

# Renewable Energy Facility Repowering

The federal government has successfully advanced the development of a viable renewable energy generation market for the US through the use of multiple incentive structures including an investment tax credit (“ITC”), a production tax credit (“PTC”), and for a short period, the 1603 Treasury Grant program in lieu of the ITC. The largest beneficiaries of these incentives have been the solar and wind industries. These incentives are only created on the in-service date of a newly constructed facility; however, a wind project may achieve a second in-service PTC qualification through a “repowering.” This paper addresses the valuation analytics associated with the repowering of wind farms and application of the “80/20 Rule” (also referred to as the “80/20 Test” or “80/20 Analysis”) for qualifying as a new asset and, accordingly, qualifying for PTC incentives.

## Introduction

The Internal Revenue Service’s (“IRS”) “80/20 Rule” has been utilized to promote economic revitalization and continued growth of certain industry sectors since the late 1960s by affording tax incentives asset owners after the original commercial operation date. The construction of solar farms do not generally provide a platform for a repowering, as the replacement of solar panels typically requires new wiring, purlins, and other balance of system (“BOS”) materials to support the latest technology. Typically, solar farms are simply replaced. While we have been involved with the repowering of fuel cell facilities, the great majority of renewable energy project repowering analyses we execute are for wind farms.

Sponsors seeking improved economic performance for their wind farm investments typically pursue technological and capacity upgrades accompanied by new ITC and PTC for their reborn project. At least 80% of a wind facility (as defined below) must be replaced in order to meet the 80/20 Rule and be considered new assets eligible for additional tax credits.

## The 80/20 Test

To determine whether a wind farm may be considered “placed in-service” as new, the total Fair Market Value (“FMV”) of the Remaining Assets is compared to the total FMV of the New Assets for federal income tax purposes.

The “20” side of the Test considers the components of the original facility that will remain in place after the repowering (the “Remaining Assets”). The FMV of these Remaining Assets are measured as of a current date for the purposes of the 80/20 Rule.

The “80” side of the Test considers the cost of the new/replacement components of the Facility (the “New Assets”). All depreciable costs of the New Assets are considered for the purposes of the 80/20 Test.

## IRS Guidance

The IRS published guidance concerning wind project repowering is reflected in Revenue Ruling 94-3 and the more recently published Notice 2016-31 and Notice 2017-04.

These IRS guidance documents are relied upon when applying value measurements and the attendant valuation and calculations associated with the 80/20 Rule. As of this writing, there are no known challenges or other published IRS guidance that specifically address the repowering of electric generation facilities or the 80/20 Rule.

Revenue Ruling 94-31 defines “individual wind turbines and functioning components, together with their respective towers and supporting pads” as the “Facility”. IRS Notice 2016-31 amplifies Revenue Ruling 94-31, by stating, “[a] facility may qualify as originally placed in service even though it contains some used property, provided the FMV of the used property is not more than 20 percent of the facility’s total value (the cost of the new property plus the value of the used property).”

#### The Valuation of Remaining Assets

A typical wind farm consists of many Facilities with assets such as turbine generators and supporting components, towers, and foundations or supporting pads. Any Facility component may be replaced and considered when testing for the 80/20 Rule. Costs outside of each Facility, such as balance of plant assets, are not considered to be applicable to the 80/20 Rule.

Each Remaining Asset is a component of a Facility. In most instances, Facilities typically do not independently generate income (Income Approach) or transact separately (Market Approach), thus, the Cost Approach to valuing the Remaining Assets is the most appropriate appraisal methodology. Therefore, the Remaining Assets are valued on a component level, or a bottom-up approach, via the Cost Approach.

The Cost Approach considers the Cost of Replacement New, also known as “COR”, with deductions taken for (i) economic obsolescence, (ii) functional/technical obsolescence, and (iii) physical depreciation. The COR analysis is undertaken not only for the Remaining Assets but is inclusive of all other existing projects assets. With such an analysis, the COR of the Remaining Assets is correlated to market information at both the Remaining Asset level as well as at the existing project level.

Each form of diminution in value is considered differently in the Remaining Assets valuation:

- Physical depreciation is applied based on the concluded remaining economic useful life (“REUL”) of the Remaining Assets as they reside in the existing project. This is typically done by applying an age life factor which considers the salvage value and any other decommission costs.
- Economic obsolescence associated with the Remaining Assets is measured via a discounted cash flow valuation and COR minus physical depreciation. As previously mentioned, the Remaining Assets do not have discrete income streams and do not lend themselves to discrete discounted cash flow valuation. As such, the discounted cash flow valuation is performed at the existing projects basis and aggregate economic obsolescence is measured. The discounted cash flow measures the existing project value over the REUL of the existing project.
- Any potential functional obsolescence due to performance that may or may not be present is considered captured by the economic obsolescence measurement. The project-level economic obsolescence is allocated down to the Remaining Assets (and other project assets) to arrive at the indicated the FMV of the Remaining Assets.

### Applying the 80/20 Test

Once the value of the Remaining Assets is determined for each individual Facility, the concluded value of the Remaining Assets is compared to the provided depreciable costs of the New Assets to conclude whether the Facility is eligible to be considered originally placed in service under the 80/20 Rule. Hence, the 80/20 Rule can be mathematically applied as follows:

The FMV of Remaining Assets must be less than or equal to 20% of the sum of the FMV of the Remaining Assets plus the Cost of New Assets

or

The Cost of New Assets must be greater than or equal to 80% of the sum of the FMV of the Remaining Assets plus the Cost of New Assets.

One of the most common misconceptions of the 80/20 Rule is that the FMV of the Remaining Assets is the same their respective book (depreciated) value. This is not correct. A professional experienced in machinery & equipment valuation should be retained in order to determine the most supportive value for the 80/20 filing, especially if it is ever subsequently reviewed by the IRS.

It has been our experience that sponsors seeking a new ITC or PTC for their wind farm facilities typically want to have an 80/20 Test that leaves margin for "interpretation" by the IRS, with results for the 80/20 Analysis in the area of 85/15 or 90/10.

### Conclusion

Marshall & Stevens' execution of wind repowering project analyses is approached on a highly client specific and consultative basis. The repowering model is assumption-driven, and many scenarios may need to be examined to quantify various sensitivities to multiple potential outcomes. We must maintain a high degree of direct interaction with our client and their respective financial, tax, and legal teams so that the most supportable 80/20 Rule positions are taken and documented as the basis for our conclusions.

### Marshall & Stevens

Founded in 1932, Marshall & Stevens' is a full-service independent valuation firm with practices in the valuation of businesses, intangible assets, debt and equity instruments, equipment, and real estate. Since 2010, Marshall & Stevens has provided valuation opinions in excess of \$100 Billion to its Energy & Infrastructure clients.

For more information on repowering or other valuation topics, please visit our website or contact one of the parties listed below.

Ralph Consola  
Principal  
213.233.1511  
rconsola@marshall-stevens.com

John Geraghty  
Managing Director  
212.897.9482  
JGeraghty@marshall-stevens.com

Jim Nutter, ASA  
Managing Director  
312.223.8355  
jnutter@marshall-stevens.com