GOBIERNO DE PUERTO RICO
COMISIÓN DE ENERGÍA DE PUERTO RICO

IN RE: REGLAMENTO SOBRE EL PLAN INTEGRADO DE RECURSOS	**CASO NÚM.**: CEPR-MI-2018-0005 **ASUNTO**: Aprobación de Reglamento sobre el Plan Integrado de Recursos de la Autoridad de Energía Eléctrica de Puerto Rico.

RESOLUCIÓN

Mediante la presente Resolución, la Comisión de Energía de Puerto Rico ("Comisión"), de conformidad los Artículos 6.3, 6.20 y 6.23 de la Ley 57-2014,[1] la Sección 6C de la Ley Núm. 83 de 2 de mayo de 1941,[2] y al amparo de la Ley 38-2017,[3] aprueba el Reglamento sobre el Plan Integrado de Recursos de la Autoridad de Energía Eléctrica de Puerto Rico.

I. Introducción y Trasfondo Procesal

La Ley 57-2014 creó la Comisión como un ente independiente, altamente especializado, responsable de reglamentar, supervisar y hacer cumplir la política pública energética de Puerto Rico. Por otro lado, la Sección 6.23 de dicha ley requiere la adopción de la reglamentación necesaria para la elaboración, presentación, evaluación y aprobación del Plan Integrado de Recursos ("PIR") de la Autoridad de Energía Eléctrica de Puerto Rico ("Autoridad").

El desarrollo del sistema eléctrico requiere que se realice un proceso ordenado y detallado de planificación, en el que se consideren todos los recursos razonables que puedan ser utilizados para satisfacer la demanda del servicio de electricidad dentro de un horizonte de planificación. Como parte de dicho proceso, se debe hacer una evaluación sobre el entorno de planificación, así como un estudio detallado de diversos pronósticos de demanda futura, recursos de generación y demanda actuales, inversión en tecnologías de conservación de electricidad, facilidades existentes de transmisión y distribución, y un análisis de todos los escenarios y pronósticos relevantes en apoyo al plan de recursos seleccionado.

Mediante el procedimiento que hoy culmina con la aprobación del Reglamento del PIR, la Comisión atiende la necesidad de incorporar en la planificación del sistema eléctrico el desarrollo de nuevas tecnologías, la introducción de sistemas de microredes y el uso de

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[1] Ley de Transformación y ALIVIO Energético de Puerto Rico, según enmendada.

[2] Ley de la Autoridad de Energía Eléctrica de Puerto Rico, según enmendada.

[3] Ley de Procedimiento Administrativo Uniforme del Gobierno de Puerto Rico ("LPAU").

sistemas de almacenamiento de energía, entre otros, los cuales brindan alternativas al proceso de transformación del sistema eléctrico. De igual forma, luego de la experiencia obtenida en el primer procedimiento de evaluación y aprobación del PIR, se establece un proceso adecuado y útil para la planificación de recursos a largo plazo. Lo anterior, con el propósito de proveer un marco claro para la preparación del PIR, así como el procedimiento de evaluación del mismo ante la Comisión.

II. Procedimiento de Reglamentación

El 8 de febrero de 2018, la Comisión publicó una propuesta de reglamento con el propósito de: (i) evaluar los cambios recientes en la realidad del sistema energético de Puerto Rico; (ii) establecer un proceso adecuado y útil para la planificación de recursos a largo plazo; y (iii) utilizar como referencia el conocimiento adquirido a través del primer procedimiento de evaluación y aprobación de un PIR.

El aviso sobre la propuesta de reglamento y el inicio del proceso de reglamentación fue publicado el 12 de febrero de 2018. La Comisión, en cumplimiento con la Sección 2.13 de la LPAU, concedió un término de treinta (30) días, a partir de la publicación del mismo, a las personas interesadas en presentar comentarios por escrito sobre la propuesta de reglamento. Como parte del proceso de participación ciudadana, la Comisión recibió comentarios por escrito de parte de la Autoridad y de Puerto Rico Solar Energy Industries Association ("PR-SEIA").[4]

III. Resumen de Comentarios

A continuación, se presentan y discuten los comentarios presentados por la Autoridad y por PR-SEIA.

1. ***Cumplimiento Legal del PIR***

La Autoridad señaló que las Secciones 1.02 y 1.03 de la propuesta de reglamento no hacen una referencia explícita a diversas leyes con las cuales su cumplimiento fue de vital importancia en el procedimiento de evaluación y aprobación del PIR anterior, tal como la Ley 82-2010,[5] en donde se establecen los objetivos de la cartera de energía renovable para Puerto Rico, y la ley de cumplimiento ambiental federal donde se establecen los Estándares de Emisión de Mercurio y Tóxicos de Aire ("MATS", por sus siglas en inglés). Por otro lado, la Autoridad sugiere que se aclare que el lenguaje establecido en dichas secciones no limita ni excluye consideraciones de cumplimiento legal.

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[4] Se recibieron comentarios de parte de PR-SEIA el 12 de abril de 2018 y el 16 de abril de 2018, fuera del término establecido por la Comisión para la presentación de comentarios públicos. No obstante, la Comisión decidió acoger los mismos y evaluarlos como parte del procedimiento.

[5] Ley de Política Pública de Diversificación Energética por Medio de la Energía Renovable Sostenible y Alterna en Puerto Rico, según enmendada.

El propósito de las secciones antes mencionadas es, en primer lugar, establecer la base legal de donde se desprende la jurisdicción de la Comisión para promulgar el Reglamento del PIR y, en segundo lugar, ofrecer un resumen sobre la intención de la Comisión en el desarrollo de un PIR. Para atender la preocupación de la Autoridad, se realizó un ajuste en el lenguaje de manera que se establezca que el Plan de Acción para la implementación del plan de recursos seleccionado debe cumplir con todas las leyes y regulaciones aplicables del Gobierno Federal, así como del Gobierno de Puerto Rico.

De otra parte, y para asegurar que tanto la Comisión como la Autoridad consideren todos los requisitos estatutarios relevantes, se añadió lenguaje en el Reglamento de manera que la Autoridad provea información que sustente la forma en que los recursos de suministro, existentes y nuevos, contribuyen a cumplir con los requisitos de generación "altamente eficiente", según lo dispuesto en la Sección 6.29(a) de la Ley 57-2014.

2. ***Definiciones del Reglamento***

La Autoridad presentó comentarios sobre ciertas definiciones establecidas en la propuesta de reglamento a los fines de proveer claridad a las mismas. Estas fueron:

i. "Contador Avanzado": La Autoridad cuestiona el tipo de notificación que el contador o medidor debe ser capaz de proveer y solicitó que la Comisión provea una aclaración al respecto. La Comisión concuerda que el uso del término "notificar", según establecido en la propuesta de Reglamento, implica un requisito más activo para una notificación de pérdida de servicio eléctrico que lo que debe ser requerido de un contador avanzado. La Comisión modificó el lenguaje de la definición de manera que el contador avanzado permita la identificación de una pérdida de servicio eléctrico por parte de la utilidad.

ii. "Cogeneración": La Autoridad cuestiona si una facilidad de cogeneración debe estar clasificada bajo la Ley de Política Regulatoria de Utilidades Públicas ("PURPA", por sus siglas en inglés). La Comisión clarifica que una facilidad de cogeneración no tiene que ser una facilidad clasificada bajo PURPA para cumplir con la definición de este Reglamento. Como parte del PIR se deben tomar en consideración todos los cogeneradores, no importa su clasificación, aunque en algunos aspectos del análisis de estas facilidades se tengan que tratar por separado.

iii. "Regulaciones Ambientales": La Autoridad sugiere que se incluya en esta definición el cumplimiento con estatutos ambientales. La Comisión concuerda y modificó el lenguaje de la definición a esos fines.

iv. "Plan Integrado de Recursos": La Autoridad sugiere que se aclare que el término "recursos razonables" incluye el cumplimiento legal de dichos recursos. La Comisión concuerda y modificó el lenguaje de la definición a esos fines.

v. “Interventores”: La Autoridad indica que la Comisión debe tener la capacidad de hacer una distinción entre los diversos interventores dado que sus intereses en el procedimiento del PIR no serán los mismos y existe el riesgo de otorgar una ventaja competitiva injusta si se otorga acceso a información confidencial de la Autoridad. La Comisión entiende la preocupación de la Autoridad. No obstante, el mecanismo apropiado para atender solicitudes de acceso a información confidencial no es a través de la creación de distintos tipos de interventores. La Comisión atenderá las solicitudes de intervención a través del proceso establecido por el Reglamento Núm. 8543[6] y las solicitudes de confidencialidad a través del procedimiento establecido en la Resolución de 31 de agosto de 2016 en el Caso Núm. CEPR-MI-2016-0009, según enmendada de tiempo en tiempo.

vi. “Microredes”: La Autoridad sugiere que se elimine de la definición la declaración de los objetivos de las microredes, ya que pueden ser más amplios que los establecidos en la propuesta de reglamento. De otra parte, la Autoridad indica que de la definición no se desprende que la misma Autoridad pueda ser dueña u operar una microred. La Comisión modificó el lenguaje de la definición a los fines de atender los comentarios presentados.

vii. “Compra de Energía”: La Autoridad argumenta que los acuerdos de operación y compra de energía (“PPOA”, por sus siglas en inglés) existentes, que no han expirado y no hayan sido rechazados bajo el procedimiento de Título III ante el Tribunal Federal no están sujetos a aprobación de la Comisión. De otra parte, la Autoridad sugiere que se revise la definición para establecer que los PPOAs legados no están sujetos a la aprobación de la Comisión. El Artículo 6.32 de la Ley 57-2014 dispone que todo PPOA establecido luego de la aprobación de dicha ley requiere ser aprobado por la Comisión. Es decir, los contratos aprobados previo a la aprobación de la Ley 57-2014 están fuera de la jurisdicción de la Comisión. Por tal razón, no se modificó el lenguaje del Reglamento.

3. ***Información Confidencial***

La Autoridad presentó varios comentarios relacionados a la presentación de información confidencial en diferentes instancias de la propuesta de reglamento. La Autoridad hace referencia al requisito de la propuesta de Reglamento en donde se solicita presentar la totalidad de un documento del cual se haga referencia en la presentación del PIR. En este caso, la Autoridad indica que en caso de que algún documento esté protegido por los derechos de autor o propiedad intelectual, la Autoridad no podrá violar dicho derecho. La Comisión entiende la preocupación de la Autoridad y aclaró en el Reglamento que de la Autoridad utilizar documentos protegidos bajo derecho de autor o propiedad intelectual en la producción del PIR solamente tendrá que hacer una referencia a los mismos.

[6] Reglamento sobre Procedimientos Adjudicativos, Avisos de Incumplimiento, Revisión de Tarifas e Investigaciones.

Por otro lado, la Autoridad comenta que la información requerida en la presentación del PIR, en específico, las hojas de trabajo y los modelos utilizados serán entregados a la Comisión, pero se debe tomar en consideración que si alguna de la información contenida en dicha documentación es Información Confidencial de Infraestructura Crítica ("CEII", por sus siglas en inglés), confidencial o propietaria, la misma debe obtener la designación correspondiente. La Comisión reitera que toda información presentada para la cual se solicite trato confidencial será atendida bajo los procedimientos establecidos en la Resolución de 31 de agosto de 2016 en el Caso Núm. CEPR-MI-2016-0009, según enmendada de tiempo en tiempo.

En el caso del acceso a los programas o licencias para la evaluación de los modelos utilizados en el desarrollo del PIR, la Autoridad indica que no puede proveer copias de dichos programas a terceros. De igual manera, indica que puede proveer acceso a los modelos desarrollados, a interventores y consultores, en sus oficinas y bajo supervisión de su personal. Por otro lado, PR-SEIA comentó que la preocupación de la Autoridad no debe impedir el análisis y descubrimiento de prueba de los interventores, lo cual es un componente importante del testimonio de las partes durante el procedimiento. La Comisión entiende los comentarios de la Autoridad y de PR-SEIA, y reitera que el lenguaje del Reglamento establece que la Autoridad puede limitar dicho acceso. No obstante, la Comisión establecerá el acceso apropiado a ser provisto. Por lo tanto, determinamos que las reglas y procedimientos establecidos por la Comisión son suficientemente claros para proveer las protecciones que la Autoridad solicita además de establecer un balance con las necesidades de los interventores en relación a su participación en el proceso.

