

Valuation of Underlying Leased Land on a Wind Farm



Preface

The Arizona Department of Revenue (Department) administers the property tax system in cooperation with the 15 county assessors, among others. One of the administrative duties of the Department is to prepare and maintain publications reflecting standard appraisal methods and techniques that are used in the identification, classification, valuation, and assessment of property for ad valorem purposes. The Department regularly updates these publications, consistent with the following three levels of updates, depending on the perceived need:

Review: Publication conforms to standard style and formatting. Legislative and other citations verified. No changes to content, methodology, policy, or practice.

Revision: Includes applicable Review processes. Publication is newly edited. Nonsubstantive legislative changes incorporated. Addition or deletion of information that does not alter valuation methodology.

Rewrite: Includes applicable Review and Revision processes. Major substantive changes made to any combination of content, valuation methodology, policy, or practice.

This publication is a Revision. It supersedes all previous publications by the Department regarding the valuation of underlying leased land on a wind farm and remains effective until replaced. Additional information may be issued as an addendum to this publication or as a separate publication. Due to flexibility provided for in statute, deadlines and procedures may vary by county. The Department recommends contacting the county assessor of the county in which the property is located for detailed information regarding the deadlines and procedures in their jurisdiction. The information in this publication is based upon laws and rules in effect at the time of publication. Should any content in this publication conflict with current laws or rules, the latter shall be controlling.

Authority

Authority to produce this publication is found in Arizona Revised Statutes (A.R.S.) [42-11054\(A\) \(1\) and \(2\)](#). Regarding the weight of authority of this publication, see A.R.S. [42-13051\(B\)\(2\)](#).

Practical Examples

All practical examples herein are representative of how the Department would apply a given set of data while adhering to standard appraisal methods and techniques and to guidelines of the industry and of Arizona. Practical examples may demonstrate the current best practices used to make a necessary determination. Some practical examples may demonstrate the application of a process mandated by statute. See A.R.S. [42-11001\(6\)](#). Other practical examples may demonstrate methods that are adaptable to the particular situations of the various counties. Specific calculations used in the practical examples found herein are for demonstration purposes only.

Publication Formatting and Style

Publications produced by the Department Property Tax Unit generally follow the rules of citation, format, grammar, punctuation, and related matters found in the following three guides: *Style Manual: An Official Guide to the Form and Style of Federal Government Publications*,¹ *The Chicago Manual of Style*,² and *The Bluebook: A Uniform System of Citation*.³

¹ United States Government Publishing Office. [Style Manual: An Official Guide to the Form and Style of Federal Government Publications](#), 31st ed. (Washington, DC: U.S. Government Publishing Office, 2016).

² The University of Chicago. [The Chicago Manual of Style](#), 17th ed. (Chicago: University of Chicago Press, 2017).

³ Editors, Columbia Law Review, et al., comps. [The Bluebook: A Uniform System of Citation](#), 21st ed. (Cambridge: Harvard Law Review Association, 2020).

All inquiries, comments, and suggestions concerning the material in this publication may be submitted to the following:

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This publication can be accessed on the Department website at:

https://azdor.gov/sites/default/files/2023-03/PROPERTY_LeasedWindFarmLand.pdf.

Introduction

The Department's Centrally Valued Property Unit is responsible for valuing electric generation facilities, including commercial renewable energy generation facilities. A.R.S. [42-14151 \(A\) \(4\) to \(5\) and \(B\)](#). Renewable energy generation facilities include those that produce energy or fuel derived from solar, wind, or other nonpetroleum renewable sources. A.R.S. [42-14155\(D\)\(5\)](#). The type of renewable energy generation addressed in this publication is wind energy generation. Wind energy generation operations are often referred to as "wind farms."

