost has been provided. In this connection, Gulf Power submitted the followings for the consideration of the Authority:

a. The project cost of US$ 0.3 million per MW as proposed is net of the plant auxiliaries load whereas the industry practice is to indicate plant specific cost inclusive of the auxiliaries load and the electrical losses which are about 3% in the case of Reciprocating Engine-based plants. The auxiliaries load and the electrical losses are an integral part of energy generation process of the power plant and have to be accounted for. Taking that into account, the project cost proposed for the upfront tariff is actually US$ 0.291 million per MW(Gross), which is even more unrealistic.

b. On the request of the GOP, Asian Development Bank has carried out review/audit of the Rental Power Projects contracted/installed in Pakistan. An extract from the para 19 of Appendix 1 (relevant page enclosed) of the ADB final report dated January 2010 titled 'Islamic Republic of Pakistan, Rental Power Review' relating to the cost of setting up of rental power plant is reproduced for ready reference:

"... ..... The cost of setting up of rental power plant is around $.6 million per megawatt which has a financial responsibility of the investor — with no GOP financial implication."

ADB may have estimated the cost based on the projects executed in other countries particularly in Asia and with due regard to the political and security situation in Pakistan. Unless there are very strong reasons to reject it, this cost may be considered for the proposed upfront tariff. Given the volatile situation prevailing in the country at that time and a lot of criticism in the press, Gulf Power feel that it may have been estimated at the lower side.

c. New IPP plants of the same technology have been contracted in the years 2006-2009 under the GOP's Power Policy 2002. Atlas Power and Liberty Power are one of those projects. Their project cost as at COD is US$ 253.85 million for 225 MW plant and $240.24 million for 200 MW plant respectively. The specific project cost per MW works out as US$ 1.128 million and $1.201 million respectively. The average project cost for a new model

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plant works out to around US$ 1.16 million per MW. Discounting it by 10% for the technology development of the new plants, the average project cost for a new plant of the old model of the same technology will be $1.044 million per MW. The depreciated value of this old model plant has been worked below for two scenarios; one for a ten (10) year old plant and the other for a twelve (12) year old plant assuming a total useful life of 25 years and a straight line depreciation of plant at 4% per annum.

Amount in million $/MW

Description	10-Year Old Plant	12-Year Old Plant
Project Cost of New Model Plant (Average)	1.1600	1.1600
Less for Technology Development (10%)	0.1160	0.1160
Project Cost of Old Model Plant	1.0440	1.0440
Less Land & Development Cost (15%)	0.1566	0.1566
Cost of Old Model Plant	0.8874	0.8874
Less Depreciation (4%/a)	0.3550	0.4260
Depreciated Cost of Old Model Plant	0.5324	0.4674
Add Land & Development Cost	0.1566	0.1566
Depreciated Cost of Old Model Plant	0.6890	0.6180
Less Custom Duties on Plant & Equipment	0.0172	0.0155
Cost of Plant Excluding Custom Duties	0.6718	0.6026
Add Costs for Accelerated Completion (5%)	0.0345	0.0309
Estimated Project Cost of STIPP Plant	0.7063	0.6335

The estimated project cost per MW of STIPP plant works out $0.7063 million and $0.6335 million for a ten year old and twelve-year old plant respectively even without considering cost of the new equipment installed to improve the availability and reliability of the plant, decommissioning and repatriation costs are also not included.

In view of above, the project cost may be fixed between $0.6 million stated in the ADB report and $0.7063 million as worked out above.

Whether the proposed O&M cost for RFO based STIPPs is reasonable? & Whether the Variable O&M cost is reasonable?

Keeping in view that the plants are old, dismantled, shipped, transported and reinstalled and have undergone a lot of stresses and strains, their maintenance requirement will be comparatively higher, the costs proposed for the O&M (both Fixed and Variable) are considered on the lower side. GPPL feel that these components need to be increased by at least 10% to cater for the additional maintenance requirements. Similarly, being old plants and involving higher risk, the insurance cost may be at least brought to the level of the IPPs i.e. 1.35% of the EPC cost as revised pursuant to our request for increase in the Project/EPC

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cost. The financing cost of Working Capital may also be enhanced for increase in the O&M costs and the interest rate as K1BOR plus 2.5% instead of K1BOR plus 2%.

