

**GOVERNMENT OF PUERTO RICO  
PUBLIC SERVICE REGULATORY BOARD  
PUERTO RICO ENERGY BUREAU**

~~NEPR~~  
**Received:**  
**Aug 30, 2019**  
**1:35 PM**

**IN RE:**

**REVIEW OF THE PUERTO RICO  
ELECTRIC POWER AUTHORITY  
INTEGRATED RESOURCE PLAN**

**CASE NO.:**

CEPR-AP-2018-0001

**SUBJECT:**

Submittal of Redacted AES Coal Plant  
Conversion Assessment

**SUBMITTAL OF AES COAL PLANT CONVERSION REPORT  
CAVEATS AND LIMITATIONS**

TO THE PUERTO RICO ENERGY BUREAU:

**COMES NOW** the Puerto Rico Electric Power Authority through the undersigned legal representation and respectfully submits the AES Coal Plant Conversion Report and Caveats Limitations.

**WHEREFORE**, the Puerto Rico Electric Power Authority requests the Puerto Rico Energy Bureau to note the instant submittal.

**RESPECTFULLY SUBMITTED.**

In San Juan, Puerto Rico, this 30<sup>th</sup> day of August, 2019.

/s/ *Katuska Bolaños*

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## CERTIFICATE OF SERVICE

It is hereby certified that, on this same date I have electronically filed this document with the Puerto Rico Energy Bureau via <https://radicacion.energia.pr.gov/>; and a courtesy copy of the filing was sent via e-mail to: [secretaria@energia.pr.gov](mailto:secretaria@energia.pr.gov); [wcordova@energia.pr.gov](mailto:wcordova@energia.pr.gov); [legal@energia.pr.gov](mailto:legal@energia.pr.gov); [sugarte@energia.pr.gov](mailto:sugarte@energia.pr.gov); [sierra@arctas.com](mailto:sierra@arctas.com), [tonytorres2366@gmail.com](mailto:tonytorres2366@gmail.com), [cfl@mcvpr.com](mailto:cfl@mcvpr.com); [gnr@mcvpr.com](mailto:gnr@mcvpr.com), [info@liga.coop](mailto:info@liga.coop), [amaneser2020@gmail.com](mailto:amaneser2020@gmail.com), [hrivera@oipc.pr.gov](mailto:hrivera@oipc.pr.gov), [jrivera@cnslpr.com](mailto:jrivera@cnslpr.com), [carlos.reyes@ecoelectrica.com](mailto:carlos.reyes@ecoelectrica.com), [ccf@tcmrslaw.com](mailto:ccf@tcmrslaw.com), [manuelgabrielfernandez@gmail.com](mailto:manuelgabrielfernandez@gmail.com), [acarbo@edf.org](mailto:acarbo@edf.org), [pedrosaade5@gmail.com](mailto:pedrosaade5@gmail.com), [murthy@earthjustice.org](mailto:murthy@earthjustice.org), [rstgo2@gmail.com](mailto:rstgo2@gmail.com), [larroyo@earthjustice.org](mailto:larroyo@earthjustice.org), [jluebemann@earthjustice.org](mailto:jluebemann@earthjustice.org), [acasellas@amgprlaw.com](mailto:acasellas@amgprlaw.com), [loliver@amgprlaw.com](mailto:loliver@amgprlaw.com), [epo@amgprlaw.com](mailto:epo@amgprlaw.com), [robert.berezin@weil.com](mailto:robert.berezin@weil.com), [marcia.goldstein@weil.com](mailto:marcia.goldstein@weil.com), [jonathan.polkes@weil.com](mailto:jonathan.polkes@weil.com), [gregory.silbert@weil.com](mailto:gregory.silbert@weil.com), [agraitfe@agraitlawpr.com](mailto:agraitfe@agraitlawpr.com), [maortiz@lvprlaw.com](mailto:maortiz@lvprlaw.com), [rnegron@dnlawpr.com](mailto:rnegron@dnlawpr.com), [castrodieppalaw@gmail.com](mailto:castrodieppalaw@gmail.com), [voxpathulix@gmail.com](mailto:voxpathulix@gmail.com), [paul.demoudt@shell.com](mailto:paul.demoudt@shell.com), [javier.ruajovet@sunrun.com](mailto:javier.ruajovet@sunrun.com), [escott@ferraiuoli.com](mailto:escott@ferraiuoli.com), [mgrpcorp@gmail.com](mailto:mgrpcorp@gmail.com), [aconer.pr@gmail.com](mailto:aconer.pr@gmail.com), [axel.colon@aes.com](mailto:axel.colon@aes.com), [rtorbert@rmi.org](mailto:rtorbert@rmi.org).

In San Juan, Puerto Rico, this 30<sup>th</sup> day of August 2019.

/s Katuska Bolaños

Katuska Bolaños

## Memorandum

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**Date:** 8/28/2019

**To:** PREPA CEO and IRP Team

**CC:**

**From:** Siemens PTI IRP Team

**RE:** **AES Coal Plant Conversion Report Caveats and Limitations**

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### 1 Introduction

The objective of the Memo-Report is to provide PREPA and the Puerto Rico Energy Bureau, the caveats and limitations that must be taken into consideration when reading the results and findings of the report drafted by Siemens PTI on the assessment of the Conversion of the AES Coal Fired Power Plant in Guayama Puerto Rico.

