

Republic of the Philippines  
**ENERGY REGULATORY COMMISSION**  
San Miguel Avenue, Pasig City

IN THE MATTER OF THE  
APPLICATION FOR THE  
APPROVAL OF THE PROPOSED  
REVISED PLANT HEAT RATES  
FOR LUZON, VISAYAS AND  
MINDANAO GRIDS WITH PRAYER  
FOR PROVISIONAL AUTHORITY

ERC CASE NO. 2009-003 RC

NATIONAL POWER  
CORPORATION (NPC),  
Applicant.  
X-----X

**NOTICE OF PUBLIC HEARING**

TO ALL INTERESTED PARTIES:

DOCKETED  
Date: FEB 03 2009  
By: *[Signature]*

Notice is hereby given that on January 16, 2009, the National Power corporation (NPC) filed with the Commission, pursuant to the provisions of Republic Act No. 9136, an application for the approval of the proposed revised plant heat rates for Luzon, Visayas and Mindanao Grids, with prayer for provisional authority.

In the said application, NPC alleged, among others, the following:

1. It is mandated under its Charter to undertake the development of hydroelectric generation of power and the production of electricity from nuclear, geothermal and other sources of energy in order to attain, among others, the objective of providing adequate and reasonable price of electric power nationwide;
2. It is filing the instant application in its capacity as the owner of record of all the existing generation assets and energy, and also as implementing agency for the unbundled generation rates as approved by the Commission in its Orders dated September 6 and 20, 2002 under ERC Case No. 2001-901 and the ERC approved revised generation charges dated September 3, 2004 and April 13,

2005 in ERC Case No. 2004-178, and all Orders/Decisions relative to applications filed under the Generation Rate Adjustment Mechanism (GRAM);

3. On June 30, 2008, the Commission in ERC Case No. 2004-111 issued its Decision approving the new heat rate caps and Heat Rate (HR) degradation factors applicable to all NPC-owned as well as NPC-Independent Power Producer (IPP) power plants;

### **The Existing Heat Rate Caps**

4. It filed the application docketed as ERC Case No. 2004-111 pursuant to a directive for it to file an application for approval of the proposed HR caps and Heating Values of the different types of fuel as updated to Calendar Year 2003 levels. The filing of the application was also necessary as the existing HR caps are no longer reflective of the quality of actual fuel deliveries and actual efficiencies of its own power plants and IPPs. Since the approval by the then Energy Regulatory Board (ERB) of the existing HRs and HVs in 1993 for Visayas and Mindanao, and in 1996 for Luzon, said HRs and HVs were never updated even with the adoption of the GRAM in October 2002;
5. Even prior to the issuance of the Decision in ERC Case No. 2004-111, It has proposed for the updating of the existing heat rate caps by using an assumed net degradation factor of less than one percent (1%) or merely point three seven five percent (0.375%) per annum under its GRAM applications starting with its 7<sup>th</sup> GRAM in ERC Case No. 2006-073 RC. However, the Commission, in approving said GRAM application on February 7, 2007, did not concur with its assumptions prompting it to file a "Motion for Reconsideration" on August 3, 2007, which is yet to be resolved by the Commission up to this date;
6. In its application under ERC Case No. 2004-111, it raised the following issues relative to the continued implementation of the existing heat rate caps based on "*per fuel type and per grid*" under its GRAM applications, as well as its Basic Generation Rate applications:
  - i. The actual Diesel/Bunker consumptions with generation used for dual-firing operations in order to maintain boiler flame stability (since the load dispatch of said plants are low) were not considered in the calculation of their heat rates which resulted to heat rate distortion and fuel costs disallowances. The reason is that the fuel consumption of coal-fired plants is referred solely to the volume and cost of coal consumed alone excluding actual bunker/diesel consumption.
  - ii. Another heat rate distortion to the diesel plants can be attributed to the fact that the actual Diesel/Bunker consumptions of coal-fired plants are made part of the Diesel/Bunker consumptions of the diesel plants.