Además, la Autoridad hace referencia a la presentación de CEII y solicita que se establezca por medio del Reglamento que cierta información requerida será designada como CEII por la Comisión. La Comisión concuerda con la Autoridad en que cierta información requerida en el Reglamento debe ser designada como CEII y modificó el lenguaje del Reglamento a esos fines. La Comisión designó como CEII la información requerida en las siguientes secciones del Reglamento:

- Sección 2.03 (J)(1)(a)(iii): sobre el esquemático de la red de transmisión y subtransmisión.

- Sección 2.03 (J)(1)(a)(iv): sobre el mapa actual de la ruta física de las líneas de transmisión y subtransmisión.

- Sección 2.03 (J)(1)(b)(i)(C): donde se requiere cierta información adicional sobre el sistema de distribución, la cual debe identificar las porciones que deben ser designadas como CEII.

- Sección 2.03 (J)(1)(d)(vi)(A): sobre la descripción y diagramas de los estudios de flujo de carga.

- Sección 2.03 (J)(1)(d)(xii): sobre el diagrama monolineal (*one-line diagram*)[7] de la red de transmisión.

- Sección 2.03 (J)(2)(b): sobre el análisis de estabilidad del sistema.

- Sección 2.03 (J)(2)(c): sobre problemas de confiabilidad térmica y de voltaje.

4. ***Requisitos de Presentación del PIR***

La Autoridad indica que no cuenta con el nivel de detalle requerido por el Reglamento para ciertos requisitos, tales como el requisito del pronóstico de demanda máxima y la información histórica de demanda máxima. En el caso de los pronósticos solicitados por la Comisión, entendemos que al momento la Autoridad no cuenta con un estudio de carga que contenga este tipo de detalle y que permita establecer estimados de la demanda futura máxima por clase de cliente. No obstante, la Autoridad tiene la habilidad de desarrollar un estudio de tal envergadura, por lo que un pronóstico realizado, al menos en parte, sobre la dinámica de cada clase de cliente es información imprescindible al momento de entender la demanda energética futura. De otra parte, en caso de que la Autoridad no cuente con información histórica sobre la demanda máxima, debe notificarlo a la Comisión. No obstante lo anterior, la Autoridad debe comenzar a recopilar dicha información de manera que se comience a establecer una base de datos que pueda utilizarse en PIRs futuros. Por lo tanto, la Comisión determinó mantener el requisito de información según establecido en la propuesta de Reglamento.

Por otro lado, la Autoridad solicitó a la Comisión clarificar el requisito de comparar los pronósticos de carga realizados en PIRs anteriores y los valores anuales actuales de demanda máxima y consumo de energía. Como parte del procedimiento más reciente del PIR se desarrollaron pronósticos de carga, con información sobre pronósticos de demanda máxima y consumo de energía, los cuales fueron parte de la evaluación realizada. El propósito del requisito del Reglamento es que se compare el pronóstico de carga anual del PIR más reciente con el valor actual de la carga anual.[8] En caso de que ocurra una desviación significativa, es decir, una diferencia de más de cinco porciento (5%) entre los valores comparados, la Autoridad deberá proveer una explicación de las causas de dicha desviación.

En relación a los recursos existentes del sistema eléctrico, la Comisión solicitó que se presente una tabla con información acerca de estos. La Autoridad indicó que existe la posibilidad de que alguna de la información requerida referente a recursos existentes privados no se encuentre disponible para la Autoridad, por lo que no podrá proveer dicha información a la Comisión. Se modificó el lenguaje del Reglamento de forma que se permita

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[7] Para efectos de claridad, la Comisión determinó cambiar el nombre del diagrama solicitado en la referida sección.

[8] La Autoridad debe hacer una comparación entre los pronósticos de carga desarrollados para los años que comprenden desde la fecha del más reciente PIR hasta la fecha de presentación de un nuevo PIR, y el valor anual actual de demanda máxima y consumo de energía para dicho periodo.

a la Autoridad presentar información que esté disponible sobre los recursos existentes privados.

De otra parte, la Autoridad indicó que para realizar el estudio del margen de reserva de planificación se tiene que tomar en consideración que el sistema de la Autoridad es uno eléctricamente aislado, de tamaño relativamente pequeño e inercia limitada. Argumentó además que, no es adecuado para el caso de Puerto Rico utilizar como base estándares similares a los adoptados en sistemas eléctricos grandes para establecer un margen de reserva. Se modificó el lenguaje del Reglamento para clarificar que el requisito de la Comisión es utilizar metodologías estándares de la industria al momento de evaluar el margen de reserva. La Comisión entiende que el margen de reserva propuesto por la Autoridad podrá ser diferente a los utilizados en otros sistemas interconectados entre sí, debido a la naturaleza y las características técnicas del sistema eléctrico de la Isla.

Parte del análisis del PIR consiste en evaluar la integración de recursos en el lado de la demanda, tales como programas de eficiencia energética y respuesta a la demanda. La Autoridad expresó que solamente puede proveer información acerca de iniciativas de las que tenga conocimiento o esté directamente involucrada. De otra parte, indicó que considerar todas las medidas disponibles y costo efectivas de eficiencia energética y respuesta a la demanda es demasiado abarcador y no es posible. Por último, la Autoridad solicitó una aclaración respecto a la decisión de alcanzar un dos porciento (2%) en el nivel de ahorros anuales en la demanda. PR-SEIA, por otro lado, comentó que se debe obtener conocimiento sobre las posibles opciones para desarrollar estos programas, lo que se podría hacer a través de un estudio potencial del mercado para identificar medidas específicas para Puerto Rico. Además, PR-SEIA comentó que se debería incluir el diseño tarifario en el lado de la demanda, tal como el uso de tarifas de tiempo-de-uso, como posibles recursos del lado de la demanda. En primer lugar, la Comisión establece que la Autoridad debe ser capaz de obtener e incorporar información sobre programas de este tipo que sean operados por terceros y que a su vez produzcan un impacto en la planificación de la Autoridad. La Comisión modificó el lenguaje del Reglamento de manera que, en vez de proveer una descripción detallada de los programas de eficiencia energética, se provea una evaluación detallada del impacto de dichos programas en el Plan de Recursos de la Autoridad. De otra parte, la Comisión modificó el lenguaje del Reglamento para establecer que la Autoridad debe considerar alcanzar un dos porciento (2%) de ahorros energéticos hasta tanto la Comisión no apruebe los resultados de un estudio potencial de eficiencia energética y respuesta a la demanda. En caso de que dicho estudio potencial, según aprobado por la Comisión, demuestre que el porciento de ahorros energéticos que se pueden alcanzar es menor de dos porciento (2%), el PIR deberá considerar lo dispuesto en el estudio potencial. La Comisión aclara, además, que dentro de los posibles programas de respuesta a la demanda se podrán considerar el uso de diferentes diseños tarifarios, pero dichas tarifas y su implementación tendrán que ser aprobadas durante un procedimiento de revisión tarifaria ante la Comisión.

La Autoridad indicó que además de utilizar un Modelo de Expansión de Capacidad para desarrollar planes de recurso al menor costo, puede ser necesario utilizar otro tipo de modelo para obtener información detallada referente a costos, emisiones, despacho de generación, y restricciones en el sistema de transmisión, entre otros. La Comisión concuerda con la Autoridad en que puede ser necesaria la utilización de diversos modelos además de un Modelo de Expansión de Capacidad para el desarrollo del PIR. Debido a lo anterior, la Comisión clarifica que se requiere una solicitud de dispensa de parte de la Autoridad solamente en el caso en el que no utilice un Modelo de Expansión de Capacidad para desarrollar el PIR.

El análisis del PIR contiene además información relacionada al sistema de transmisión y distribución de la Autoridad. En sus comentarios, la Autoridad señaló que el recopilar cierta información requerida por la propuesta de Reglamento, en cuanto al sistema de transmisión y distribución, podría ser una tarea extremadamente onerosa y que no sería posible completar por años. Entre la información identificada por la Autoridad se encuentran los siguientes requisitos de la propuesta de Reglamento: (i) limitaciones en el sistema de transmisión para transferir energía; (ii) descripción de las facilidades existentes del sistema de distribución; (iii) habilidad del sistema de transmisión para realizar transferencia de energía con microredes; (iv) diagrama de la capacidad del sistema para importar o exportar energía; y (v) análisis detallado de la planificación de facilidades de distribución, sobrecarga termal futura, variaciones en voltaje y la capacidad del sistema de distribución para resistir desastres naturales. Si la Autoridad no puede realizar estudios para proveer la información mencionada anteriormente debe notificarlo a la Comisión. De otra parte, la Comisión modificó el lenguaje del Reglamento para proveer flexibilidad y requerir información que sea práctica, siendo esta una breve narrativa sobre los requisitos, ejemplos de estudios existentes o estudios disponibles al momento de presentación del PIR.

5. ***Calendario y Fecha de Presentación del PIR***

La Autoridad solicitó de parte de la Comisión una aclaración sobre la fecha de presentación del PIR según establecida en la propuesta de Reglamento. El 14 de marzo de 2018, la Comisión emitió una Resolución y Orden ("Resolución y Orden de 14 de marzo")[9] en donde inició un proceso administrativo para la revisión de cualquier propuesta de actualización del PIR. Mediante la referida Resolución y Orden, la Comisión estableció que el término de tres años establecido por la Ley Núm. 83 y la Ley 57-2014 para revisar un PIR existente comienza a transcurrir en la fecha en la cual el PIR es legalmente vinculante y ejecutable. Según el análisis de la Comisión, y en circunstancias normales, la Autoridad podría presentar su próximo PIR no antes de marzo de 2020.

No obstante, según establecido en la Sección 6B de la Ley Núm. 83, el PIR puede ser revisado antes del término de tres años establecido por ley cuando hubiese un cambio sustancial en la demanda de energía o en el conjunto de recursos, con el fin de mitigar dichos cambios. Luego de analizar el impacto de los huracanes Irma y María sobre la necesidad de recursos energéticos en la Isla, la Comisión determinó que era necesario actualizar el PIR, según dispuesto en la referida Sección 6B de la Ley Núm. 83. Por lo tanto, mediante la Resolución y Orden de 14 de marzo la Comisión autorizó a la Autoridad a presentar un PIR actualizado en o antes de octubre de 2018.

[9] *Véase* Resolución y Orden, Caso Núm. CEPR-AP-2018-0001, 14 de marzo de 2018.

6. ***Procedimiento ante la Comisión***

El Reglamento del PIR establece que el procedimiento ante la Comisión se realizará en dos fases. La primera fase establece un procedimiento previo a la presentación del PIR, donde se llevarán a cabo una serie de conferencias técnicas con el propósito de proveer cualquier clarificación en relación a los requisitos del Reglamento, así como asegurar que los análisis que se realicen sean lo suficientemente robustos para cumplir con las metas de política pública y las expectativas de la Comisión. La Autoridad argumenta que el procedimiento se puede volver problemático si se cambia constantemente el objetivo de la Autoridad en el desarrollo del PIR. El propósito de la Comisión al establecer un procedimiento previo a la presentación del PIR es asegurar que exista un mecanismo mediante el cual se pueda atender cualquier preocupación o contestar cualquier pregunta sobre la dirección o el contenido del PIR. Lo anterior es una forma de evitar que se presente un PIR deficiente como parte del procedimiento, causando así atrasos innecesarios en la conclusión del mismo. Esta determinación es cónsona con el interés público de que el proceso de aprobación del PIR sea uno eficiente y que culmine en un término de tiempo razonable.

Por otro lado, la Autoridad comentó que se debía establecer un término de tiempo para que la Comisión determine que la propuesta de PIR, luego de atender cualquier deficiencia, cumple con los requisitos del Reglamento. La Comisión concuerda con la Autoridad en que establecer dicho término de tiempo abona a un proceso eficiente, mientras que las partes se mantienen informadas en relación al mismo. La Comisión modificó el lenguaje del Reglamento para establecer un término de treinta (30) días para dicha evaluación. No obstante, la Comisión incluyó lenguaje en el Reglamento a los fines de proveer flexibilidad para extender el referido término.

