



e-FILING REPORT COVER SHEET

COMPANY NAME: Pacific Power

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION?  No  Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type:  RE (Electric)  RG (Gas)  RW (Water)  RT (Telecommunications)  
 RO (Other, for example, industry safety information)

Did you previously file a similar report?  No  Yes, report docket number: RE 57

Report is required by:  OAR  
 Statute  
 Order 10-414

Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)

Other  
(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case?  No  Yes, docket number: UM 1355

List Key Words for this report. We use these to improve search results.

Confidential Wind Availability Report

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

Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.

April 30, 2021

***VIA ELECTRONIC FILING***

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

**Re: RE 57—Confidential Wind Availability Report**

PacifiCorp d/b/a Pacific Power submits for filing its confidential wind availability report for calendar year 2020. 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 No. 08-549 in this proceeding.

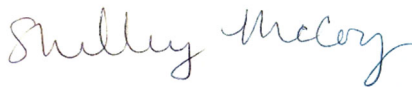
It is respectfully requested that any information requests regarding this matter be addressed to:

By email (preferred): [datarequest@pacificorp.com](mailto:datarequest@pacificorp.com)

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

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

Sincerely,



Shelley McCoy  
Director, Regulation

Enclosures

Cc: Docket No. 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.

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Dated this 30<sup>th</sup> day of April, 2020.



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Kaley McNay  
Senior 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 calculation methods developed in support of operation and maintenance (O&M) service contract requirements. The North American Electric Reliability Corporation (NERC) 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 prevent 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 events like fires, floods, grid events, regulatory required shut-downs, and environmental curtailments such as shut-downs to mitigate impacts on birds 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 the O&M service provider may desire. SCADA systems are specific to the make and model of WTG.

### **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 site facilities composed of 18 Wind Projects. Each site facility is monitored by its own SCADA system. GADS requires availability to be calculated at the

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common point of interconnect (POI), but PacifiCorp uses WTG sub-grouping by Wind Project to calculate availability at the Wind Project level.