GPPL understand and request to confirm in the Upfront Tariff that all the tariff components shall be indexed quarterly exactly in the same manner as allowed to the 1PPs to avoid any discrimination.

Whether the IRR of 15% is reasonable?

The new IPP plants of the same technology are provided additional incentives such as Sovereign guarantee by the GOP, guaranteed capacity payments irrespective of the plant dispatch, paid outage allowances, compensation on termination of any concession agreement for breach and default by the Power Purchaser, GOP, Public Sector entities, etc. Since ST1PPs are not provided these incentives, their IRR should have been higher.

- In the Weighted Average Cost of Capital, the return on equity rate has been taken as 15%, which is not IRR based. The return on equity should be IRR based as allowed to thermal IPP projects.

- The depreciation may be worked out at 10% per annum considering remaining useful life of the plant as ten (10) years. No salvage value may be considered as the de-commissioning and repatriation costs will be higher than the salvage value.

Other Issues

Plant Efficiency

The efficiency of a plant usually covers the following:

- Plant capacity and heat rate degradation over time;
- Engine start-up on HSD;
- Partial load heat rate adjustments for start-up/stop of each Engine and for partial load operation; and
- Oil leakages/wastage.

The upfront tariff is based on a plant efficiency of 38.3%, which is considered on the higher side. In its policy for New Captive Power Producers, PEPCO had allowed a tariff of Rs. 6.67/kWh for purchase of RFO-based surplus energy from the Captive Power Plants (CPPs) on Take-and-Pay basis. No capacity is required to be guaranteed in such cases. GPPL understand that some units have already been connected to the DISCOs' system on this tariff. The Fuel Cost Component in this tariff is Rs. 5.41/kWh based on RFO price of Rs.22,096/- per metric ton. This translates to a Net Plant Efficiency of 36.15%. GPPL requested the Authority to reconsider the specified level of efficiency and reduce the same.

Indexation of Tariff Components

GPPL requested that that all tariff components including WACC, Cost of Working Capital, etc. should be indexable as per the tariffs of IPP thermal power plants to avoid any discrimination.

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Other Concessions

Withholding Tax @ 7.5% of the dividend is permissible to the IPPsof thermal power plants. Payments into Workers' Welfare Fund and Workers' Profit Participation Fund are also reimbursable to thermal IPPs. The same concessions may also be allowed to STIPPs.

7 Comments of Reshma Power Company

7.1 Reshma Power Company endorsed and adopted the comments of Gulf Power and stated that its comments are same as of Gulf Power.

8 Comments of NTDC

8.1 NTDC submitted the following comments:

- Fuel Cost Component

  The fuel cost component has been proposed on the basis of 38.3% efficiency. It is not clear whether this is net efficiency or gross efficiency; NTDC understand and believe that the Authority has proposed even lesser efficiency as compared to the Power Plant established under 1994 power policy in Pakistan. NTDC believes that efficiency benchmark should be at least 38.6% (net) for STIPPs.

- Variable O&M

  The proposed variable O&M cost is Rs. 0.8892 which is even higher / comparable with the Diesel Engine based combined cycle power plant (i.e. Atlas & Liberty Power Tech.). It is pointed out that variable O&M allowed to Diesel Engine based RFO fired power plants developed under Pakistan Power Generation Projects Policy 2002 has a steam turbine and cost of de-mineralized water. Steam turbine, coal tower and other such auxiliaries consume a significant cost, so it is suggested that variable O&M to STIPPs be allowed at a lower level as compared to the RFO fired IPPs developed under 2002 power policy. It is further pointed out that variable O&M cost of IPPs also include cost of annual maintenance and major overhauling cost, which in cases of STIPPs would not happen in three years of term.