La Autoridad sugirió que se incluya en el Reglamento que la Comisión emitirá su decisión final en el procedimiento de evaluación y aprobación del PIR dentro de seis (6) meses posteriores a la presentación del mismo. La información provista como parte del PIR es altamente técnica, y el procedimiento de evaluación del PIR es sumamente complejo y diferente de cualquier otro proceso administrativo. La Comisión entiende la urgencia con la cual se debe realizar un procedimiento de la naturaleza del PIR. No obstante, la Comisión determina que, debido a la importancia del procedimiento este se debe conducir de manera rigurosa y con la celeridad que amerita, sin comprometer la calidad del trabajo, mientras que se implementa un proceso de evaluación y toma de decisiones detallado, el cual vele siempre por el mejor interés público. Por tal razón, la Comisión no acoge la recomendación de la Autoridad.

Como parte de la presentación del PIR se requiere proveer testimonio escrito de los testigos de la Autoridad que trabajaron en la elaboración del mismo. La Autoridad indicó que la Comisión debe considerar como opción la presentación de reportes en vez de documentos en formato de testimonio. De otra parte, la Autoridad comenta que, de requerirse la presentación de testimonio escrito, se elimine el requisito de firmar el documento en cada página, lo cual puede causar esfuerzos, costos y atrasos innecesarios. La Comisión aclara que la importancia de proveer testimonio es tener conocimiento sobre el personal que trabajó en cada porción del PIR, así como afirmar la veracidad de la evidencia presentada. De igual forma, los testimonios sirven de guía para la planificación de la vista técnica. El requisito de proveer testimonio no limita la presentación de cualquier reporte adicional que sirva para sustentar las decisiones tomadas. Por otro lado, a los fines de facilitar su presentación, la Comisión aclara que los documentos en formato de testimonio no tendrán que ser iniciados en cada página del mismo.

La Autoridad indicó que el requisito de publicación del PIR final debe tomar en consideración que cierta información será manejada de forma confidencial. De otra parte, la Autoridad sugirió que se incluya una sección en el Reglamento sobre la decisión de la Comisión en el procedimiento del PIR. La Comisión concuerda con la Autoridad y modificó el lenguaje del Reglamento a los fines de establecer que: (i) la Autoridad deberá publicar solamente las partes del PIR que no hayan sido designadas como información confidencial; y (ii) se emitirá una orden con la decisión final de la Comisión al culminar el procedimiento.

7. ***Programas de Eficiencia Energética y Respuesta a la Demanda***

La Autoridad solicitó que la implementación de programas de eficiencia energética y respuesta a la demanda sea asignada a un tercero, pues la Autoridad no sería capaz de manejar dicha directiva sin ser acusados de parcialidad en el proceso. La Autoridad entiende que su rol en el desarrollo de dichos programas sería proveer la información necesaria al tercero a cargo de la implementación, así como la recolección de fondos a través de la porción de la tarifa asignada a eficiencia energética.

La Comisión concuerda en que otras jurisdicciones han asignado la implementación de programas de esta naturaleza a terceros independientes, y que esto sería apropiado para Puerto Rico, especialmente en el contexto del proceso de transformación del sector eléctrico del país. Se revisó el lenguaje del Reglamento para otorgar a un tercero, contratado por la Comisión, la responsabilidad de la planificación e implementación de los programas de eficiencia energética y respuesta a la demanda. De otra parte, se incluyó lenguaje en el Reglamento donde se establece que el tercero independiente proveerá información sobre dichos programas, en curso y futuros, a la Autoridad para esta la utilice en el desarrollo del PIR.

IV. Conclusión y Aprobación del Reglamento

El Reglamento adoptado por la Comisión en el día de hoy tiene como objetivo principal establecer los requisitos para la planificación ordenada de recursos energéticos a largo plazo. La intención de la Comisión es que el resultado del proceso de planificación realizado al amparo de los requisitos de este Reglamento atienda de manera adecuada y satisfactoria la necesidad energética del país durante todo el horizonte de planificación.

Por las razones antes expuestas, la Comisión **APRUEBA** el Reglamento sobre el Plan Integrado de Recursos de la Autoridad de Energía Eléctrica de Puerto Rico.

Notifíquese y publíquese.

Ángel R. Rivera de la Cruz
Comisionado Asociado

José H. Román Morales
Comisionado Asociado
Presidente Interino

COMISIÓN DE ENERGÍA DE PUERTO RICO
2 0 1 4

CERTIFICACIÓN

Certifico que así lo acordó la Comisión de Energía de Puerto Rico por mayoría de sus miembros el 20 de abril de 2018 y que en la misma fecha he procedido a enviar la misma a: c-aquino@prepa.com, n-ayala@prepa.com, y a n-vazquez@prepa.com. Asimismo, certifico que hoy 20 de abril de 2018 he procedido con el archivo en autos de esta Resolución en relación al Caso Núm. CEPR-MI-2018-0005 y he enviado copia fiel y exacta a:

Autoridad de Energía Eléctrica de Puerto Rico
Attn.: Lcdo. Carlos M. Aquino Ramos
Lcda. Nélida Ayala Jiménez
Lcda. Nitza Vázquez Rodríguez
P.O. Box 363928
Correo General
San Juan, PR 00936

Para que así conste, firmo la presente en San Juan, Puerto Rico, hoy 20 de abril de 2018.

María del Mar Cintrón Alvarado
Secretaria

COMISIÓN DE ENERGÍA DE PUERTO RICO

REGULATION ON INTEGRATED RESOURCE PLAN FOR THE PUERTO RICO ELECTRIC POWER AUTHORITY

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REGULATION ON INTEGRATED RESOURCE PLAN FOR THE PUERTO RICO ELECTRIC POWER AUTHORITY

CHAPTER I - GENERAL PROVISIONS

ARTICLE I.- GENERAL PROVISIONS

Section 1.01.- Title.

This Regulation shall be known as the Regulation on Integrated Resource Plan for the Puerto Rico Electric Power Authority.

Section 1.02.- Legal Basis.

This Regulation is adopted pursuant to Articles 6.3, 6.20 and 6.23 of Act 57-2014, as amended, known as the Puerto Rico Energy Transformation and RELIEF Act; to Section 6C of Act No. 83 of May 2, 1941, as amended, known as the Electric Power Authority Act ("Act 83"); and pursuant to Act 38-2017, as amended, known as the Uniform Administrative Procedure of the Government of Puerto Rico Act.

Section 1.03.- Purpose and Executive Summary.

The Puerto Rico Energy Commission ("Commission") adopts and enacts this Regulation in compliance with the mandate established in Section 6C of Act No. 83 of May 2, 1941, as amended, known as the Puerto Rico Electric Power Authority Act, and Section 6.23 of Act 57-2014, known as the Puerto Rico Energy Transformation and RELIEF Act, which require the adoption of the necessary rules for the elaboration, presentation, evaluation, and approval of the Puerto Rico Electric Power Authority's ("PREPA") Integrated Resource Plans (IRP).

Pursuant to this Regulation and resulting from a detailed planning process, the IRP will consider all the reasonable resources to satisfy the demand for electricity services during a twenty (20)-year planning period, taking into account both supply- and demand-side electric power resources. In broad terms, the IRP will include an assessment of the planning environment, a careful and detailed study of a range of future load forecasts, present generation resources, present demand resources, current investments in electricity conservation technologies, existing transmission and distribution facilities, and the relevant forecast and scenario analyses in support of PREPA's selected resource plan. It will also contain a discussion of all applicable laws and regulations to ensure that the proposed Action Plan for the implementation of the selected resource plan complies with all laws and regulations of the Federal government and the Commonwealth of Puerto Rico.

The purpose of this Regulation is to ensure that the IRP serves as an adequate and useful tool to guarantee the orderly and integrated development of Puerto Rico's electric power system, and to improve the system's reliability, resiliency, efficiency, and transparency, as well as the provision of electric power services at reasonable prices. The provisions established herein will guide the IRP process along lines that are consistent with the mandates of Act 57-2014 and Act No. 83 of May 2, 1941, and following the electric power industry's best practices in integrated resource planning. This Regulation, moreover, defines the terms related to the information required in the IRP, the procedures before the Commission, and the performance metrics guideline and inducements that PREPA will follow after the Commission has evaluated and reviewed the IRP. The Commission will evaluate the IRP as well as PREPA's performance thereafter in accordance with the provisions set forth in this Regulation.

Section 1.04.- Application.

This Regulation shall govern the information requirements, guidelines for analysis, action plans, performance measures, as well as the evaluation, approval, and review procedures related to the Integrated Resource Plans for the Puerto Rico Electric Power Authority.

Section 1.05.- Interpretation.

This Regulation shall be interpreted in a way that promotes the highest public good and the protection of the interests of the residents of Puerto Rico, and in such a way that the proceedings are carried out rapidly, justly and economically.

Section 1.06.- Provisions of Other Regulations; Repeal of Regulation No. 8594, as amended by Regulation No. 8903.

The provisions of this Regulation may be supplemented by the provisions of other regulations of the Commission that are compatible with the provisions of this Regulation.

Regulation No. 8594, known as the Regulation on Integrated Resource Plan for the Puerto Rico Electric Power Authority, as amended by Regulation No. 8903, known as the Amendment to Regulation No. 8594, is hereby repealed.

Section 1.07.- Unforeseen Proceedings.

When a specific proceeding has not been planned for in this or another Commission regulation, the Commission may conduct them in any way that is consistent with Act 57-2014, as amended.

Section 1.08.- Definitions.

A) These definitions are to be used for this Regulation and are not intended to modify the definitions used in any other Commission rules or orders.

B) For the purposes of this Regulation, the following terms will have the meaning established below, except when the context of the content of any provision clearly indicates something else:

1) "Action Plan" refers to a plan that identifies the specific actions that

PREPA will perform during the first five (5) years of the Planning Period in order to implement the Preferred Resource Plan.

2) "Advanced meter" refers to a meter that records a customer's electricity usage for time intervals of one hour or less, and can transmit that information to the utility without the need for a human meter reader. The meter allows for the two-way flow of information and enables the utility to identify a power outage.

3) "Baseline Load Forecast" refers to a load forecast of electricity demand and consumption that takes into account currently implemented demand-side resources and the expiration of such resources, but does not include any anticipated or required future demand-side resources.

4) "Capacity Expansion Model" refers to a computer model designed to seek a least cost, or "optimal", portfolio of electricity supply- and demand-side resources that meets the utility's load forecast, accounting for system constraints and the need to maintain the reliability of the system over the planning period in the Preferred Resource Plan.

5) "Cogeneration" refers to the production of electricity using waste heat from an industrial process or the use of steam from electric power generation as a source of heat.

6) "Commission" refers to the Puerto Rico Energy Commission created by virtue of Act 57-2014.

7) "CEPPO" refers to the Commonwealth Energy Public Policy Office created by virtue of Act 57-2014.

8) "Competitive bidding" shall mean the process by which supply- or demand-side resources are procured through a formal bidding or request for proposal ("RFP") process. For purposes of this regulation, a "Competitive bidding" process shall refer to the procedures set forth in Sections 6B(a)(iii) and 6C of Act 83 and any applicable Commission regulation or resolution.

9) "Demand-Side Resource" refers to the resources produced by energy efficiency programs, demand response programs, and distributed generation that reduce retail customer consumption or shift the time of consumption from end users.

10) "Demand Response Program" shall mean a program that seeks to modify customer loads to make them more efficient by reducing or shifting load from hours with high electricity costs or reliability constraints. Demand Response programs may include, but are not

limited to, any one or a combination of: direct load control programs, critical peak pricing, time-varying rates, other rate designs to encourage efficient electricity consumption, and other utility-designed or customer-managed programs that may become available through deployment of advanced meters or other technologies.

11)"Distributed Generation" shall mean generation facilities owned by retail customers and located on the customer side of the meter, that is primarily for the use and consumption of energy by retail customers, and that may provide any electric power generated in excess to PREPA. Distributed generation resources may include combined heat and power, renewable and non-renewable generators, microgrids and storage technologies including electric vehicles. Distributed generation includes both customer-owned and -leased resources.

12)"Electric power grid" shall mean the electric power transmission and distribution infrastructure of the Commonwealth of Puerto Rico, operated, supported, and administered by PREPA.

13)"Electricity consumption" shall mean the amount of electricity required by customers over the course of a year or smaller time period, as measured in gigawatt hours (GWh).

14)"Electricity demand" shall mean the amount of electricity required by customers at a given hour of the year, as measured in megawatts (MW).

