



e-FILING REPORT COVER SHEET

Send completed Cover Sheet and the Report in an email addressed to: PUC.FilingCenter@state.or.us

REPORT NAME: Confidential Wind Availability Report

COMPANY NAME: Pacific Power

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes

If yes, please submit only the cover letter electronically. Submit confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

If known, please select designation: RE (Electric) RG (Gas) RW (Water) RO (Other)

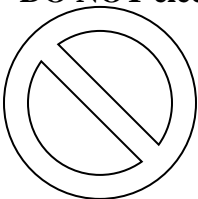
Report is required by: OAR
Statute
Order 10-414
Other

Is this report associated with a specific docket/case? No Yes

If yes, enter docket number: RE 57, UM 1355

List applicable Key Words for this report to facilitate electronic search:
Confidential Wind Availability Report

DO NOT electronically file with the PUC Filing Center:



- Annual Fee Statement form and payment remittance or
- OUS or RSPF Surcharge form or surcharge remittance or
- Any other Telecommunications Reporting or
- Any daily safety or safety incident reports or
- Accident reports required by ORS 654.715

Please file the above reports according to their individual instructions.

April 30, 2019

***VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY***

Public Utility Commission of Oregon
201 High Street SE, Suite 100
Salem, OR 97301-3398

Attn: Filing Center

Re: RE 57—Confidential Wind Availability Report

PacifiCorp d/b/a Pacific Power submits for filing its confidential wind availability report for calendar year 2018. This report is provided in accordance with the stipulation in docket UM 1355, adopted by Order No. 10-414, in which the parties agreed that the report would be provided concurrent with the annual results of operations report.

This report is confidential and provided under the general protective order in this proceeding (Order No. 08-549).

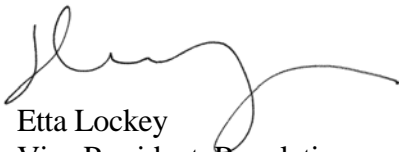
It is respectfully requested that any information requests regarding this matter be addressed to:

By E-mail (preferred): datarequest@pacificorp.com

By regular mail: Data Request Response Center
PacifiCorp
825 NE Multnomah, Suite 2000
Portland, OR 97232

For informal inquiries, please contact Cathie Allen at (503) 813-5934.

Sincerely,


Etta Lockey
Vice President, Regulation

Enclosures

cc: UM 1355 Service List

CERTIFICATE OF SERVICE

I certify that I served a true and correct copy of PacifiCorp's Confidential Wind Availability Report in Docket UM 1355 on the parties listed below via e-mail and/or overnight delivery in compliance with OAR 860-001-0180.

UM 1355

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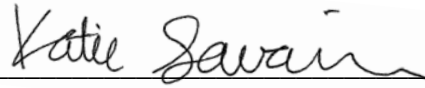
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Dated this 30th day of April, 2019.

A handwritten signature in black ink that reads "Katie Savarin". The signature is written in a cursive style and is positioned above a horizontal line.

Katie Savarin
Coordinator, Regulatory Operations

Background

As briefly summarized below, there are many variables associated with calculating the availability of wind-powered generation resources (Wind Projects). Historically, there has been no industry standard definition of “availability”. As a result, availability calculations can and have been turbine manufacturer specific and/or the result of operation and maintenance (O&M) service contract negotiations. The North American Electric Reliability Corporation (NERC) has implemented mandatory Generating Availability Data System (GADS) outage reporting beginning January 1, 2018, for wind facilities larger than 200 megawatts (MW) and January 1, 2019 for wind facilities larger than 100 MW, which may facilitate more standardized reporting of availability across the wind industry.

As further described below, GADS currently determines availability as the percentage of time a wind turbine generator (WTG) is available to generate energy, notwithstanding external factors that do not result in the generation of energy (i.e., lack of wind or unavailability of electrical facilities external to the wind facility). This is distinct from how GADS availability is determined for thermal generating units which use energy produced.

Time Allocations

There are currently 12 required categories of time allocation specified in GADS. These categories have multiple variables in the turbine manufacturer’s Supervisory Control and Data Acquisition (SCADA) system. These categories can be broadly grouped into the following:

1. Active Turbine Hours (ACTH): Hours where the turbine is in an active state. This includes the following categories.
 - (a) Contact Turbine Hours (CTH): Hours where the turbine is producing power. The turbine is considered available in this category.
 - (b) Forced Turbine Hours (FTH/oFTH): Hours where the turbine is off-line due to forced events like faults or component breakage. The turbine is considered unavailable in these categories.
 - (c) Maintenance (MTH/PTH/oMTH/oPTH): Hours where the turbine is off-line for maintenance or a planned event. The turbine is considered unavailable in these categories.
 - (d) Resource Unavailable Turbine Hours (RUTH): Hours where the turbine does not produce electricity due to reasons outside of the manufacturer’s operating specifications such as winds too low, winds too high, ambient temperature too low, ambient temperature too high, or during normal system startup or system checks. The turbine is considered available in this category.
2. Inactive Turbine Hours (IRTH/MBTH/RTH): Hours where the turbine is in an inactive state such as being mothballed or retired.

Categories that are considered outside of management control (OMC) are prefixed with an “o”. These categories include things like fires, floods, grid events, regulatory required shut-downs, and environmental issues such as shut-downs for bird and bats. Hours in these categories are included in the associated non-OMC category as well. For example, all oFTH hours are also included in the FTH category.

PacifiCorp calculates and reports availability in accordance with GADS appendix E section 3.B Equipment Performance Factors (without OMC hours). The equation for OMC Equipment Equivalent Availability Factor (EAF) is as follows:

$$Availability = \frac{[ACTH - (FTH + PTH + MTH) + (oFTH + oPTH + oMTH)]}{ACTH}$$

Wind Project availability calculations are calculated as the summation of the individual WTG time related events. WTG manufacturers historically have not programmed their SCADA systems to accommodate the number of time allocation variables that GADS, an owner, or O&M service provider may desire. SCADA systems are WTG specific.

Boundaries

As it relates to availability, Wind Projects are typically viewed as having the following three primary components that can affect availability: the WTG, the balance of plant (BOP) and the network transmission system (Grid). The WTG, BOP, and Grid are considered to connect to one another at points of electrical interface or “boundaries”.

The boundary between the WTG and the BOP is typically the connection of the power cables at the secondary side of the WTG pad mount transformer (ground mounted outside the WTG) or at the first connection of the power cables inside the WTG. The boundary between the BOP and the Grid is usually defined as the point of interconnection (POI) with the network transmission system pursuant to a Federal Energy Regulatory Commission (FERC) pro-forma large generator interconnection agreement (LGIA).

Each component can be viewed differently by the parties involved (WTG manufacturer, O&M service provider, and owner). GADS does not differentiate between the boundaries but Grid events are usually considered outside management control.

PacifiCorp Wind Projects

PacifiCorp fully owns 12 Wind Projects, and partially owns one Wind Project. Each Wind Project is monitored by its own individual SCADA with the exception of Seven Mile Hill 2 (which is combined with the SCADA system dedicated to Seven Mile Hill), McFadden Ridge 1 (which is combined with the SCADA system dedicated to High Plains), and Glenrock 3 (which is captured in the SCADA systems dedicated to the Glenrock and Rolling Hills projects). GADS requires availability to be calculated at the common point of interconnect (POI), but PacifiCorp uses sub-grouping to calculate at the project level.