- Fixed Cost Component

  The proposed fixed cost component is even higher than what NEPRA has allowed to RFO based Diesel Engine Power Projects developed under 2002 power policy. For example, fixed O&M allowed to HUBCO Narowal is Rs. 0.2560/kWh in comparison to the proposed fixed cost component of Rs. 0.3148/kWh for STIPPs.

9 Issues-wise Discussion & Determination

9.1 The issue-wise discussion and determination is given as under:

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10 **Whether the proposal with respect to the project cost of US$ 0.3 million per MW is reasonable?**

10.1 The project cost of the US$ 0.3 million per MW was considered reasonable on the basis of per MW cost of RFO based Independent Power Producers (IPPs) which is around US$ 1.1 million per MW. The basic purpose of the project cost is calculation of return which is 15% IRR as in the case of other RFO based IPPs. 051-9205003

10.2 Except Gulf and Reshma, the Energy Department Government of Sindh and the Power Purchaser also stated that the project cost assumed by the NEPRA for return purpose is on higher side. The Reshma Power and Gulf requested that the return shall be calculated on the basis of the cost estimated by the ADB in its report published in 2010. It is to be noted that the ADB cost is also on estimation for which no basis is indicated. The Authority feels that the concerns of the Gulf Power are contradictory to the calculations submitted by them with respect to the project cost. Even if the same basis of the Gulf Power is used, the assessment of US$ 0.3 million per MW is comparable.

10.3 As regards the concerns of the intervener that regulator is encouraging RPPs it not correct. The utilization of existing available generation capacity is for mitigating the demand supply gap. The Authority considers that the regulator has to protect not only the consumer's interest but has to keep in view the GOP socio economic policies while deciding the cases. In view thereof it is in the consumer's interest that available generation capacity in the country is utilized in optimum manners to minimize the prevailing load-shedding in the country. Additionally the electricity is also required to run the country's economy for generating more employment. Since the arrangement for short-term IPPs will be on take and pay basis; therefore in case of no supply from the producers there will be no capacity charges or any penalty will be required to be paid. The plants will only be operated when power is really needed. The producer will be paid only when it will deliver and in case of no supply there will be no payment. In case the Ex-RPPs intends to accept the NEPRA determined Upfront tariff then they will have to meet the criteria set by the Authority which requires certificate from the relevant agencies i.e. NAB, power purchaser, GOP etc.

10.4 In the instant case the rationale for using Weighted Average Cost of Capital (WACC) based return is due to the very fact that these plants are used and it is very difficult to determine reference/similar parameters as those of IPPs. For making fair assessment, the depreciation in lieu of debt servicing has been considered a judicious mechanism which is calculated on the basis of remaining useful life of the project. Since the debt servicing approach has been adopted; therefore instead of ROE the WACC approach has been considered. Keeping in view the dismantling cost and other associated costs, the project cost assumed by NEPRA for the purpose of calculation of return i.e. US$ 0.3 million per MW is considered reasonable.

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11 Whether the proposed O&M cost for RFO based STIPPs is reasonable?

11.1 The Energy Department Government of Sindh and Power purchaser stated that the O&M cost indicated is on higher side, whereas Gulf and Reshma power requested the Authority to allow 10% increase in the proposed O&M cost. According to Gulf and Reshma Power, the main reason for increase is old plants which were dismantled, shipped, transported and have undergone lot of stresses and strains, their maintenance requirement will be comparatively higher. According to Gulf and Reshma Power, the fixed O&M cost is on lower side.