15)"Energy Efficiency Measure" shall mean an installed piece of equipment or system, or modification of equipment, systems, or operations on end-use customer facilities that reduces the total amount of electrical energy and capacity that would otherwise have been needed to deliver an equivalent or improved level of service to end-use customers.

16)"Energy Efficiency Program" shall mean a program provided by or on behalf of PREPA to retail customers, using a set of energy efficiency measures to reduce the total amount of electrical energy and capacity that would otherwise have been needed to deliver an equivalent or improved level of end-use service.

17)"Environmental Regulations" shall mean the rules and regulations promulgated by the United States Environmental Protection Agency ("EPA") or the Environmental Quality Board of Puerto Rico ("EQB") and any applicable Federal and Puerto Rico environmental statutes.

18)"ICPO" refers to the Independent Consumer Protection Office, created by virtue of Act 57-2014.

19)"Independent Power Producer" shall mean an independently-owned generation facility that provides wholesale power to PREPA through a contractual arrangement.

20)"Integrated Resource Plan" or "IRP" shall mean a plan that considers all reasonable resources to satisfy the demand for electric power services during a specific period of time, including those relating to the offering of electric power, whether existing, traditional, and/or new resources, and those relating to energy demand such as energy conservation and efficiency or demand response and localized energy generation by the customer, while recognizing the obligation of compliance with laws and regulations that constrain resource selection.

21)"Intervenor" refers to any party who has filed for and been granted intervention in this proceeding pursuant to Section 5.05 of Regulation No. 8543, Regulation on Adjudicative, Notice of Noncompliance, Rate Review and Investigation Procedures.

22)"Load Forecast" refers to a long-term forecast of electricity demand (measured in MW) and electricity consumption (measured in GWh).

23)"Major Change" shall mean any new procurement effort or addition, retirement or modification of generation plant having a nameplate capacity of 50 megawatts or greater; the addition of pollution control equipment; the unanticipated termination of a Power Purchase Agreement; or other event, such as a major hurricane, as set forth by the Commission.

24)"Major Project" shall mean any project greater than 50 megawatts.

25)"Microgrid" shall mean a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the distribution grid. A microgrid can connect and disconnect from the distribution grid, when available, to enable it to operate in either grid-connected or off the grid (islanded) mode.

26)"New Resource or Facility" refers to any resource or facility that is in planning, unbuilt, undelivered, under construction, or is otherwise incomplete and that is not providing useful customer service.

27)"Person" includes any natural person, company or legal entity, independent of how it is organized.

28)"Planning Environment" refers to the statutes, rules, regulations, and other exogenous considerations that impact or guide electric system planning.

29)"Planning Period" shall mean the twenty-year period in an Integrated Resource Plan for which resources must be planned to meet customer load requirements.

30)"Planning Reserve Margin" refers to the reserve margin required to operate PREPA's system reliably.

31)"Power Purchase" refers to a transaction to purchase wholesale capacity and/or energy from another electric power supplier as approved by the Commission.

32)"PREPA" refers to the Puerto Rico Electric Power Authority, a corporate entity created by virtue of Act 83.

33)"Preferred Resource Plan" shall mean a portfolio of resource additions selected by PREPA from amongst those evaluated in the IRP representing the best performing resource mix to be implemented in the Action Plan.

34)"Rate Design" shall mean the means by which class revenue requirements are collected within each customer class in order to recover costs for the delivery of service and to promote efficient use of electricity services, including considerations for effective conservation and management of peak loads.

35)"Reference Case" refers to the forecast of load and associated system requirements, commodity prices, capital costs and risks representing PREPA's best understanding of expected circumstances or median probability outcomes.

36)"Resource Plan" refers to a selection of supply-, demand-side, and transmission resources that best serves PREPA's needs under a given forecast scenario.

37)"Revenue Requirement" refers to the total revenues required by PREPA to recover its capital investments and expenses as determined in a rate case decision issued by the Commission.

38)"Scenario" refers to a combination of system requirements needed to serve load, commodity prices, capital costs and risks that influence the choice of resources serving PREPA's future load.

39)"Small Power Production" refers to the production of electric power using oil and/or its byproducts, natural gas, renewable energy sources, or any other electric power production method, including the production of electric power through distributed generators of 1 MW or higher participating in PREPA's Net Metering Program.

40) "Supply-Side Resource" shall mean an electric generation, transmission, or distribution facility on the utility side of the meter, either owned or operated by PREPA, or the output of which is purchased by PREPA at wholesale.

41) "Work Papers" shall mean all documents, spreadsheets, reports, correspondence and communications, computer runs, calculations, and other materials relied upon to develop the IRP filing, including the Preferred Resource Plan and the Action Plan.

C) Every word used in the singular in this Regulation, shall be understood to also include the plural, unless the context indicates otherwise.

Section 1.09.- Dates and Terms.

In computing any time-period established in this Regulation, or by order of the Commission, the day of the occurrence of the event, act, or omission that triggers the period shall not be counted and the fixed period shall begin on the day after. If a period ends on a Saturday, Sunday or legal holiday, the period shall be extended until the next workday.

Section 1.10.- Language.

A) If there is a discrepancy between the Spanish version and the English version of this Regulation, the provisions of the English version shall prevail.

B) The proceedings heard before the Commission shall be conducted in the English language. At its discretion, and upon request from a party or *motu propio*, the Commission may require any party to file Spanish a translation of any document filed, prepared and developed in relation to an IRP proceeding. Any party seeking a waiver from this requirement shall file a duly grounded request with the Commission. Upon filing of such request, the Commission will issue a resolution notifying its determination with regards to such request and adopting appropriate remedies.

C) Except as otherwise authorized by the Commission, all allegations, appeals and motions should be written in English.

D) All documents submitted in any language that is not Spanish or English shall be accompanied by a certified translation into English.

Section 1.11.- Severability.

If any article, provision, word, sentence, paragraph or section of this Regulation is challenged, for any reason, before a court and declared unconstitutional or void, such ruling shall not affect, damage, or invalidate the remaining provisions of this Regulation and its effect shall be limited to the article, provision, word, sentence, paragraph or section declared unconstitutional or void. The nullity or invalidity of any article, word, sentence, paragraph or section in a specific case, shall not affect or jeopardize in any way its application or validity in any other case, unless it is expressly and specifically invalidated for all cases.

Section 1.12.- Forms.

The Commission shall establish the forms it deems necessary to conduct the proceedings pursuant to this Regulation, and shall inform the public via its website. Notwithstanding, the fact that the Commission has not adopted one or more forms, is in the process of reviewing them, or the Internet website is out of service, shall not relieve anyone of its obligation to comply with the provisions stated herein or the Commission's orders.

Section 1.13.- Mode of Submission.

The forms, documents and appearances required by virtue of this Regulation or any order of the Commission, shall be filed with the Commission pursuant to the rules, regulations and instructions adopted and published by the Commission to such effect. Upon the initiation of an IRP proceeding, the Commission may adopt through resolution and order specific filing instructions applicable to such IRP proceeding.

Notwithstanding, any IRP filing made by PREPA prior to the adoption by the Commission of specific filing instructions shall comply with the following:

A) An original and one copy shall be physically filed and stamped at the Commission Clerk's Office.

B) Along with the paper filing, PREPA shall provide the complete filing in an electronic format specified by the Commission during Phase 1 (as defined in Section 3.01), which shall include a searchable PDF electronic copy of the entire filing. Work papers and similar documents shall be saved in their native programs with formulae and references intact. Under no circumstances shall PREPA file a scanned, non-searchable copy of its filing (the only exception being documents attached or made part of PREPA's filing which were not produced, developed or prepared in relation to the IRP filing and for which a searchable PDF version is not reasonably available).

Section 1.14.- Effect of Submission.

In filing a document in relation to any IRP proceeding, the party making such filing expressly certifies and recognizes that the content of said document is true and that, according to the signer's best knowledge, information and belief, formed after reasonable inquiry, the document is based on reliable facts, arguments, judicial sources and information.

Section 1.15.- Confidential Information.

If in compliance with the provisions of this Regulation or any of the Commission's orders, a person is required to file with the Commission information it considers to be privileged or confidential pursuant to applicable evidentiary privileges, said person shall identify the alleged privileged information and request the Commission to treat such information as confidential, pursuant to Article 6.15 of Act 57-2014. In identifying privileged information and requesting confidential treatment by the Commission, the requesting party shall follow the rules and procedures adopted from time to time by the Commission for the filing, handling and treatment of confidential information in resolution CEPR-MI 2016-0009 as currently amended and as may be amended from time to time. Except in the case of information protected under the attorney-client privilege, the claiming of confidential treatment shall, under no circumstances, be grounds for denying such information from being filed with the Commission.

Section 1.16.- Validity.

Pursuant to Section 2.8 of Act 38-2017, this Regulation shall enter into effect thirty (30) days after its submission to the Department of State and the Legislative Library of the Office of Legislative Services.

CHAPTER II – INTEGRATED RESOURCE PLANNING

ARTICLE II.- PLANNING PERIOD, CONTENT AND SCHEDULE

Section 2.01.- Planning Period; Effectiveness.

A) The IRP shall consider a planning period of twenty (20) years.

B) An IRP approved by the Commission shall remain in effect until the approval of a subsequent IRP by the Commission, or until otherwise established by the Commission through resolution or order.

C) Any proposal for a new IRP, or any proposed update, review or amendment to an existing IRP must be submitted to the Commission for evaluation and approval. An update, revision or amendment to an IRP, in whole or in part, will not enter into effect until it is approved by the Commission.

Section 2.02.- Integrated Resource Plan Filing Structure and Requirements

A) The IRP filing shall be comprised of a main body and accompanying technical appendices, as established in paragraphs (B) and (C), below.

B) The main body of the IRP filing shall be organized into the following chapters:

Part One - Introduction and Summary of Conclusions

Part Two - Planning Environment

Part Three - Load Forecast

Part Four - Existing Resources

Part Five - Resource Needs Assessment

Part Six - New Resource Options

Part Seven - Assumptions and Forecasts

Part Eight - Resource Plan Development

Part Nine - Caveats and Limitations

Part Ten - Action Plan

C) The main body of the IRP filing shall be written as a coherent, stand-alone document designed to allow informed readers sufficient information to understand the process by which PREPA conducts long-term resource planning, and the key outcomes of that resource planning.

D) The technical appendices of the IRP filing shall include all ancillary information and descriptions required by this Regulation but not included in the main body of the IRP filing. The following technical appendices must be attached to the IRP filing:

Appendix 1 - Transmission and Distribution Planning

Appendix 2 - Prior Action Plan Implementation Status

Appendix 3 - Renewable Energy Project Status

Appendix 4 - Demand-Side Resources

Appendix 5 - New and Existing Supply-Side Resources Supplemental Data

Appendix 6 - Additional information, as required by the Commission through an Order, that may address additional subjects related to integrated resource planning.

E) The IRP filing shall specifically identify and include all references to external or internal (PREPA) source documents relied upon for the development of the proposed IRP.

1) If a source document is publicly available on the Internet, a specific link (URL address) to the source document shall be provided.

2) If a source document referenced by PREPA in any portion of its IRP filing is not publicly available or readily accessible, an electronic copy of such source documents shall be provided along with the IRP filing.

3) If a source document consists of a study, report, book, periodical, or other publication not publicly available or readily accessible, PREPA shall provide copies of the relevant pages from such source document relied upon by PREPA in the development of its proposed IRP. All pages which are necessary to understand the relevant pages in context shall be provided. Upon request, PREPA shall make available the entirety of such source document. In the case such source documents are protected under federal copyright law, PREPA shall make a reference to the documents used for the development of the proposed IRP.

F) Work Papers and models relied upon by PREPA in the development of the IRP shall be filed concurrently with the IRP.

1) Work Papers which are available in electronic form shall be provided electronically in native format. All formulae and viable links shall be left intact for all electronic files. PREPA shall, at a minimum, provide the following workpapers to the Commission upon submission of the IRP:

a) Load Forecast Development workpapers;

b) Fuel Price Forecast Development workpapers;

c) Resource Plan modeling input files;

d) Resource Plan modeling output files as used by PREPA;

e) Any post-processing or analysis work papers used to assess the Resource Plan modeling output files, including financial models used to calculate the present value of revenue requirements, rate impacts or other cost elements of the IRP;

f) Electronic, spreadsheet-based versions of all tables and figures as presented in the IRP.