This publication is meant to serve as a guide for assessor personnel in the valuation of underlying leased land on a wind farm for ad valorem purposes. This publication does **not** address the valuation of renewable energy equipment on a wind farm. See A.R.S. [42-14155](#). The guidelines in this publication are meant to be used to establish full cash values for these properties as of January 1 of the valuation year. A.R.S. [42-14153 \(A\) and \(C\)](#). The valuation year is "the calendar year preceding the year in which the taxes are levied." A.R.S. [42-11001\(20\)\(a\)](#). Thus, for example, the full cash values that are determined for these properties as of the valuation date of January 1, 2022, will serve as the basis for the property tax billings for tax year 2023.

Underlying Land

Owned Land — Valued by the Department

Typically, when the land associated with an electric generation facility is owned by the operator of the facility, the cost of the land is included in the value of the facility. But if not, the land may be valued by the Department. A.R.S. [42-14156\(A\)\(1\)](#).

Leased Land — Valued by the Assessor

When the land associated with an electric generation facility is leased by the operator of the facility, typically the land should be valued by the assessor, unless the value of the

land was already reported to the Department by the operator. In the latter case, the Department will in turn provide the reported land value to the assessor.

Within Arizona, there are several existing wind generation facilities that are located on leased land. In many cases, the leased land was previously used solely as rangeland (natural grazing land) and was classified as agricultural land. In some cases, the wind generation facilities are located on ranches that consist of both privately owned land and land leased from a government entity. As set forth above, the assessor should value only **leased turbine sites** and associated support facilities located **on privately owned land** and for which the value was **not already reported to the Department** by the operator. Note that land leased from a government entity is exempt from property taxation.

Improvements

Wind generation facilities identified by the Department consist of cleared areas upon which each wind turbine is located, along with an accompanying transformer and/or electrical cable connection box. Based on research conducted by the Department, the typical footprint of a wind turbine site is one-quarter acre (0.25 acre), which includes space for the turbine towers as well as support acreage for access roads, electric transmission lines, electrical substations, maintenance and operations facilities, and underground electric cables.

While these improvements are valued by the Department, if the assessor determines that a wind turbine site footprint is larger than a quarter acre, the assessor has discretion to modify the size of the footprint.

Valuation Methodology

The valuation methodology suggested herein is based on the cost to the wind energy generation facility to acquire the land upon which the facility and equipment are located.

In the case of leased land, the cost to the wind farm to acquire the land is the cost of leasing the land over the lease term.

Mixed Used Percentages and Assessment Ratios

The land area devoted to wind generation should be excluded from the area devoted to other uses. For example, if the site is also used for agricultural purposes, the land area devoted to wind generation should be subtracted from the total area of the parcel or parcels owned by the land owner. Because such a property would be used simultaneously for more than one purpose, it must be classified and assessed proportionally. For instructions on determining mixed-use assessment percentages for property subject to multiple uses, refer to [Determining Mixed-Use Percentages and Assessment Ratios](#).

Valuation Procedures

When it is necessary for the assessor to value the land area devoted to wind generation, the Department recommends using the methodology below for the wind generation portion of the property. In the example that follows, assume the balance of the land is valued as agricultural land.

1. Determine the annual amount of the lease. (If not known or given, use market rent.)
2. Determine the length of the lease. (If not known or given, use the useful life of the turbines, which has been set by the Department at 25 years.)

- Determine the discount rate, which is equivalent to three points, plus the long-term Treasury yield rate (30 years) as of January 1 of the year that the facility was first placed in service (2022 in this example).

Discount rate: **3.0000% + 2.0770% = 5.0770%**



- Apply the discount rate to find the present value of the lease payments over the life of the lease. There are several tools to find present value. The example below utilizes the present value (PV) function in an Excel spreadsheet.

Example: Find the present value of \$2,500 in annual lease payments with a 20 year lease, discounted at 5.0770% (3.0000% + 2.0770%).

The present value (PV) function on the Excel spreadsheet shown below yields a rounded value of **\$30,953**.

	A	B	C	D	E	F	G	H	I	J
1										
2			Discount Rate	5.0770%						
3			Life of Lease or Plant	20						
4			Lease Payment	2500						
5										
6			Find Net Present Value	\$30,953.12						