11.2 The Authority having considered the contention of the Gulf & Reshma is of the view that both have not provided any documentary evidence in support of increase in the O&M expenses. In the absence thereof the Authority cannot accept the same; therefore for making assessment, the already available benchmarks for similar technology are considered. The fixed O&M cost allowed to the IPPs consists of salaries, wages, security and other operational expenses which are fixed in nature. The NTDC's comments that fixed O&M for STIPPs is on higher side as against HUBCO-Narowal is not correct since the 88% plant availability factor has not been accounted for by the NTDC. The fixed O&M allowed to the RFO based IPPs on the basis of January-March 2015 quarterly indexation is as under:

	Fixed O&M		Total @ 88%
	Foreign	Local	plant availability
Atlas	0.1252	0.1474	0.3098
HUBCO	0.1875	0.0685	0.2909
NPL	0.1299	0.1526	0.3210
NPCL	0.1296	0.1524	0.3205
Liberty	0.1548	0.1199	0.3122
	Average Rs./kWh		0.3109

11.3 The dismantling and shipping cost has been covered in the project cost therefore has no relation with the fixed cost. The Reshma and Gulf Power submitted general remarks without any documentary evidence whereas in the case of RFO based IPPs the due diligence was done on the basis of documentary evidence submitted by the different IPPs. The Authority has already carried out detailed analysis and allowed the fixed O&M to the IPPs on case to case basis. Furthermore, the salaries wages and other costs can be managed through better management. In view thereof the enhancement request of Reshma and Gulf is not justified.

11.4 The fixed O&M in the case s of IPPs has been compared which varies from Rs. 0.2909/kWh to Rs. 0.3205/kWh. The average of RFO based IPPs is Rs. 0.3109 /kWh as against the proposed fixed O&M of Rs. 0.3098/kWh. Furthermore, the cost of the manpower required for operating power plant on short-term basis is always on higher side. This is specialized field and requires special skills therefore for short-term arrangement the salaries and wages may be on higher

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side. Keeping in view the short-term period i.e. three years, the proposed fixed O&M of Rs. 0.3098/kWh seems reasonable and is allowed.

11.5 Cost of Working Capital

11.6 The proposed cost of working capital was proposed as Rs. 0.1897/kWh. The Reshma and Gulf submitted that the financing cost of working capital may also be enhanced for increase in the O&M cost and the interest rate as KIBOR plus 2.5% instead of KIBOR + 2%. The Reshma and Gulf Power also requested to allow indexation in line with the IPPs.

11.7 The Gulf and Reshma request for indexation of cost of working capital with KIBOR + 2.5% instead of KIBOR +2% is not justified since no documentary evidence, supportive documents were provided along with the submission. The Authority in the case of IPPs after carrying out due diligence allowed indexation of cost of working capital with KIBOR + 2%. On the same basis and keeping in view the per M.Ton price of Rs. 40,000, KIBOR 9.63% + 200 points spread, the cost of working capital in the instant case has been assessed as Rs. 0.1725/kWh and the same is allowed in the instant case.

11.8 Insurance

11.9 The proposed insurance component was Rs. 0.266/kWh. The Reshma and Gulf Power submitted that the same being on lower side needs to be reviewed. According to Reshma and Gulf the insurance cost should be in line with the RFO based IPPs which is 1.35% of the EPC cost.

11.10 The Authority, having considered the submission, noted that during operational period, in most of the cases the actual insurance cost being submitted by the IPPs for adjustment remains in the range of 1% or less. Furthermore, the Authority in case of Solar and Wind Power Projects allowed 1% insurance cost during operational period. Therefore, after adjusting the exchange rate of 100.60 PKR/US$, the assessment of Rs. 0.0261/kWh on account of insurance is considered reasonable therefore is allowed.

11.11 Withholding Tax on Dividends

The Authority in the case of IPPs has been allowing withholding tax on dividends. The Authority has now in principle decided that this will not be allowed in future. The Authority considers that any tax on profit received in the shape of dividend is the responsibility of the shareholders and it finds no justification to allow such taxes to be passed on to the end-consumers. On the same principle the Authority has not provided withholding tax in the case of Upfront Tariff of Coal, Solar and Wind Power Projects. The Authority considers that Reshma & Gulf request in this regard is without any rationale. The workers welfare fund and workers profit participation fund are considered pass through in the case of IPPs. The same treatment in the instant case is also allowed. However the same shall be considered based on the documentary evidence submitted by the power producer.