2) PREPA shall provide to the Commission any computer model including the software and licensure necessary for the Commission, or its consultants, to independently run any analysis relied upon by PREPA. Alternatively, PREPA may provide the Commission reasonable access to the computer model at the Commission's offices or at another mutually agreeable location. Such access shall be adequate to enable the Commission to replicate the results and may include PREPA manipulating the computer model according to instructions or inputs from the Commission. Reasonable access shall be made available to intervenors. If PREPA seeks to limit access to the program or application to intervenors, the Commission will determine the appropriate access to the program or its output.

Section 2.03.- Integrated Resource Plan Analyses and Reporting Requirements

A) The IRP shall assess and report upon each of the following factors, as described in paragraphs (B) through (N) of this Section.

B) Planning Environment- PREPA shall present a description of significant planning and regulatory factors that affect the environment in which it operates as well as the way in which these factors impact PREPA's system.

1) PREPA shall describe, at a minimum, the following factors: federal, state, or municipal standards and rules that impact the requirement for, or availability of, energy efficiency, renewable energy, fuel alternatives, or other resource requirements; and environmental standards and regulations that impact existing utility resources or resource choices at the present time and throughout the planning period.

2) The Planning Environment section shall also include a discussion of substantial regulatory or legislative standards and rules that have changed since the approval of the most recent IRP.

C) Load Forecast- PREPA shall present a forecast of future capacity and energy demand requirements, as well as an analysis of prior load forecasts.

1) Load Forecast Documentation- The IRP shall document the following elements of the load forecast.

a) Forecast Peak Demand and Energy- Forecast data shall be reported, on a year by year basis, covering the entire IRP Planning Period, and shall include:

i. The total annual electricity generation and sales for the utility and consumption for each customer class, determined in accordance with tariffs for billing.

ii. The coincident peak electricity demand for the utility and each customer class.

b) Forecasts shall be provided for the reference case as well as, at a minimum, the low and high baseline forecasts, as described in Section 2.03 (C)(2)(a)(ii) and (iii) below.

c) Historic Peak Demand and Energy- Historic data shall be reported covering the ten-year (10-year) period prior to the first year of the IRP Planning Period, and shall include:

i. The total annual electricity generation and sales for the utility and consumption for each customer class determined in accordance with tariffs for billing.

ii. The coincident peak electricity demand for the utility and each customer class.

d) Load Forecast Methodology Description- PREPA shall provide a detailed explanation of the method used to forecast load requirements throughout the Planning Period, the significant determinant variables that were incorporated in the Load Forecast methodology, and the method used by PREPA to select the reference, high and low load forecasts.

e) Prior Load Forecast Evaluation- PREPA shall prepare an evaluation of the load forecast provided in the most recent IRP, which shall include:

i. An assessment of the annual accuracy of the previous forecasting including a comparison of forecasted versus actual data;

ii. An explanation of the cause of any significant deviation between the previous forecasts and the actual annual peak demand and energy that occurred. For purposes of this sub-section, significant deviation refers to a difference of more than 5%.

iii. An explanation of the impact that historical demand-side resources had on the prior load forecast.

2) Load Forecast Analysis - PREPA shall develop peak electricity demand and annual electricity consumption forecasts for each year of the IRP Planning Period, according to the following criteria:

a) PREPA shall prepare at least three (3) baseline Load Forecasts to reflect a reasonable range of future uncertainties:

i. A reference case representing PREPA's best understanding of expected circumstances or median probability outcomes;

ii. A low case where customer electricity demand and consumption are significantly below utility median expectations through the Planning Period; and

iii. A high case where customer electricity demand and consumption are significantly above utility median expectations through the Planning Period.

b) The Load Forecasts shall be developed using methods that examine the effect of economic factors on electricity consumption, as well as the effect of the use of lands under the Land Use Plan for Puerto Rico.

c) A reasonable set of assumptions for econometric and/or end use variables shall be included in the development of the long-term Load Forecasts.

d) The Load Forecasts shall take into account all anticipated naturally occurring energy efficiency, as well as any energy efficiency resulting from existing and expected building codes and appliance standards.

e) Utility-sponsored or third-party energy efficiency and/or demand-response programs should be considered incremental system resources and thus excluded from the baseline Load Forecasts.

f) The Load Forecasts shall reflect normal weather conditions.

g) PREPA shall analyze and consider the impact that existing demand-side resources, anticipated changes to rate design, building codes and standards, deployment of distributed generation, and other important factors are expected to have on the Load Forecast.

h) PREPA shall analyze and consider the impact of technical losses in the Load Forecast, including the extent to which the forecast includes the effects of current and planned technical loss reduction programs.

i) PREPA shall analyze and consider the impact of non-technical losses in the Load Forecast, including the extent to which the forecast includes the effects of current and planned non-technical loss reduction programs.

D) Existing Resources- PREPA shall describe all existing resources that serve or meet PREPA's customer's energy and capacity requirements. The IRP shall include the following:

1) Existing Supply-Side Resource Documentation- PREPA shall describe the energy supply from existing supply-side resources, providing information about the fleet of generators that serve PREPA customers.

a) PREPA shall describe each type of supply-side resources, including at least the following categories:

i. Utility-owned generation;

ii. Wholesale power purchase transactions that are one (1) year or longer in duration and a detailed discussion of the same, including the term of the contract, expiration date, pricing provisions, source of the power, fuel source, and other relevant information;

iii. Cogeneration and Small Power Production;

iv. Distributed Generation;

v. Pooling or coordination agreements that reduce resource requirements; and

vi. Any other supply-side resources.

b) Existing Supply-Side Resource Table- The following information concerning each existing supply-side resource shall be supplied, as applicable and as readily available to PREPA with respect to private resources, in the form of a coherent table(s) in the body of the IRP:

i. Resource type;

ii. Nameplate and peak available capacity;

iii. Annual capacity factor for each of the last five (5) years;

iv. Fuel type;

v. Ownership information, including the portion of the resource owned by PREPA, by a private project developer, or by a customer;

vi. Location (district or municipality);

vii. Commercial operation date;

viii. Remaining service life;

ix. Any anticipated projects or programs that would alter remaining service life;

x. Remaining contract life;

xi. Average annual heat rate over the last five (5) years;

xii. Current fuel cost in dollars per MMBtu;

xiii. Current variable operations and maintenance (O&M) cost in dollars per MWh;

xiv. Current total production cost in dollars per MWh, including any other necessary variables aside from fuel and variable O&M costs;

xv. Current fixed O&M cost in dollars per kW;

xvi. Average annual capital expenditures over the last five (5) years in total dollars;

c) Existing Supply-Side Resource Supplemental Data- The following information concerning each existing supply-side resource shall be supplied as part of Appendix 5 identified in Section 2.02(D) of this Regulation.

i. All information in sub-section (b) above;

ii. Expected retirement date for any resource expected to retire within the first ten (10) years of the Planning Period, and an explanation of the reason for the retirement;

iii. Dates for renewal of operating licenses and permits, to the extent applicable; and

iv. Compliance schedule with current, proposed, and reasonably anticipated regulatory (including environmental regulatory) and legal requirements, to the extent applicable;

v. Expected capital and operating costs for compliance with current, proposed, and reasonably anticipated regulatory (including environmental regulatory) and legal requirements, to the extent applicable;

vi. Expected yearly non-environmental capital expenditures for the first ten (10) years of the Planning Period, including any improvements to operational efficiencies or extensions of the useful life;

vii. Any important changes to the resources that occurred since the approval of the most recent IRP or which is expected to occur prior to the filing of a review, update or amendment IRP, including:

A. A description of each large capital project (over $5,000,000) expected in the next (5) years;

B. Changes in fuel types, or procurement sources or strategies; and

C. Operational changes expected to result from economic restrictions or environmental regulations.

viii. A description, with quantitative information and analysis as required, of how the resource contributes to meeting the requirement for "high efficiency" generation, as that term is defined by the Commission, in accordance with Section 6.29(a) of Act 57.

2) Existing Demand-Side Resource Documentation- The IRP shall describe all demand-side resources currently being implemented by or on behalf of PREPA. The resource descriptions shall be consistent with the most recent Energy Efficiency and Demand Response Annual Report and Energy Efficiency and Demand Response Plan ("Annual Report and Plan"), as described in Section 4.01 of this Regulation. Any inconsistencies or changes with respect to existing demand-side resources relative to what is described in the most recent Annual Report and Plan shall be described in detail.

E) Resource Needs Assessment– PREPA shall prepare a Resource Needs Assessment and describe in detail the results of such assessment. The purpose of the Resource Needs Assessment is to identify current and/or future expected capacity and/or energy requirements resulting from the expected or contractual retirement of, or cessation of services from, existing supply and demand-side resources when compared against forecast load conditions. The Resource Needs Assessment shall contain at least the following elements:

1) Planning Reserve Margin Assessment- PREPA shall assess and describe in detail its expected Planning Reserve Margin over the Planning Period.

a) The Planning Reserve Margin Assessment shall follow industry standard methodologies in assessing a necessary planning reserve margin to maintain reliable service during the Planning Period.

b) To the extent that the Reserve Margin Assessment cannot be developed independently of a resource plan, PREPA may use its then-current business plan to assess and describe the necessary planning reserve margin.

c) PREPA shall demonstrate why the Planning Reserve Margin targets in its forecast are reasonable.

2) Load and Resource Balance- PREPA shall prepare a coherent table showing, by year, the expected capacity of each existing supply-side and existing demand-side resource, its load requirements, and load requirements including the Planning Reserve Margin. PREPA shall identify its annual net position relative to its expected needs during the Planning Period.

F) New Resource Options- PREPA shall describe new resource options that may reasonably serve or meet PREPA's customer's energy and/or capacity requirements.

1) New Supply-Side Resource Option Identification– The IRP shall identify and evaluate a wide range of new supply-side resource options, including renewable and non-renewable options, to be used in the development of the IRP. While PREPA may designate specific options as not feasible for future development, such designations must be accompanied by a clear and comprehensive explanation that justifies PREPA's determination on the basis of cost, resource availability, or engineering feasibility.

a) New Supply-Side Resource Options Table- For each supply-side resource option identified as a feasible alternative, PREPA shall provide the following information, as applicable, in the form of a coherent table in the body of the IRP:

i. Resource type;

ii. Location, if a specific project site has been identified; otherwise, restrictions and other considerations that may dictate resource placement;

iii. Capacity;

iv. Fuel type;

v. Capacity factor for renewable energy resources;

vi. Effective load carrying capacity (ELCC) or capacity contribution to peak;

vii. Ownership information including the portion of the resource owned by PREPA, by a private project developer, or by a customer;

viii. Anticipated service life;

ix. Heat rate;

x. Overnight capital cost;

xi. Fixed O&M cost;

xii. Variable O&M cost;

b) New Supply-Side Resource Options Supplemental Data- For each of the resources identified in (a) above, the following information shall be supplied as part of Appendix 5 identified in Section 2.02(D) of this Regulation.

i. All information in (a), above, and

ii. Other costs to construct and/or operate the resource, including financing costs, property taxes, supplemental payments, and interconnection costs;

iii. Lead time necessary to plan and build, or acquire through a power purchase agreement;

iv. Any constraints on the acquisition or construction of the resource as applied by PREPA in the Capacity Expansion Model, including first potential date of construction, maximum units feasible to acquire or construct per year, and total number of the resources allowed in the model through the Planning Period;

v. Any constraints on the operation or the dispatch of the resource as applied by PREPA in its modeling, including minimum up-time, minimum down-time, or energy or effluent limitations;

vi. Any impact of the location of the resource on reliability and system resilience;

vii. Evaluation of the interconnection of renewable energy projects and other independent power producers to the utility system in order to comply with Act 82-2010, as amended.

viii. A description, with quantitative information and analysis as required, of how the resource contributes to meeting the requirement for "high efficiency" generation, as that term is defined by the Commission, in accordance with Section 6.29(a) of Act 57.

2) New Distributed Generation Resource Identification- The IRP shall include a projection and account for expected types and amounts of customer-owned distributed generation, by customer class.

   a) PREPA shall provide an analysis that forms the basis of its projections.

   b) PREPA shall include its projections of distributed generation in the IRP as an expected reduction from the baseline Load Forecasts.