- iii. Further, all the reported fuel consumptions without generation (start-up fuels) form part of the heat rate calculations and thus, further distorting the actual heat rate of its power plants.
- iv. Finally, considering that the standard HVs prescribed in the computation of the heat rate of coal-fired plants were not updated, the computed heat rates are also not reflective of the efficiencies of the plants. It is worth mentioning that these standard HVs prescribed for coals in Luzon and Visayas represent the typical HVs of Semirara coal and Cebu coal being used at its Calaca and Naga coal-fired power plants, respectively. Since then, however, imported coal supplies with higher heating value (> 10,000 Btu/lb) have been procured and used in said coal-fired power plants including the newest coal-fired power plants put up by IPPs as well as its plants like Masinloc (now privatized) and Sual;

#### **Newly Approved Net Plant Heat Rates**

7. The Commission recognized the need to set reasonable Heat Rate (HR) levels/caps to measure the plant efficiency taking into consideration the type and age of the plant. More importantly, the Commission recognized the need to resolve the above-stated issues surrounding the use of the existing HR caps and thus, issued its Decision with due consideration of the following:
  - i. New heat rate caps on a per power plant basis instead of one (1) specific heat rate cap on a per grid and per fuel type;
  - ii. New heat rate caps calculated covering fuel consumptions with generation for each particular power plant and not distorted with the inclusion of fuel consumptions without generation; and
  - iii. Heat rate cap per plant (termed as "Minimum Heat Rate") based on the lowest of the actual heat rate over a three (3) year period from CY 2004 to CY 2006. This was pursued to intentionally capture the lowest heat rate of power plants/IPP's and thus, giving customers assurance that fuel consumed beyond such heat rate caps are not passed-on to them.
8. The Commission approved two (2) sets of heat rate caps, one (1) applicable to NPC-owned power plants and another for NPC-contracted independent power producers (IPP's). For its plants, the Commission approved for adoption the minimum heat rates cited in the Decision. On the other hand, although the Commission cited minimum heat rates for the IPP's, it pointed out that said minimum heat rates only apply should there be no guaranteed heat rates agreed upon by the parties under existing/valid Power Conversion Agreements (PSA) or Build-Operate-Transfer (BOT) contracts and the like;

**For NPC Power Plants and NPC-IPPs without Contract Guaranteed Heat Rates**

9. Considering that the newly approved heat rate caps for the power plants correspond to the lowest among the actual heat rates for the period CY 2004 to CY 2006, said caps are not reflective of the most current operational efficiencies as well as the peculiarities brought about by different consumption patterns of customers, seasonal generation mix, WESM trading behaviors and system constraints/congestions, among others, present in CY 2007. For instance, power plants that are required to be dispatched at low loads to provide margin for power system security and reliability will inherently have higher actual heat rate. Thermal power plants will tend to be dispatched higher during summer months when dam water elevations in hydro power plants are low. Most of the base load and intermediate power plants that are not designed for daily start/stop operation will have higher heat rate during off-peak hours when the system demand is low and lower heat rate during peak hours when the system demand is high. System constraint/congestion such as a San Jose Transformer problem will limit the dispatch of power plants in North Luzon, resulting to high heat rate and may increase the dispatch of power plants in South Luzon, thus resulting to lower heat rate. It is inherent, therefore, that thermal power plants with higher dispatch approaching their rated capacities will have lower actual heat rates while those with lower dispatch will have higher actual heat rates. On account of the above considerations that affect the plants' heat rate behavior in relation to plant dispatch, it proposed to use a more current test period which likewise covers full annual operations of the WESM;

**Proposed Heat Rate Caps**

10. It proposes to adopt heat rate caps that would be representative of the annual average heat rate of its plants/IPPs (without contract guaranteed heat rates) and adopt the lowest actual annual average among the latest available three (3) year period, in this case, CY 2005 to CY 2007 instead of the CY 2004 to CY 2006 period under ERC Decision dated June 30, 2008 in ERC Case No. 2004-111. It also proposes an updated heat rate caps to serve as benchmarks that will penalize it for inefficient operation (for actual heat rate higher than the proposed heat rate caps herein) and allow it to retain the savings derived from efficient operation (with lower actual heat rate) to improve further the operations of its plants/IPPs.

**Proposed Heat Rate Caps Updated to CY2007, Btu/kWh**

	<b>Proposed Heat Rate Cap</b>
<b>PLANTS</b>	<b>BTU/KWH</b>
Calaca	11,439
Limay (Block A)	9,907
Limay (Block B)	9,912
Navotas	11,785
BDPP	9,447
PB 101	9,351
PB 103	9,238
PDPP	9,251
PB 102	9,175
PDPP3	8,848
NMPC 1	9,307
NMPC 2	8,949
PB 104	9,134