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12 **Whether the variable O&M cost is reasonable?**

12.1 The variable O&M cost of Rs. 0.8892/kWh was assumed in the proposal published in the national newspapers. The variable O&M cost includes lubes, consumables, repair & maintenance, water treatment, spare parts for major overhaul etc. The Authority in the case of RFO based IPPs allowed the variable O&M considering the aforementioned facts. The NTDC contention to the extent of water treatment is not correct since on simple cycle mode the water treatment is required for operating the power plants. The variable O&M allowed to other RFO IPPs based on January-March 2015 quarterly indexation is as under:

Rs./kWh

Variable O&M		Total
Foreign	Local	
0.6607	0.2100	0.8707
0.4593	0.3711	0.8304
0.6592	0.2094	0.8686
0.6607	0.2100	0.8707
0.6833	0.2883	0.9716
	Average	0.8824

12.2 The major overhaul is dependent upon the running hours of the power plant and plant specific technology. In the case of IPPs the major overhaul amount has been ascertained to each year keeping in view the operational cycle of the power plant. Since the assessment of IPPs has been made keeping in view their operating cycle; therefore the same is considered valid in the case of STIPPs. Accordingly they will be entitled to the extent of number of operational hours which in the Authority's opinion is fair treatment. In addition keeping in view the three years short-term operational period, a cushion has also to be considered based on the fact that the already utilized plants are old.

12.3 In view of the above, after adjusting the exchange rate and CPI, the assessed amount of Rs. 0.8707/kWh as variable O&M is considered reasonable.

12.4 **Whether IRR of 15% is reasonable?**

12.5 The Reshma Power and Gulf Power requested the Authority to allow higher return. According to the power purchaser and Energy Department Government of Sindh, the return indicated by NEPRA is on higher side.

12.6 The Authority considers that the ROE of the RFO based IPPs is higher due to 18th months construction period whereas in the case of STIPPs the construction period is about six months. Accordingly the ROE will be less in the cases of STIPPs. Accordingly in order to work out the return for STIPPs, the 15% return on 25% equity and 12.63% on 75% has been assumed. Therefore the IRR of 15% or ROE is equivalent.

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12.7 The Reshma and Gulf Power requested that the straight line method shall be used for calculation of the depreciation by not taking the salvage value of the power plant.

12.8 The Authority considers that in the case of STIPPs declining balance method is more appropriate and judicious and provides simpler solution with tariff volatility over the agreement period. Accordingly the depreciation of Rs. 0.2103/kWh, Rs. 0.2381/kWh and Rs. 0.2695/kWh for first, second and third year has been allowed in the instant case. No indexation shall be allowed in WACC and depreciation.

12.9 <u>Efficiency</u>

12.10 The proposed fuel cost component of Rs. 10.3972/kWh was calculated on the basis of net efficiency of 38.3%, CV of 18364 lb/kg and RFO price of Rs. 45,000/M.Ton excluding freight.

12.11 The power purchaser submitted that the fuel cost component has been proposed on the basis of 38.3% efficiency. It is not clear whether this is net efficiency or gross efficiency; we understand and believe that the Authority has proposed even lesser efficiency as compared to the Power Plant established under 1994 power policy in Pakistan. NTDC believes that efficiency benchmark should be at least 38.6% (net) for STIPPs.

12.12 The Reshma Power and Gulf Power submitted that the efficiency of 36.15% shall be taken based on the PEPCO policy for RFO based Captive Power Plant. The statement of the Reshma and Gulf Power is contradictory to the application filed for generation license wherein the efficiency has been submitted as 37.73%.

12.13 The Authority has carried out its evaluation and noted that the efficiency of 38.6% has been indicated for the projects under 1994 policy on RFO fuel. The Authority considers that the efficiency in the cases of the projects under 1994 policy is not only reasonable but also achievable. Accordingly based on the RFO price of Rs. 40,000/M.Ton, CV of 18,364 Btu/lb and efficiency of 38.6%, the fuel cost component in the instant case has been worked out as Rs. 9.1728/kWh.