3) New Demand-Side Options Identification- The IRP shall identify and include a wide range of potential new energy efficiency and demand response programs.

   a) PREPA shall identify, and include in its analysis, all demand-side programs currently being offered by or on behalf of PREPA.

   b) PREPA shall provide a description of the energy efficiency programs developed and implemented in conjunction with the Government of Puerto Rico to comply with Chapter IV of Act 57-2014, and detail the impact of such programs on PREPA's Resource Plan.

   c) The IRP shall consider all available cost-effective energy efficiency and demand response measures and programs.

   d) The IRP shall consider bundles of demand-side resources at varying levels of cost and effectiveness and their implementation throughout the Planning Period. The IRP shall list constraints on the acquisition of those resources, such as ramp rate, expected lifetime or decay, and year availability.

   e) Until such time as the Commission has approved the results of an energy efficiency and demand response potential study, or if said study shows that the maximum achievable cost-effective potential is greater than or equal to two percent (2%) on energy savings per year for at least ten years, the IRP shall consider the estimated cost of developing and implementing sufficient demand-side resources such that a target incremental saving of at least two percent (2%) per year, for at least 10 years, is achieved.

f) If the approved potential study shows that the maximum achievable cost-effective potential is less than two percent (2%) per year, the IRP shall consider the estimated cost of developing and implementing sufficient demand-side resources such that the maximum achievable cost-effective potential is achieved.

4) New Storage Resource Identification- The IRP shall identify and evaluate electrical energy storage options, including batteries.

a) For each electrical energy storage option considered, the IRP shall describe the anticipated use of the storage option, whether to reduce renewable curtailment, provide voltage and frequency stability and/or regulation, or other purposes.

b) The IRP shall include a valuation framework for energy storage options. Such valuation framework will contemplate at least the following:

i. Value provided by provision of ancillary services (which may include, but are not limited to, avoidance of load shedding);

ii. Value provided by load-shaping services (which may include, but are not limited to, load shifting or peak shaving); and

iii. Value provided by locational benefits (which may include, but are not limited to, congestion relief or deferral of T&D upgrades or expansions).

G) Assumptions and Forecasts

1) Model Assumption Documentation- The IRP shall document key modeling assumptions and inputs, including, at least, the following:

a) Annual fuel prices for each delivered fuel at Puerto Rico;

b) Annual emission prices;

c) Economic conditions;

d) Environmental regulations;

e) Other non-environmental regulations, including renewable portfolio standards;

f) Utility discount rate or weighted average cost of capital;

g) Annual debt limitations;

2) Model Assumption Development- The IRP shall identify factors that will significantly influence key forecasts (including electricity demand, electricity consumption, fuel prices), and develop a range of possible outcomes for those forecasts encompassing at least the fifth (5th) and ninety-fifth (95th) percentile outcomes as understood by PREPA.

   a) Forecasts should include exogenous elements beyond PREPA's control, including but not limited to:

      i. Economic conditions;

      ii. Environmental regulations;

      iii. Changes in customer load not caused by utility Demand-Side Resources;

      iv. Customer-sited distributed generation;

      v. Fuel prices;

      vi. Emissions costs; and,

      vii. Capital costs.

   b) For each forecast, the IRP shall identify a reference case forecast, and describe the basis of the forecast range identified.

   c) Scenario Development- The IRP shall consider multiple scenarios that encompass the reasonable range of possible outcomes for uncertain forecasts. Scenarios may combine key forecasts in a manner that enables a reasonable exploration of the range of foreseeable risks to the safety, reliability, and affordability of retail services. The IRP shall consider a sufficient number of scenarios to both describe feasible or likely sets of forecasts, as well as capture a wide range of possible risks.

      i. PREPA shall justify the scenarios used and excluded from consideration, and describe why the combinations assessed represent a reasonable range of risks.

      ii. To the extent that PREPA relies on explicit or implicit relationships or correlations between forecasts, PREPA shall describe the basis of the relationships.

      iii. PREPA shall incorporate any scenarios required by the Commission as identified in Section 3.01(A) of this

Regulation.

d) Reference Case Scenario- The IRP shall include a Reference Case Scenario, representing PREPA's best understanding of expected circumstances or median probability outcomes.

H) Resource Plan Development

1) Resource Plan Development Documentation- The IRP shall identify in detail the mechanisms used by PREPA in developing its Resource Plans.

a) The IRP shall include, within the main body of the IRP, the following:

i. Comprehensive descriptions of the modeling mechanisms used in the development and sensitivity analysis of each Resource Plan, based on Capacity Expansion Models. PREPA may in addition use production costs models, a heuristic approach, or a combination of the two. The description should identify key steps to incorporate inputs and assumptions from sub-sections (C) through (G), above.

ii. Descriptions of key Resource Plan assumptions and purposes, including consideration of stakeholder input and Commission requirements.

iii. A coherent table illustrating the key differences between Resource Plans, including annual retirements, retrofits or conversions, and new builds for both supply and demand-side resources, changes in capacity (uprates or derations) of existing supply and demand-side resources, changes in transmission or distribution systems, key assumptions, and Resource Plan cost.

iv. A description of the mechanism and criteria used to select the Preferred Resource Plan, following the requirements in Section 2.03(H)(2)(d) below.

v. A coherent Load and Resource Balance table for the Preferred Resource Plan showing, by year, the expected capacity of each existing and new supply-side and demand-side resource, its expected peak load, its Planning Reserve Margin, and its total load requirements including the Planning Reserve Margin. PREPA shall identify its annual net position relative to its expected needs during the Planning Period.

b) For the Preferred Resource Plan, and for each Resource Plan considered in the IRP, the IRP shall include, at a minimum, the following supplemental information:

i. A table of annual capacity contribution by resource;

ii. A table of annual generation by resource;

iii. A table of annual emissions by resource;

iv. A table of annual fuel consumption by fuel type;

v. A cash-flow table comprised of annual cost values for, at a minimum, fuel spending by type of fuel, generation capital, transmission capital, fuel infrastructure capital, total generating unit variable O&M, total generating unit fixed O&M; fuel infrastructure O&M; CO_2, NO_x, and SO_2 emissions; fossil power purchase agreements; and renewable power purchase agreements.

2) Resource Plan Development Analysis-

a) Resource Plan Development Modeling- The IRP shall use a Capacity Expansion Model to develop least-cost Resource Plans that meet customer needs under the reference case scenario and various future scenarios. If PREPA does not use a Capacity Expansion Model to develop least-cost Resource Plans, the utility must seek, and receive, a waiver from the Commission to use any other kind of Resource Plan Development model for this purpose, in which case the Commission may adopt through resolution any and all appropriate requirements to ensure reliability of the information and conclusions produced and presented by PREPA.

i. The Capacity Expansion Model shall at a minimum:

A. Seek to optimize the present value of revenue requirements over the Planning Period;

B. Consider demand-side resources in a competitive framework with supply-side resources;

C. Recognize all utility-borne costs associated with the development of new resources;

D. Recognize all utility-borne costs, as well as avoided costs, associated with the retirement or modification of existing resources.

ii. Costs that PREPA has incurred or committed prior to the commencement of the Planning Period (including, but not limited to, existing plant balances, committed capital expenditures, and rate-based costs) shall not be assessed in the Capacity Expansion Model unless they are specifically avoidable through the procurement of new assets or retirement or modification of existing assets.

iii. PREPA shall use the Capacity Expansion Model to develop a comprehensive set of Resource Plans to include a wide variety of supply-side, energy efficiency, and demand response resources.

iv. Supply-side resources shall include various options for early retirement of existing power plants, for refurbishment or repowering of existing power plants, and for deferral of new power plants where feasible.

v. Supply-side resources shall also include any changes in the transmission or distribution systems that accompany generation resources or are necessary for the maintenance of system reliability.

vi. Energy efficiency and demand response resources shall include programs with a variety of different cost levels, in order to assist in the identification of all cost-effective energy and demand response resources.

vii. PREPA shall incorporate any Resource Plans required by the Commission as identified in Section 3.01(A).

viii. PREPA shall provide a comprehensive discussion of any Resource Plans excluded from consideration on the basis of reliability or viability.

ix. Each Resource Plan shall be designed to ensure that PREPA complies with the renewable portfolio standard requirements of Act 82-2010.

b) Resource Plan Sensitivity Analyses- Each of the Resource Plans resulting from the Resource Plan Development Modeling shall be subjected to sensitivity analyses exploring a reasonable range of uncertainty in forecast assumptions. The purpose is to examine the robustness of resource plans created in the optimization analysis (i.e., how each resource plan would be affected by changes in input assumptions).

i. The sensitivity analyses shall hold the resources developed in each Resource Plan constant and examine the impacts of changing uncertain forecasts.

ii. PREPA shall consider the following factors in the uncertainty analysis:

A. forward-looking economic conditions;

B. environmental regulations;

C. changes in customer electricity demand and consumption;

D. customer generation;

E. fuel prices;

F. environmental costs or restrictions;

G. construction costs; and,

H. combinations thereof as reasonable.

iii. PREPA may choose to use either the developed Planning Scenarios as sensitivities, develop a broader range of sensitivities, including single-factor sensitivities and multiple factor sensitivities, or use a Monte Carlo analysis framework, wherein uncertain forecasts are chosen and combined stochastically. The IRP shall describe and justify the basis of the sensitivity analysis made.

iv. The IRP shall present the outcome of each sensitivity analysis in present value of revenue requirements. If PREPA utilizes a Monte Carlo analysis, results should be presented as the median outcome and the fifth (5th) and ninety-fifth (95th) percentile costs.

v. These sensitivity analyses should be used to inform the selection of the Preferred Resource Plan.

c) Hybridized Alternative Resource Plans- PREPA may choose to modify one or more of the optimized Resource Plans based on the outcomes of the sensitivity analysis, if such a modification results in a Resource Plan that is of a comparable cost and demonstrably robust in the sensitivity analysis.

i. PREPA shall justify the modifications it has made to the Resource Plans used in the Hybridized Alternative Resource Plan.

ii. The use or analysis of this Hybridized Alternative Resource Plan does not preclude the complete analysis of other Resource Plans in the sensitivity analysis.

d) Preferred Resource Plan- PREPA shall select a Preferred Resource Plan from among the Resource Plans developed and evaluated in the optimization and sensitivity analyses.

i. In selecting the Preferred Resource Plan, PREPA shall use the minimization of the present value of revenue requirements as the primary selection criterion.

ii. PREPA shall also consider other criteria including, but not limited to, system reliability; short and long-term risk; environmental impacts; transmission needs and implications; distribution needs and implications; financial impacts on PREPA; and the public interest as set forth in Act 57-2014. Where meeting these needs is associated with quantifiable costs, these costs shall be included in the calculation of the present value of revenue requirements.

iii. The IRP shall include a detailed discussion of each of the above factors in support of its Preferred Resource Plan. PREPA may opt to choose a plan that is not the lowest cost, provided that, in doing so, it presents a detailed description of all the criteria and reasoning used to select the Preferred Resource Plan that is not the lowest cost.

I) Caveats and Limitations- The IRP shall include an annotated list of key caveats and limitations of its analysis, including the impact of uncertainty, the modeling mechanism, key regulatory and project execution assumptions, and costs. The purpose of this section is to illustrate PREPA's certainty with respect to the Preferred Resource Plan.

J) Transmission and Distribution Planning

1) Transmission and Distribution System Documentation

a) Existing Transmission Facilities Descriptions- The IRP shall include a brief narrative description of the existing electric transmission system and identify any transmission constraints and critical contingencies. The information shall include at a minimum:

   i. A summary of the characteristics of all existing transmission and subtransmission facilities of thirty-eight kilovolts (38 kV) or higher;

   ii. A discussion of whether the transmission system constrains the transfer of electricity from existing projects, potential new projects, or projects under development or consideration, including a description of its ability to interconnect intermittent renewable generation projects and microgrids, as applicable, and with as much specificity as practical;

   iii. A schematic map of the transmission and subtransmission network showing transfer limits, which shall be treated as Critical Energy Infrastructure Information and handled in accordance with the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time; and

   iv. A map showing the actual, physical routing of the transmission and subtransmission lines, geographic landmarks, major metropolitan areas, and the location of substations and generating plants, and interconnections with distribution substations. The IRP shall include two copies of this map on a 1:250,000 scale. Such map shall be treated as Critical Energy Infrastructure Information and handled in accordance with the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time.

b) Existing Distribution Facilities Description- The IRP shall include a brief narrative description of the distribution system, including description of its ability to accommodate incremental penetration of distributed generation, including intermittent distributed generation, and its ability to receive new loads over time, such as, for example, increasing penetrations of electric vehicles. In addition, the IRP shall provide PREPA's current distribution system design criteria. Information of PREPA's current distribution system shall include:

i. Load flow or other system analysis by voltage class of the electric utility's distribution system performance that identifies and considers each of the following:

A. Any thermal overloading of distribution circuits and equipment.

B. Any voltage variations on distribution circuits that do not comply with the current version of the American National Standard Institute ("ANSI") Standard C 84.1, Electric Power Systems and Equipment Voltage Ratings or Standard as later amended.