It has been brought to Siemens attention that there is the possibility of misinterpretations to our report which could create confusion and the wrong conclusion reached by important stakeholders in Puerto Rico.

The report in reference, unequivocally identifies that the option of retiring (or converting) the plant is more costly than the option of continuing operations, resulting in higher costs to the economy and the ratepayers. It is important to emphasize that the study was conducted as a sensitivity in the context of the IRP and is based on the same assumptions. In as much as there is a deviation from these assumptions the impact retiring (or converting) AES Coal Plant could be more severe than assessed and perhaps significantly.

This memo-report elaborates on these assumptions and their limitations and highlight the reasons why the study **cannot and must not** be understood as a recommending a course of action but rather the result of a sensitivity under the IRP order by the Bureau.

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## 2 IRP Assumptions & Limitations

The study was conducted by the instructions of the PREB as a sensitivity under the IRP and for the scenarios requested. This mandate conditions importantly how the study was carried out as detailed below:

- 1- **Discount Rates:** The IRP is a planning study done for the selection of options under the same footing. It was agreed to be conducted under the assumption that PREPA would be in the position of being a credit-worthy utility resulting in minimum counterparty risks. Investors would accept a weighted average cost of capital of 8.5% and a return over the life of the asset (25 to 30 years). The current situation of PREPA is different and potentially it could confront demands for return from investors at higher rates and shorter amortization time; resulting in higher cost for the generation to be added to replace of AES Coal Plant. Thus, the conclusion of the study with respect of cost of capital are valid for the utility in financial health, and until that assumption materializes the cost would be higher.
- 2- **Renewable Generation:** The study used the same assumptions with respect of availability, costs and ability to integrate renewable generation to the grid as in the IRP. This means that by 2025 from 2,220 MW to over 3,000 MW of photovoltaic generation would have to be in place procured at the costs considered in the base case IRP. This level of renewable generation complies with the mandates of Act 17-2019 and assuming that PREPA will be able to timely enter in the required contracts at the prices assumed, interconnect projects at an unprecedented speed in Puerto Rico and operate a system very different to the existing one. Moreover, in most of the cases analyzed the early retirement of AES Coal results in higher levels of PV in the earlier years (e.g. 27% more by 2025 in S4S2B), increasing the operational risk of integrating this renewable, as there would be less time to learn. Thus, the impact of retiring AES would only be mitigated if PREPA was able to incorporate the levels of renewable assumed and an extemporaneous early retirement, could result in higher costs to the economy than those provided by the study.
- 3- **Demand Forecast:** The study was conducted with the assumptions on demand forecast and energy efficiency (EE) as in the IRP's Base Case. In as much as the load does not drop as forecasted or the levels of EE of 2% reduction per year for 20 years materialize at lower levels there will be a higher utility load to be served and hence higher impacts to the economy for the early retirement of the cheapest unit in the system. Thus, the impact of retiring AES would be mitigated only if the load and EE materialize to the levels assumed.
- 4- **Options for Replacement:** The study was conducted carried out on an accelerated timeline with minimal opportunity for optimization of solutions and interfacing with AES, the owner of the power plant. The study used typical performance and costs that are believed to be representative, but it is not a substitute for a more comprehensive study that undoubtedly will be necessary before any decision can be made. Thus, the study can only be seen as a sensitivity of potential impact.
- 5- **Existing generation fleet:** The study uses the same assumptions with respect of availability and performance of the existing generation fleet and under most Scenarios the early retirement of AES results in the extension of the use of the PREPA units (e.g. Costa Sur 5 & 6). The IRP, while considering availability levels consistent with history, it must not be lost to the reader that this is an ageing fleet and there is always the risk of an extended failure of these units; impact of which is currently mitigated by the high availability and low cost generation of AES Coal. Thus, the impact of an early retirement of AES coal would only be mitigated if the existing fleet behaves as forecasted in the IRP, until their retirement.

- 6- **Future generation:** The study considered the same availability dates for thermal generation as in the IRP, this means that the new combined cycle units will be in place by 2025 (in addition to the renewable and storage mentioned above), in as much as this does not happen and there are delays, the impact of the early retirement of AES coal can be greater. Thus, the impacts are conditioned to the Commercial Operation Dates (COD) of the facilities as assumed in the IRP.
- 7- **Dates of Retirement:** The dates used for the conversion or retirement in the study are only referential and can only be seen as indicative of a system condition in terms of load levels and new generation in place (thermal peaking generation, renewable and storage) rather than a specific moment in time. Thus, the impacts assessed are conditioned by the load levels and generation availability assumed and not only for the date in reference, but as mentioned above for the entire projection period.

### 3 Conclusions recommendations

As presented above the study on assessment of the Conversion of the AES Coal Fired Power Plant is a sensitivity conducted in the context of the IRP and uses the same assumptions that condition the results found. In as much as there is a deviation from these assumptions the impact retiring (or converting) AES Coal Plant could be more severe than assessed and perhaps significantly.

For this reason the study **cannot and must not** be understood as a recommending a course of action but rather just as the result of a sensitivity under the IRP carried out to inform the PREB as requested.