12.14 <u>Concerns of the Intervener & Commentators</u>

12.15 The issue-wise concerns raised by the intervener has been responded as under:

A. <u>Analysis of Issued raised by the Intervener</u>

- The intervener has stated that after the 18th Amendment to the Constitution of Pakistan, 1973, the subject electricity has been placed in the Federal Legislative List and for any policy decision on the subject of 'Electricity', the competent forum is now the Council of Common Interests rather than ECC. The intervener has correctly stated the law on the subject however it is not related to case in hand. In the subject case, no policy guidelines within the meaning and scope of section 7(6) of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 regarding determination of any specific tariff has been given. Considering the decision of ECC, the Authority itself initiated Suo

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Moto proceedings and developed the tariff proposal for determination of tariff for Short Term IPPs in order to seek comments from the stakeholders in accordance with the relevant and applicable provisions of Regulations of Generation, Transmission and Distribution of Electric Power Act, 1997, NEPRA Tariff (Standards and Procedure) Rules, 1998 and NEPRA Upfront Tariff (Approval and Procedure) Regulations, 2011. The Upfront Tariff is being determined by following the due, transparent and prescribed process of determination of tariff and for that very purpose, advertisement was published in all leading newspapers along with proposed tariff and the comments/objections of all interested/affected persons and general public were sought. Further, the upfront tariff shall be determined after consideration of comments/feedback of all stakeholders and thorough due diligence by the Authority.

- Regarding comments of the intervener that the Honorable Supreme Court of Pakistan has declared the Rental Power Plants as illegal and non-transparent and notice of hearing appears to be an effort to accommodate the power plants which were earlier set up under the scheme of Rental Power Plants. In response to the intervener view, it is stated that the rental power plants were rescinded by Honorable Supreme Court of Pakistan on the ground that they were non-transparent and the tariff and efficiency benchmarks were not fixed by NEPRA by following the due process of law. The rental plants were not declared illegal in itself and in fact it was the process that was not transparent which became the very basis of the findings and the decision of the Honorable Supreme Court of Pakistan. In the instant case, the Authority has initiated a due process of law for determination of upfront tariff. Further the tariff of the plants established under this Upfront Tariff shall be on take and pay which means that no capacity payment will be made in case the plant are not operated and they will get single part tariff only if they despatch power after meeting the economic despatch criteria. The interveners concerns that NEPRA is encouraging the corrupt power plants are not justified. The consultative process for input of the stakeholders was initiated to develop the Upfront generation tariff for utilization of available generation capacity. The vision of introducing the Power Policy 2013 is to support the current and future energy needs of the country to set Pakistan on trajectory of rapid growth and social development and to get the Pakistan out from the challenges faced by energy crises. The goals mentioned in the policy include building a power generation capacity that can meet Pakistan's energy needs in a sustainable manner. The country is facing shortage of electricity and generation of even a single MW is crucial / essential/ necessary for the future of the industries and growth of the country. In the context of the demand supply gap and time period for construction of the RLNG, Hydel, coal power plants 3-5 years, the GOP took initiative to utilize the existing available generation capacity in the country. The Authority keeping in view the socio economic objectives of the GOP, demand supply gap and economic effect of the non-availability of the electricity on the country decided to initiate suo moto proceedings. In case the Ex-Rental Power Plants requested for opting the Upfront Tariff, then they have to meet the

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terms and conditions and eligibility criteria after fulfillment of which they will be allowed to sell electricity to the national grid. In view thereof the contention of the intervener in this regard is not valid.

- As regards efficiency, the efficiency benchmarks shall be fixed by NEPRA and no guaranteed despatch is envisaged to be provided to the plants. These plants will be dispatched only if they meet the efficiency benchmarks and economic dispatch criteria. Further there is no comparison between IPPs established under long term agreements and the plants, if any established under this Upfront Tariff Regime as no capacity payments, sovereign guarantees and guarantee payments shall be made to these power plants and if they fail to meet the minimum benchmarks prescribed by the Authority then that will be sole risk and loss of power producers.