C. PREPA shall identify any portion of this analysis that it deems Confidential Energy Infrastructure Information. The Commission will handle it in accordance with the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time.

ii. Adequacy of the electric utility distribution system to withstand natural disasters and overload conditions.

c) Existing Advanced Grid Technologies Description- The IRP shall identify the areas within the service territory where advanced meters and other advanced grid technologies have been installed, along with any plans to expand the integration of any such technologies into its system. The IRP shall include a brief description of the installed advanced grid technologies.

d) Planned Transmission Facilities Description- The IRP shall provide a detailed narrative description of any planned electric transmission and subtransmission facilities, and a description of the plans for development of facilities during the next ten years of the Planning Period. The description shall include, at a minimum, all information regarding:

i. New lines, including any requirements of new rights-of-way;

ii. Lines in which changes in capacity, either in terms of current, voltage or both, are scheduled to take place; and

iii. Other changes in transmission lines or rights-of-way, which would be considered as substantial additions.

iv. A listing of all proposed substations including size and location.

v. The transmission forecast shall include maps of the planned transmission system as follows:

   A. A map showing the planned transmission lines, substation, and generating plants as they will tie into the existing system to provide as complete a picture of the system as is possible.

vi. PREPA shall submit a justification of its of transmission development plans, including:

   A. Description and transcription diagrams of the base case load flow studies, one for the current year and one as projected five and ten years into the future, and provide base case load flow studies in a standard industry format (such as PSS/E or PSLF) along with transcription diagrams for the base cases. Such information shall be treated as Critical Energy Infrastructure Information and handled in accordance with the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time.

vii. A tabulation of and transcription diagrams for a representative number of contingency cases studied along with brief statements concerning the results.

viii. Adequacy of PREPA's transmission system to withstand natural disasters and overload conditions.

ix. A high-level analysis of PREPA's transmission system's ability to permit power interchange with microgrids and other independent power producers. PREPA should provide examples of interconnection studies from recent renewable integration projects.

x. A diagram showing PREPA's import and export transfer capabilities and identifying the limiting element(s) during each season of the next ten years. In addition, PREPA will provide a listing of transmission loading relief (TLR) procedures called during the last two seasons for which actual data are available. For each TLR event, the listing shall include the maximum level, and the duration at the maximum level, and the magnitude (in MW) of the power curtailments.

xi. A description of any studies regarding transmission system improvement, including, but not limited to, any studies of the potential for reducing line losses, thermal loading, and low voltage, and for improving access to alternative energy resources.

xii. A one-line diagram of the transmission network. Such information shall be treated as Critical Energy Infrastructure Information and handled in accordance with the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time.

e) Planned Distribution Facilities Description- The IRP shall provide a detailed narrative description of any planned changes in approach, standard practice, or broadly applicable substation, circuit, or feeder design for PREPA's distribution system for the next ten years. This description shall address any changes in distribution facilities that impact the ability to accommodate incremental penetration of distributed generation, including intermittent distributed generation, and the ability to receive new loads over time. PREPA shall submit a substantiation of distribution development plans, including, if available:

i. Load flow or other system analysis by voltage class of the electric utility's distribution system performance that identifies and considers each of the following:

A. Any thermal overloading of distribution circuits and equipment.

B. Any voltage variations on distribution circuits that do not comply with the current version of the American National Standard Institute ("ANSI") Standard C 84.1, Electric Power Systems and Equipment Voltage Ratings or Standard as later amended.

ii. Adequacy of the electric utility distribution system to withstand natural disasters and overload conditions.

iii. Analysis and consideration of any studies regarding distribution system improvement, including, but not limited to, any studies of the potential for reducing line losses, thermal loading and low voltage or any other problems, and for improving access to alternative resources.

2) Transmission and Distribution System Analysis

a) The IRP shall identify PREPA's transmission standards and shall confirm that the PREPA transmission standards are in compliance with the standards of the North American Electric Reliability Corporation. If any of PREPA's transmission standards are inconsistent with standards from the North American Electric Reliability Corporation, then PREPA shall identify each such inconsistent standard and provide the explanation and rationale for the inconsistency.

b) The IRP shall include a System Stability Analysis, which shall be treated as Critical Energy Infrastructure Information and handled in accordance with the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time. The analysis shall provide operational criteria, define Ancillary Services requirements, and demonstrate least-cost mitigation solutions to maintain system stability;

c) The IRP shall identify thermal and voltage reliability issues in PREPA's transmission system and distribution systems. Such information shall be treated as Critical Energy Infrastructure Information and handled in accordance with the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time;

d) The IRP shall identify transmission, distribution, and substation potential improvements to increase reliability and meet minimum transmission standards;

e) The IRP shall document the transmission and distribution implications of the Preferred Resource Plan, including assessing if the plan requires incremental transmission or distribution mitigation or changes.

K) Action Plan- The purpose of the Action Plan is to specify implementation actions that need to be performed during the first five years of the Planning Period as a result of the Preferred Resource Plan. The Action Plan is not intended to replace or modify additional resource certification processes required by statute or other Commission rules and orders.

1) Action Plan Documentation- The Action Plan shall include a table of key actions in the first five years after approval of the IRP including, at a minimum, expected procurement processes for supply-side resources and energy efficiency, permitting requirements, construction activities, required studies, and other significant events. The Action Plan shall cover intended acquisitions of demand-side, supply-side, transmission, distribution, and/or fuel infrastructure resources; retirements and/or retrofits of existing generating resources; entrance into, renegotiation or cessation of power purchase agreements; and any other resource commitments.

   a) For each action, the IRP shall specify and provide:

      i. The expected calendar year and quarter in which the action will be commenced;

      ii. The expected calendar year and quarter in which the action will be completed;

      iii. Issuances of permits and other regulatory actions that are required in order for the resource action to take place.

      iv. For any major expected resource acquisitions, retirements, retrofits or power purchase agreements, the action plan shall provide information on the cost of the option chosen and the plan for financing that option.

      v. The anticipated impact of the resource action on any relevant Performance Metrics established by the Commission as described in Section 5.01.

      vi. Any other information required by the Commission through resolution or order.

2) Action Plan Development.

   a) The Action Plan shall be based on the Preferred Resource Plan described in subsection (H)(2)(d) above.

   b) The Action Plan shall cover a period of no less than five (5) years from the date of filing of the IRP. Information shall be provided for any activities that are or will be underway or planned to take place within the Action Plan period.

   c) The Action Plan shall account for environmental impacts and shall discuss the plans to meet environmental regulatory requirements at existing resources subject to such requirements.

d) The Action Plan shall comply with all laws and regulations enacted that address requirements for demand-side resources and supply-side resources, including but not limited to Act 82-2010.

e) Any given Action Plan will remain in effect until a new Action Plan is approved as part of a subsequent IRP proceeding or until the Commission states otherwise.

L) Prior Action Plan Implementation Status Update- The IRP shall provide a status update on the implementation of the Action Plan in effect at the time of the filing of the IRP (or the most recent Action Plan, if the filing of a proposed IRP occurs after the expiration of any previous Action Plan). This status update shall include the following:

1) An itemized list of each element of the prior IRP Action Plan;

2) A description of PREPA actions taken to execute each action item;

3) Any changes to date in the timeframe of expected commencement and completion, permitting or regulatory requirements, or removal of the action item based on intervening events;

4) Any changes to permitting, engineering or construction processes of Major Projects already in progress; and

5) A description of the cause of any changes to the prior IRP Action Plan.

M) Renewable Energy Project Status Update- The IRP shall include an assessment of new and contracted renewable energy projects, and PREPA's expected ability to meet renewable portfolio standard targets. This update shall be comprised of the following:

1) An itemized list of each new renewable energy project under contract but not yet built at the time of the IRP filing. For each project, the IRP shall identify:

a) If the project was included as an existing resource in the IRP filing;

b) If the project was included as a likely new resource in the IRP filing, and the expected online year;

c) PREPA's contracted energy price for the project, including any applicable price escalators;

d) Any other expected payments to be made by PREPA for the project, including renewable energy supplemental payments, capacity payments, or fixed charges, and a description of the price and price structure for such payments;

e) The contracting, permitting, financing and construction stage of the project; and

f) PREPA's assessment of the likelihood of project completion.

2) An assessment of PREPA's expected ability to meet renewable portfolio standard targets, including a table showing PREPA's anticipated compliance position for each year of the Planning Period.

N) Demand-Side Resources Status Update- The IRP shall include an assessment of new and contracted demand-side energy and capacity projects, including energy efficiency, demand-response, distributed generation, and load control programs. This update shall be comprised of an itemized list of each new demand-side resource program under contract but not yet implemented or built at the time of the IRP filing. For each project, the IRP shall list:

1) If the project was included as an existing resource in the IRP filing;

2) If the project was included as a likely new resource in the IRP filing, and the expected online year or expected program operation date;

3) PREPA's contracted energy price for the project, including any applicable price escalators;

4) PREPA's contracted capacity price for the project, including any applicable price escalators;

5) Any other expected payments to be made by PREPA for the project, and a description of the price and price structure for such payments;

6) The contracting, permitting, financing and implementation stage of the project; and

7) PREPA's assessment of the likelihood of project completion.

Section 2.04.- Schedule and Filing.

A) As required by Article 6.23 of Act 57-2014 and Section 6B(h) of Act 83, every three (3) years from the date a Commission-approved IRP is effective and is legally binding, PREPA shall submit for Commission approval an IRP proposal in accordance with the provisions of this Regulation and applicable

Commission resolutions and orders. In the case of a substantial change in the energy demand or group of resources, the Commission may order that the review of the next IRP be carried out before the three (3) years provided in herein to respond to and/or mitigate such changes.

B) When filing an IRP, PREPA shall simultaneously publish on its website a true and exact copy, subject to applicable confidentiality privileges, of the IRP proposal submitted to the Commission.

The filing of the IRP shall initiate a proceeding at the Commission pursuant to the provisions of this Regulation, and to the provisions of Commission Regulation No. 8543. In the event of any discrepancy between the provisions of this Regulation and the provisions of Regulation 8543, the provisions of this Regulation shall prevail.

Section 2.05.- Update, Amendment or Review to an Approved IRP

A) At any moment prior to the 3-year filing requirement for new IRP proposals, PREPA may, submit a proposed update, amendment or review to an approved IRP. Reasons that might warrant PREPA to consider proposing an update, amendment or review to an approved IRP include, but are not limited to:

1) It anticipates submitting an application for a certificate to construct, purchase or otherwise acquire a long-term supply-side or demand-side resource that was not previously included as part of the approved IRP;

2) It anticipates the need to undertake a procurement process for a demand-side or supply-side resource that was not previously included as part of an approved IRP;

3) The data used in the formulation of its approved IRP requires significant modification that affects the choice of a resource contemplated in the approved IRP;

4) It expects to make a Major Change to the Action Plan or Capital Plans before the filing of the next IRP proposal.

B) Notwithstanding paragraph (A) of this Section, the Commission shall have the authority to require PREPA to file an update, amendment or review to the approved IRP, should it determine that conditions warrant such action.

C) In seeking an update, amendment or review to an approved IRP, PREPA must show that the proposed update, amendment or review is the preferred option, taking into account the requirements set forth in Section 2.03(H)(2)(d) of this Regulation.

D) In seeking an update, amendment or review to an approved IRP, PREPA shall propose for Commission review, the components of Section 2.03 of this

Regulation that should be applied to the analysis of the proposed update, amendment or review. The Commission will establish, through resolution or order, the specific components of Section 2.03 that shall apply.

E) The filing of an IRP update does not relieve PREPA from its obligation to file a new, complete IRP every three (3) years from the date of approval of the most recent IRP.