**For NPC-IPPs with Contract Guaranteed Heat Rates:**

11. The Commission recognized that guaranteed yearly heat rates in the approved contracts of NPC-IPPs reasonably serve as benchmark for efficient plant operation and maintenance of NPC-IPPs. However, the guaranteed heat rate provided in the existing and valid NPC-IPP contracts are based on performance test at various load levels up to contracted net capacity or guaranteed heat rate at reference capacity (usually at 100% load) but corrected to the actual average load;
12. In case of guaranteed heat rate based on performance test, it is proposing the adoption of actual heat rate, meaning full recovery of actual fuel costs with generation, if resulting performance tests indicate that the heat rate of the NPC-IPP plant passed the contract guaranteed heat rates at rated capacity. Otherwise, the equivalent cost of fuel consumed pertaining to the excess of actual heat rate vis-à-vis the guaranteed heat rate shall be disallowed for recovery. A sample determination on whether the actual fuel cost with generation of an IPP plant under this arrangement is recoverable in full or not is shown in the table below:

**Fuel Cost Recovery Determination  
 (Performance Test based)**

	2008 HR TEST BTU/KWH	2008 GNHR BTU/KWH	MARCH 2008		APRIL 2008		MAY 2008	
			ACTUAL NHR BTU/KWH	FUEL COST RECOVERY	ACTUAL NHR BTU/KWH	FUEL COST RECOVERY	ACTUAL NHR BTU/KWH	FUEL COST RECOVERY
IPP 1	6,830	6,094	6345	Partial	6291	Partial	6323	Partial
IPP 2	8,620	8,640	8701	Full	8737	Full	8769	Full
IPP 3	9,430	9,623	10635	Full	10862	Full	10556	Full
IPP 4	9,328	9,462	10793	Full	11105	Full	11243	Full

	2008 GNHR BTU/KWH	ACTUAL NHR BTU/KWH	EXCESS HR BTU/KWH	Remarks
IPP 1				
March 2008	6,094	6345	251	Equivalent cost of fuel consumed pertaining to excess HR shall be disallowed for recovery
April 2008	6,094	6291	197	
May 2008	6,094	6323	229	

13. In case of guaranteed heat rate corrected to actual average load, it is proposing the adoption of actual heat rate, meaning full recovery of actual fuel costs with generation, if computed actual monthly heat rate is equal or lower than the guaranteed heat rate corrected to the actual average load based on heat rate curve. In case the actual heat rate is higher than the guaranteed heat rate after correction based on actual average load, recovery of actual fuel costs with generation shall be limited up to the level of guaranteed heat rate corrected to the actual average load. A sample determination on whether the actual fuel cost with generation of an IPP plant under this arrangement is recoverable in full or not is shown in the table below:

**Fuel Cost Recovery Determination  
 (Heat Rate Curve based)**

	LOADING MW	2008 GNHR BTU/KWH	MARCH 2008			APRIL 2008			MAY 2008		
			ACTUAL LOADING MW	ACTUAL NHR BTU/KWH	ADJUSTED GNHR * BTU/KWH	ACTUAL LOADING MW	ACTUAL NHR BTU/KWH	ADJUSTED GNHR * BTU/KWH	ACTUAL LOADING MW	ACTUAL NHR BTU/KWH	ADJUSTED GNHR * BTU/KWH
UNIT 1	300	10360	150	11528	11532	275	10534	10468	130	11575	11783
UNIT 2	350	9862	200	10060	10439	300	10489	9905	130	11389	11169

Test Period of Recovery	Fuel Recovery		Remarks
	UNIT 1	UNIT 2	
March 2008	Full	Full	Adjusted GNHR is HIGHER than Actual HR
April 2008	Partial	Partial	Adjusted GNHR is LOWER than Actual HR
May 2008	Full		Adjusted GNHR is HIGHER than Actual HR
May 2008		Partial	Adjusted GNHR is LOWER than Actual HR

Adjustment based on "HR CURVE" means the HR equivalent based on Performance HR Curve considering the average load (MW) of the plant

**Approved Net Plant Heat Rate Degradation Factor**

14. The Commission likewise recognized the need for an Annual Heat Rate Degradation Factor (DF) in order to capture the inherent heat rate deterioration of the plants. HR deterioration is inevitable as the plant gets older despite regular preventive maintenance/overhauls. Manufacturers normally prescribed different heat rate deteriorations for their supplied plants. Part of the application is a matrix containing the Guaranteed Net Heat Rate of each NPC-IPP plant including the specific contract provision relative to the same. The matrix also provides a basis for the determination of the allowable heat rate deterioration/degradation pursuant to the pertinent provisions in the IPP contracts;
15. In the determination of the allowable heat rate degradation for its plants and IPPs without contract degradation factor or yearly guaranteed heat rates, the average annual heat rate increase from CY 2005 to CY 2007 based on historical heat rate performance tests covering CY 2004 to CY 2007 of comparable NPC-IPPs (with guaranteed heat rates) shall be used. The table below shows the actual heat rate performance tests and resulting heat rate degradation factors applicable to its plants and its IPPs without contract degradation factor:

**Heat Rate Degradation Factors**

IPP PLANT	HEAT RATE TEST RESULTS, BTU/KWH				DEGRADATION FACTORS, %			
					2004-2005	2005-2006	2006-2007	Average
	2004	2005	2006	2007	2005	2006	2007	2005-2007
BPPC	8,536	8,563	8,563	8,620	0.32%	0.00%	0.66%	0.33%
SUAL	9,180	9,284	9,375	9,430	1.14%	0.97%	0.59%	0.90%
PAGBILAO	9,138	9,179	9,137	9,326	0.44%	-0.46%	2.07%	0.69%

16. Given the above-stated annual degradation factors of comparable NPC-IPP, the proposed heat rate caps to be used for purposes of calculating allowable and recoverable fuel costs with generation of NPC-plants and NPC-IPP plants without guaranteed heat rates covering test periods starting CY 2008 should be adjusted accordingly by applying one (1) annual degradation considering that the proposed HR caps are already updated to CY2007 levels;

**Heating Values to be Used in the Determination of Allowable Fuel Costs**

17. In calculating the Allowable Fuel Cost Recovery, it proposes that the HV of the delivered coal should be based on the HV as shown in the corresponding certificates of analysis. This shall no longer be fixed at a constant value considering the diversity of coals available in the

market and the need to encourage coal supply competition. However, for Bunker and Diesel, which quality are already considered standard in the industry, use of heating values of 18,500 Btu/lb and 19,500 Btu/lb, respectively, will be used without need for submission of quality certificates;

**Methodology for Recovery of Allowable Fuel Costs without Generation**

18. In addition to the recovery of the allowable fuel costs with generation, applicant also proposed a separate mechanism for recovery of the allowable fuel cost without generation;
19. It is inevitable that the plant should start-up to operate which means it will incur fuel consumption without generation. However, unlike the main fuel of thermal power plants, efficient use of start-up fuel is difficult to determine. For one, start-up fuel consumption of the plant must not be limited to scheduled shutdowns or those instructed by the System Operations (SO) or at the instance of the Market Operator (MO). The plant would rather stay online at all times to ensure its revenues. To monitor and classify start-ups will be cumbersome, notwithstanding that such will require exchange of information between NPC and PSALM, which may be inappropriate under Wholesale Electricity Spot Market (WESM) Rules. Moreover, coordination with System Operations (SO) of the National Transmission Corporation (TransCo) or Market Operations (MO) of WESM will likewise require the consent from PSALM;
20. In view of the above circumstances, it proposes that the lowest yearly allowable start-up fuel based on the total fuel consumption without generation for the latest three (3) years operation of the plant. For purposes of computing the monthly start-up fuel consumption to be allowed, the following shall be followed:
  - a. Initial allowable monthly fuel consumption without generation shall be based on the lowest yearly fuel consumption without generation divided by twelve (12) or actual monthly fuel consumption without generation, whichever is lower;
  - b. Succeeding allowable monthly fuel consumption without generation shall be based on the lowest yearly fuel consumption without generation divided by twelve (12) plus any savings from previous monthly fuel consumptions without generation, if any or actual fuel consumption without generation, whichever is lower; and
  - c. Cumulative savings from the last month of the previous year could be carried-over to the first month or succeeding months of the forthcoming year.