- Regarding concessions to these plants, it is stated that no concessions or undue benefits have been awarded to any of the plants in the tariff proposal and in the final Upfront Tariff Determination of the Authority. As per proposal and determination of the Authority, any plant can come and opt the tariff in the manner prescribed in NEPRA Upfront Tariff (Approval & Procedure) Regulations, 2011 and the tariff shall not be limited to any specific category of the plants or rental power plants as stated by intervener.

- As regards the Idle capacity in the country, the demand supply gap is increasing in the country due to which additional generation is required. Most of the hydel power plants are at feasibility and EPC stage. Similarly the coal power generation plants require longer period for achieving commercial operation date. In addition to that, the RLNG is in process and it is expected that in coming future the RLNG power projects will become operational in 3-4 years. In meanwhile there is a need to bridge or at least reduce the gap between power demand and supply until the large base load power generation plants achieve commercial operations utilization of existing available generation capacity is in favour of the end-consumers. These plants will be on take and pay basis and no capacity payment shall be made to these power projects in case of no dispatch.

- The generation tariff for STIPPs is for the period of three years. The efficiency has been increased to 38.6% for the RFO based power plants. Furthermore, the merit order shall be followed by the NPCC. In case these power plants do not fall under the merit order they will not be able to deliver the electricity. Most of the GENCOs plants efficiency is in the range of 23-34%. These power plants would enable the power purchaser to evacuate electricity from the efficient power plants. Thus the basket per unit cost of the electricity from not taking the in-efficient plants shall become lower.

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- As regards the SEPCOL and Japan Power, these power plants are operating under 1994 policy. They have the Power Purchase Agreement with the power producer. These power plants have to operate in the legal regime in which they are operating. According to the PPA, they have certain rights and liabilities which have to be fulfilled in accordance with the prescribed PPA. As regards GENCOs, KAPCO and other power plants they are operated by the power purchaser in accordance with the merit order. In order to utilize the available power generation NEPRA has issued several advisories to the GOP in this regard. With respect to the NTDC charging WACC / RAB, the instant case has no relevance with the NTDC's tariff.

- The fuel price is pass through item therefore the RFO price indicated in the proposal is reference price. The same will be adjusted based upon the documentary evidence submitted by the power producer which is in line with the IPPs adjustment mechanism. As regards the DISCOs price, the Power Purchase Price determined in DISCOs with separate method. The basket price is calculated keeping in view the generation from the different sources assuming the different month-wise prices. The same PPP is adjusted in subsequent year tariff determination keeping in view the actual fuel prices. In view thereof the same has no relevance in the instant case. The STIPPs are independent generation units the fuel price of which shall be adjusted based upon the actual price prevailing at that time.

- The O&M cost is comparable with the IPPs. No favour has been given to the STIPPs rather they are on take and pay basis. Risk of liabilities is on the part of the STIPPs. In case of IPPs the capacity charge is paid even if the IPPs are not operating however in the instant case the amount shall be paid on units delivered basis. In view thereof the interest of the consumer has been protected.

- The export or import decision is the prerogative of GOP and not fall under the domain of NEPRA.

13. ORDER

In exercise of the powers conferred by Regulation 3(1) of Upfront Tariff (Approval & Procedure) Regulations, 2011 read with Rule 3(1) of the Tariff (Standards & Procedure) Rules – 1998 and Section 7 of the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997, the Authority hereby determines and approves the following upfront tariff and indexations for RFO based Short-term Independent Power Producers for delivery of electricity to the power purchaser on take and pay basis:

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Reference Tariff

Tariff Components	Year 1	Year 2	Year 3	Indexation
Fixed Cost Component PKR/kWh)				
O&M	0.3098	0.3098	0.3098	Local CPI quarterly basis
Cost of Working Capital	0.1725	0.1725	0.1725	KIBOR
Insurance	0.0261	0.0261	0.0261	-
WACC	0.5177	0.4899	0.4584	-
* Depreciation	0.2013	0.2381	0.2695	-
Total Capacity Charge	1.2363	1.2363	1.2363	
Energy Charge on Operation on RFO Rs./kWh				
Fuel Cost Component	9.1728	9.1728	9.1728	Fuel Price
Variable O&M	0.8707	0.8707	0.8707	Local CPI quarterly basis

Note: i) Component wise proposed tariff for operation on RFO is indicated at Annex-I.

1. The following indexation shall be applicable to the reference tariff as follows;

i) **Fixed O&M**

F O&M $_{(REV)}$ = Rs. 0.3098/kWh × CPI $_{(REV)}$ / 198.80

Where:

F O&M $_{(REV)}$ = The revised applicable Fixed O&M Local Component of the Fixed Cost Component indexed with Local CPI on quarterly basis

CPI $_{(REV)}$ = The revised Local CPI (General)

ii) **Variable O&M**

The formula for indexation of variable O&M component will be as under:

V O&M $_{(REV)}$ = Rs. 0.8707/kWh × CPI $_{(REV)}$/198.8

Where:

V O&M $_{(Rev)}$ = The revised applicable Variable O&M Component of the Fixed Cost Component indexed with local CPI on quarterly basis.

CPI $_{(REV)}$ The revised local CPI (General)

Terms & Conditions:

- Fuel shall be responsibility of the power producer
- Interconnection shall be responsibility of the power purchaser

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- Merit Order shall be strictly followed by the NPCC
- Tariff shall be on take and pay basis
- Tariff, eligibility criteria and terms and conditions laid down by the Authority shall be part of the Power Purchase Agreement

Eligibility Criteria

- Permissions from the relevant entities for the utilization of plant and machinery, where applicable.
- Incorporation of Special Purpose Company under the laws of Pakistan
- Project Company to obtain Generation License from NEPRA
- No objection from NAB for utilization of plant and machinery (in case of defunct rental projects) where applicable
- Unconditional and irrevocable waiver of claims of arbitration against Government of Pakistan, and its entities (in case of defunct rental projects), where applicable.
- The power producer shall submit the consent from the power purchaser for purchase of electricity along with the power evacuation plan

Indexation

The Authority has decided to allow indexation on account of variable O&M, fixed O&M on quarterly basis with local CPI. In case of cost of working capital the same shall be adjusted on the basis of quarterly KIBOR. The fuel price adjustment shall be made in accordance with the IPPs prescribed mechanism. The power producer shall submit the relevant documents indicating the fuel price, freight etc for adjustment of the fuel price variation and within 7 working days the adjustment on account of fuel price variation will be made.

The above determination is intimated to the Federal Government for notification in the official gazette under section 31(4) of the Regulations of Generation, Transmission, and Distribution of Electric Power Act, 1997.

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Annex -I

Generation Tariff for Short-term Independent Power Producers (STIPPs)

	Energy Purchase Price (Rs./kWh)			Capacity Purchase Price (PKR/kWh)						Total
Year	Fuel Component	Var. O&M	Total EPP	Fixed O&M	Cost of W/C	Insurance	WACC	Depreciation	Total CPP	Tariff Rs./kWh
1	9.1728	0.8707	**10.0435**	0.3098	0.1725	0.0261	0.5177	0.2103	1.2363	**11.2799**
2	9.1728	0.8707	**10.0435**	0.3098	0.1725	0.0261	0.4899	0.2381	1.2363	**11.2799**
3	9.1728	0.8707	**10.0435**	0.3098	0.1725	0.0261	0.4584	0.2695	1.2363	**11.2799**

* The variable & fixed O&M shall be indexed on quarterly basis with the local CPI. The cost of working capital shall be indexed with KIBOR

** The fuel price shall be adjusted on account of fuel price variation in accordance with the IPPs mechanism

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