

First Draft of Definitions of ELCC Classes for Inclusion in Revised ELCC RAA Language

May 19, 2021

ELCC Class Ratings will not be calculated for ELCC Classes if no resources in the class are expected to offer or provide Capacity in the applicable Delivery Year. ELCC Class Ratings for an ELCC Class will be calculated when one of the following criteria are met:

1. An Existing Generation Capacity Resource is in such class, or
2. A Planned Generation Capacity Resource has submitted timely and valid data through the ELCC data submission process and is in such class, or
3. The PJM resource mix forecast contains a resource in such class.

A Limited Duration Resource or Combination Resource (other than Hydropower with Non-Pumped Storage) cannot change its election to be in a given duration class more often than once every five Delivery Years, provided that PJM may approve a change of class on the basis of good cause shown. Providers of mixed-technology facilities that are eligible to participate as either a single Combination Resource or as multiple standalone resources may change the modeling approach once per five Delivery Years.

<Redline of RAA definition of "ELCC Class" from prior ELCC proposal>: "ELCC Class" shall mean a defined group of ELCC Resources that share a common set of operational characteristics and for which effective load carrying capability analysis, as set forth in RAA, Schedule 9.1, will establish a unique ELCC Class UCAP and corresponding ELCC Class Rating(s). ELCC Classes shall be defined in the [PJM Manuals RAA](#). ~~ELCC Classes shall be defined such that the members of each ELCC Class are reasonably homogeneous in character and with respect to impact on system resource adequacy. ELCC Classes shall be defined for Limited Duration Resources of no less than four hours duration, and shall include 4-hour, 6-hour, 8-hour, and 10-hour duration characteristics, with matching duration classes for Combination Resources composed in part of one or more such ELCC Classes. Members of an ELCC Class shall share a common method of calculating the ELCC Resource Performance Adjustment, provided that the individual ELCC Resource Performance Adjustment values will generally differ among ELCC Resources.>~~

<RAA definition of "ELCC Resource" from prior ELCC proposal for reference: "ELCC Resource" shall mean a Generation Capacity Resource that is a Variable Resource, a Limited Duration Resource, or a Combination Resource.">

"Tracking Solar Class" shall mean an ELCC Class consisting of Variable Resources that produce electrical energy with solar panels that are primarily mounted on trackers that align the panels with incoming sunlight over the course of the day.

"Fixed-Tilt Solar Class" shall mean an ELCC Class consisting of Variable Resources that produce electrical energy with solar panels that are primarily mounted in a fixed orientation.

"Onshore Wind Class" shall mean an ELCC Class consisting of Variable Resources that produce electrical energy using wind turbines and that are not in the Offshore Wind Class.

"Offshore Wind Class" shall mean an ELCC Class consisting of Variable Resources that produce electrical energy with offshore wind turbines located in the ocean.

“Landfill Gas Class” shall mean an ELCC Class consisting of Variable Resources fueled by landfill gas units that, because of fuel availability patterns, cannot run consistently at ICAP levels for 24 or more hours.

“Intermittent Hydropower Class” shall mean an ELCC Class consisting of Variable Resources that are run-of-river hydropower generators that must generally pass incoming water and therefore cannot appreciably store water to later increase the output of the facility. Resources in the Intermittent Hydropower Class are not Hydropower with Non-Pumped Storage resources.

“Hydropower with Non-Pumped Storage Class” shall mean an ELCC Class consisting of Combination Resources that are Hydropower With Non-Pumped Storage resources.

< RAA definition of “Hydropower With Non-Pumped Storage” from prior ELCC proposal for reference > “Hydropower With Non-Pumped Storage” shall mean a hydropower facility that can capture and store incoming stream flow, without use of pumps, in pondage or a reservoir, and the Generation Owner has the ability, within the constraints available in the applicable operating license, to exert material control over the quantity of stored water and output of the facility throughout an Operating Day.

“Energy Storage Resource Class” shall mean one of several ELCC Classes, each of which comprises Energy Storage Resources with the same specified characteristic duration. The Energy Storage Resource Classes are Limited Duration Resource classes. The characteristic duration of an Energy Storage Resource Class is the ratio of the modeled MWh energy storage capability of members of the class to the modeled MW power capability of members of the class. Energy Storage Resource Classes shall be defined for characteristic durations of 4, 6, 8, and 10 hours.

“Other Limited Duration Class” shall mean one of several ELCC Classes with a specified characteristic duration and which consist of Limited Duration Resources that are not Energy Storage Resources. The characteristic duration of an Other Limited Duration Resource Class is the maximum period of time represented in the ELCC model that the resources of the class can run at a stated capability. Other Limited Duration Classes shall be defined for characteristic durations of 4, 6, 8, and 10 hours.

< RAA definition of “Limited Duration Resource” from prior ELCC proposal for reference > “Limited Duration Resource” shall mean a Generation Capacity Resource that is not a Variable Resource, that is not a Combination Resource, and that is not capable of running continuously at Maximum Facility Output for 24 hours or longer. A Capacity Storage Resource is a Limited Duration Resource.

“Hybrid Class” shall mean one of potentially many ELCC Classes with a specified combination of two components, whereby one component is a class of Energy Storage Resource of a characteristic duration, and the other component is a class of Variable Resource or Unlimited Resource. To the extent that the capability to charge from the grid could feasibly impact ELCC Class Rating values, separate Hybrid Classes for “open-loop” and “closed-loop” resources shall be defined, whereby an “open-loop hybrid” is physically and contractually capable of charging from the grid, while a “closed-loop hybrid” is not. Hybrid Classes shall be defined for characteristic durations of 4, 6, 8, and 10 hours. A resource that is a member of a Hybrid Class has a single Point Of Interconnection, unless the resource is controlled in an integrated fashion, is at a single site, and is approved by PJM to be considered a single resource.

“Other Limited Duration Combination Class” shall mean one of potentially many ELCC Classes with a specified combination of two components, whereby one component is a class of Other Limited Duration Resource of a characteristic duration, and the other component is a class of Variable Resource or Unlimited Resource. Other

Limited Duration Combination Classes shall be defined for characteristic durations of 4, 6, 8, and 10 hours. A resource that is a member of an Other Limited Duration Combination Class has a single Point Of Interconnection, unless the resource is controlled in an integrated fashion, is at a single site, and is approved by PJM to be considered a single resource.

“Mixed Variable Resource Class” shall mean an ELCC Class consisting of Variable Resources each of which is composed of multiple components, whereby each component is itself a class of Variable Resource, and which cannot be included in any other Variable Resource class. A resource comprising a mix of fixed-tilt solar panels and tracking solar panels is not in this class. A resource that is a member of a Mixed Variable Resource Class has a single Point Of Interconnection, unless the resource is controlled in an integrated fashion, is at a single site, and is approved by PJM to be considered a single resource.

“Complex Hybrid Class” shall mean an ELCC Class composed of Combination Resources that combine three or more components, whereby one component is a class of Limited Duration Resource, and the other components are different Variable Resource classes, and such Combination Resources cannot be included in any other Combination Resource class. A resource that is a member of a Complex Hybrid Class has a single Point Of Interconnection, unless the resource is controlled in an integrated fashion, is at a single site, and is approved by PJM to be considered a single resource.