**Total Allowable Fuel Costs for Recovery**

21. Using the formula indicated below, the Total Allowable Fuel Cost Recovery (with and without generation) in the GRAM or other cost recovery mechanism that may be authorized by the Commission, shall be the sum of the costs of Allowable Fuel Cost Recovery with Generation and the Allowable Fuel Cost Recovery without Generation:

$$\text{Total Allowable Fuel Cost Recovery} = \text{Allowable Fuel Cost Recovery} + \text{Allowable Start-Up Fuel Cost}$$

22. The proposed heat rate caps for the Luzon, Visayas and Mindanao Grids are based on actual operations as updated to the period CY 2005 to CY 2007 from the newly approved bases of CYs 2004 to CY2006;
23. Further, the proposed heat rate caps and heating values for Luzon, Visayas and Mindanao Grids and associated mechanism for the recovery of allowable fuel costs in the GRAM or other cost adjustment mechanism/s are just, fair and reasonable as it allows the recovery of allowable fuel costs incurred consistent with sound engineering practice and the principles of free and competitive electricity market as provided under R.A. 9136, which will ultimately redound to the best interest and benefit of the consuming public;
24. The approval of proposed heat rate caps for Luzon, Visayas and Mindanao Grids will rectify the existing methodology of determining the allowable fuel costs as follows:
- i. Replace the existing HR caps based on CY 1993 for Visayas and Mindanao, and CY 1996 for Luzon including the standard Heating Values for recovery of allowable fuel costs covering test periods up to end of CY 2007; and
  - ii. Replace the use of the newly approved heat rate caps under ERC Case No. 2004-111 in the recovery of allowable fuel costs covering test periods starting CY 2008.
25. It prays that the proposed Net Plant Heat Rate caps for its power plants and NPC-IPP plants in Luzon, Visayas and Mindanao Grids and associated mechanism for recovery of the Allowable Fuel Costs with and without generation under the existing Generation Rate Adjustment Mechanism (GRAM) or other cost recovery mechanism as may be authorized by the Commission, as well as the proposed Heating Values be approved by the Commission; and
26. It further prays that pending the necessary public hearing, a provisional authority be issued by the Commission for the adoption of the proposed heat rate caps in the GRAM and other rate applications.

The Commission has set the application for hearing on the following schedules:

Date	Proceedings	Venue
<b>Luzon</b>		
March 11, 2009 at two o'clock in the afternoon (2:00 P.M.)	Jurisdictional, Expository and Pre-Trial Hearings	ERC Hearing Room, 15 <sup>th</sup> Floor, Pacific Center Building, San Miguel Avenue, Pasig City
March 13, 2009 at nine o'clock in the morning (9:00 A.M.)	Evidentiary Hearing	
<b>Visayas</b>		
March 24, 2009 at two o'clock in the afternoon (2:00 P.M.)	Jurisdictional, Expository and Pre-Trial Hearings	Rafi-Eduardo Aboitiz Development Study Center, 35 Lopez Jaena Street, Cebu City
March 25, 2009 at nine o'clock in the morning (9:00 A.M.)	Evidentiary Hearing	
<b>Mindanao</b>		
March 31, 2009 at two o'clock in the afternoon (2:00 P.M.)	Jurisdictional, Expository and Pre-Trial Hearings	Session Hall, City Hall, City Hall Drive, Davao City
April 1, 2009 at nine o'clock in the morning (9:00 A.M.)	Evidentiary Hearing	


All persons who have an interest in the subject matter of the proceeding may become a party by filing, at least five (5) days prior to the initial hearing and subject to the requirements in the ERC's Rules of Practice and Procedure, a verified petition with the Commission giving the docket number and title of the proceeding and stating: (1) the petitioner's name and address; (2) the nature of petitioner's interest in the subject matter of the proceeding, and the way and manner in which such interest is affected by the issues involved in the proceeding; and (3) a statement of the relief desired.

All other persons who may want their views known to the Commission with respect to the subject matter of the proceeding may file their opposition to the application or comment thereon at any stage of the proceeding before the applicant concludes the presentation of its evidence. No particular form of opposition or comment is required, but the document, letter or writing should contain the name and address of such person and a concise statement of the opposition or comment and the grounds relied upon.

All such persons who may wish to have a copy of the application may request the applicant, prior to the date of the initial hearing, that they be furnished with a copy of the application. The applicant is hereby directed to furnish all those making such request with copies of the application and its attachments, subject to reimbursement of reasonable photocopying costs. Likewise, any such person may examine the application and other pertinent records filed with the Commission during the usual office hours.

**WITNESS**, the Honorable Chairperson, **ZENAIDA G. CRUZ-DUCUT**, and the Honorable Commissioners, **RAUF A. TAN**, **ALEJANDRO Z. BARIN** and **MARIA TERESA A.R. CASTAÑEDA** and **JOSE C. REYES**, Energy Regulatory Commission, this 30<sup>th</sup> day of January 2009 at Pasig City.

  
**ATTY. FRANCIS SATURNINO C. JUAN**  
Executive Director III

  
ERC/09-003 RC noph