Section 2.06.- Certification of Compliance with Section 6B of Act 83

The IRP shall include a certification regarding PREPA's compliance with the requirements of Section 6B (h)(vi) of Act 83.

ARTICLE III. PROCEDURE BEFORE THE COMMISSION

Section 3.01.- IRP Prefiling Process (Phase 1)

A) When filing a proposed IRP for Commission approval, the following procedures shall be followed:

   1) No less than two years after the approval of the most recent IRP, the Commission may schedule one or more technical conferences to gather information regarding the methodology and contents contemplated by PREPA for its new IRP proposal. In scheduling these technical conferences, the Commission may require PREPA to provide specific information regarding the development of the proposed IRP. The Commission will set forth, in its Orders scheduling the technical conferences, the process for the orderly presentation of information.

   2) The purpose of these technical conferences is to provide an opportunity for the Commission to ensure PREPA's IRP filing will reasonably comply with the requirements set forth in this Regulation and the analysis conducted therein will be sufficiently robust so as to comply with public policy goals and meet Commission expectations as to the quality of the analysis and information provided. These proceedings will also provide an opportunity for PREPA to seek clarifications from the Commission with regards to compliance with the requirements set forth in this Regulation.

B) During the Phase 1 period, the Commission may require PREPA to do the following:

   1) Consider certain plausible scenarios, including but not limited to such matters as changes in environmental regulations, the need for transmission expansion, and, significant changes to fuel prices or customer demand, and

   2) Exclude or expand certain conditions of Section 2.03.

C) The Commission may require PREPA to address any special issues it believes should be included in the IRP that are not specifically set forth in these rules.

Section 3.02 Filing of the IRP (Phase 2)

A) Within thirty (30) days from the date in which PREPA files its proposed IRP, the Commission shall review the IRP filing to determine whether it complies in full with the requirements of this Regulation.

1) If the Commission finds that the IRP filing complies with the requirements of this Regulation, the Commission will issue a resolution indicating that the IRP is complete and that the adjudicative process may begin. A determination of completeness by the Commission shall not be construed as a ruling on the substance of the IRP filing.

2) If the Commission finds that the IRP filing is not in compliance with this Regulation, the Commission will identify the specific areas in which PREPA's filing is deficient and the information required to correct such deficiency. The Commission shall grant a reasonable term for PREPA to refile its proposed IRP.

3) Once PREPA refiles the proposed IRP with the corrections of the identified deficiencies, the Commission shall evaluate such refiling within thirty (30) days to determine if it complies with this Regulation and shall issue any appropriate order or resolution.

4) If the Commission determines that the deficiencies in PREPA's filing are of such nature that correcting them through the process established above is not practical, the Commission may reject PREPA's filing in its entirety.

B) The Commission, at its discretion, may extend its review period to determine whether the IRP filing complies with the requirements of this Regulation.

Section 3.03.- Intervening Parties.

A) Any person may file a petition to intervene in the IRP proceeding within thirty (30) days after the Commission's determination that the proposed IRP is complete. Nevertheless, the Commission shall retain the discretion to grant petitions to intervene filed after the expiration of the 30-day time period.

B) The Commission will address petitions to intervene in accordance with Section 5.05 of Regulation 8543 and Sections 3.5 and 3.6 of Act 38-2017.

Section 3.04.-Initial Technical Hearing.

Within forty-five (45) days from the date PREPA's IRP filing is determined to be complete, the Commission will hold an initial hearing in which PREPA will have the opportunity to present its IRP filing and answer initial questions from the

Commission Staff, its consultants and Intervenors regarding the content of the IRP filing. The initial hearing shall be open for the public to attend.

Section 3.05.- Procedural Calendar.

Within fifteen (15) days from the date PREPA's IRP filing is determined to be complete, the Commission will issue an Order detailing the procedural calendar and any rules governing the proceeding, including, but not limited to, discovery, hearings and, filings and other pleadings.

Section 3.06.- Prefiled Written Direct Testimony

A) The IRP filing shall include a list of each PREPA witness and must identify the portions, chapters, appendix, workpapers, etc. of PREPA's filing that are being supported by the testimony of each of the listed witnesses.

B) Concurrently with the IRP filing, each witness listed pursuant to paragraph (A) of this Section shall file written testimony stating his or her qualifications, educational background, work experience, subject matter that is being addressed, conclusions and recommendations, and the basis for such conclusions and recommendations. Witnesses need not to sign each page of the prefiled written testimony.

C) Each witness' prefiled written testimony must be accompanied by a signed, notarized statement that contains the following declaration: "Affiant, [(witness name)], being first duly sworn, states the following: The prepared Pre-Filed Direct Testimony and the information, documents and workpapers attached thereto and the portions of the IRP filing I am sponsoring constitute the direct testimony of Affiant in the above-styled case. Affiant states that he/she would give the answers set forth in the Pre-Filed Direct Testimony if asked the questions propounded therein at the time of the filing. Affiant further states that, to the best of his/her knowledge, his/her statements made are true and correct."

D) Prefiled written testimony or accompanying work-papers must contain all analyses, facts and calculations necessary for the Commission to perform a comprehensive analysis and assign it the appropriate probative value.

E) The IRP filing and prefiled written testimony shall avoid generalized or vague statements that would require time-consuming discovery to understand the supporting reasoning or to gather the supporting facts.

Section 3.07.- Publishing of Final IRP Plan on PREPA's Webpage

PREPA shall publish on its website a true and exact copy of the IRP approved by the Commission. This plan must be accessible to the public, free of charge, from the date in which the Commission notifies PREPA of the approval. Notwithstanding the above, PREPA may withhold from publishing on its website those portions of the IRP the

Commission has determined to be confidential or to be Critical Energy Infrastructure Information, pursuant to the procedures set forth in CEPR-MI-2016-0009 as currently amended and may be amended from time to time.

Section 3.08 – Commission Decision

At the conclusion of the evidentiary proceeding, including the filing of final comments and/or oral arguments, the Commission shall issue an order that accepts, rejects, or modifies the IRP in whole or in part. The Commission may also order PREPA to make further modifications to its IRP as specified by the Commission.

CHAPTER III – ENERGY EFFICIENCY, DEMAND RESPONSE AND PERFORMANCE

ARTICLE IV. ENERGY EFFICIENCY AND DEMAND RESPONSE

Section 4.01.- Energy Efficiency and Demand Response Planning and Reporting.

A) Initially, after the effective date of this Regulation, and thereafter, after the determination by the Commission on the IRP, the Commission shall establish through an Order the method to select a third-party administrator that will plan and implement energy efficiency and demand response programs. The third-party administrator shall be contracted by the Commission and shall submit to it their reports thereon. The costs associated with the third-party administrator, including its compensation, as approved by the Commission, as well as the costs related to the implementation of the energy efficiency and demand response programs, will be covered through the electric rates to be approved by the Commission.

B) By the end of the first quarter of each calendar year, the third-party administrator shall file with the Commission any and all Evaluation Measurement and Verification (EM&V) reports that address the energy efficiency and demand response programs implemented during the previous calendar year. The third-party administrator shall file the first EM&V report upon completion of the first full calendar year of energy efficiency and demand response programs. These EM&V reports shall be conducted by independent organizations with expertise in conducting energy efficiency and demand response EM&V studies. The third-party administrator shall spend approximately four to five percent of the total energy efficiency and demand response program budgets on EM&V reports.

C) By the end of the second quarter of each calendar year, the third-party administrator shall file with the Commission an Energy Efficiency and Demand Response Annual Report (EE&DR Annual Report), which shall include detailed information on the historical performance of energy efficiency and demand response programs for the most recent complete calendar year. The third-party administrator shall file the first EE&DR Annual Report upon completion of the first full year of energy efficiency and demand response programs. These Annual Reports shall include at a minimum the following information separately for each energy efficiency and demand response program. This information shall also be aggregated by customer class and for the portfolio of programs as a whole:

1) Costs, broken out by administration costs, marketing and delivery costs, program vendor costs, customer financial incentives, technical or training support offered to customers or other trade allies, customer payments, and other costs;
2) Costs broken down by customer class: residential, commercial, industrial, and governmental.
3) Annual energy savings (measured in MWh) for each year of the Planning Period;
4) Lifetime energy savings (measured in MWh);
5) Peak demand savings (measured in MW) for each year of the Planning Period;
6) Annual cost savings, in dollars ($) for each year of the Planning Period;
7) Quantified non-energy benefits, in dollars ($) for each year of the Planning Period;
8) A discussion of qualitative non-energy benefits;
9) Cumulative present value of program costs and program savings;
10) Net savings, and benefit cost ratio;
11) Eligible customers, program participants, and participation rate, for the past five (5) years in which efficiency programs were delivered and projected for the next three (3) years; and
12) A description of the program, describing the market sector addressed, the customer sector addressed, the delivery mechanism, financial incentives offered to customers, training and technical assistance offered to customers, and other relevant information.

D) By the end of the third quarter of each calendar year, the third-party administrator shall file with the Commission its Energy Efficiency and Demand Response Plan (EE&DR Plan), which shall include its plan for all energy efficiency and demand response programs to be implemented over the next three (3) years. The third-party administrator shall file the first EE&DR Plan with the Commission within 120 days of the start of its contract to implement the energy efficiency and demand response programs, as required by Section 4.01(D) of this Regulation. The EE&DR Plans shall be consistent with the Action Plan of the most recently approved IRP. Any deviations from the most recently approved Action Plan shall be justified with quantitative analyses of economic and other implications of the deviation. The EE&DR Plans shall be designed to enable the third-party administrator to identify and implement all cost-effective energy efficiency and demand response programs, consistent with the most recently approved IRP or any subsequent comparable economic analysis. The EE&DR Plans shall include a proposal for the type and the extent of EM&V reports to prepare for the next three (3) years. The energy efficiency and demand response programs shall conform to best practice program design principles; at a minimum, programs shall:

1) Pass a cost-effectiveness test as designated by the Commission;
2) Address all relevant markets related to efficiency and demand response measures;
3) Serve all customer types;
4) Address all relevant end-uses;
5) Attempt to overcome all relevant market barriers to adoption of energy efficiency and demand response measures;
6) Promote customer equity, both by offering programs to all customer types and by achieving high participation rates across all customers;
7) Ensure that low-income and hard-to-reach customers are marketed and served;
8) Take full advantage of all relevant trade allies to maximize opportunities to market, deliver and install efficiency and demand response measures; and
9) Avoid lost opportunities, which occur when efficiency measures are not installed when it is most cost-effective to do so.

E) The key energy efficiency and demand response programs shall be delivered through third-party contractors. These contractors shall be chosen through a competitive bidding process run by the third party administrator on a periodic basis and approved by the Commission.

F) The third-party administrator shall provide information to PREPA for the purpose of considering energy efficiency and demand response in the development of each IRP. This information shall include the cost and performance of existing energy effcieincy and demand response programs, as well as expected cost and performance of such programs in the future.

ARTICLE V. PERFORMANCE METRICS TARGETS AND INDUCEMENTS

Section 5.01.- Performance Metrics, Targets, and Inducements.

Section 6B (h)(iv) of Act 83 requires PREPA's IRP to include typical performance measures of the electric power industry, and directs PREPA to measure its performance in complying with the mandates of Act 57-2014 in terms of effectiveness and efficiency in providing electric service by conducting a comparative analysis of its performance in relation to the performance of similarly sized and comparable utilities.

The IRP shall include a general narrative of the key performance metrics required by the Commission and also identified in Section 6B(h)(iv) of Act 83, its performance with regards to such metrics and a comparison of its results with those achieved by similarly sized and comparable utilities. Furthermore, as described in Section 2.03(J)(1)(a)(v), PREPA's Action Plan shall include a description of the anticipated impact of each resource action on any applicable performance metrics.

After the determination by the Commission on the first IRP, the Commission opened a docket to establish performance inducement mechanisms (PIMs) that will apply to PREPA. The PIMs shall include performance metrics, performance targets and specific performance inducements, in order to monitor and guide key areas related to PREPA's performance. The Commission will issue a Resolution and Order after the conclusion of the proceeding and will review periodically the performance metrics to determine whether any updates, modifications or refinements are warranted.

Agreed upon by the Puerto Rico Energy Commission, in San Juan, Puerto Rico, on this 20th day of April, 2018.

Ángel R. Rivera de la Cruz
Associate Commissioner

José H. Román Morales
Associate Commissioner
Interim Chairman