

Western Resource Adequacy Program

110 Cost of New Entry

Revision History

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110 Cost of New Entry

1. Introduction

The Cost of New Entry (CONE) is used in the Forward Showing (FS) Program of the Western Resource Adequacy Program (WRAP) to calculate Deficiency Charges. CONE represents the estimated annual costs of a hypothetical new peaking natural gas-fired generation facility in the Western Interconnection.

This Business Practice Manual (BPM) provides implementing details and practices relevant to the methodology used by Western Power Pool (WPP), as Program Administrator, to calculate CONE and to conduct the annual review of the CONE value.

1.1. Intended Audience

BPM 110 is intended for WRAP Participants and other interested individuals or entities. BPM 110 is particularly useful for those individuals responsible for understanding the calculation of FS Deficiency Charges and the inputs and methodology used to establish the CONE value used in those calculations.

1.2. What You Will Find in This Manual

This document includes sections describing the purpose of CONE within the WRAP, the methodology and inputs used to calculate CONE, and WPP's process for conducting the annual review of the CONE value.

Calculation and application of Deficiency Charges, including the application of CONE and the applicable Summer Season and Winter Season Annual CONE Factors, are addressed in BPM 107 Forward Showing Deficiency Charge.

1.3. Purpose

The purpose of this BPM is to provide implementing details and practices relevant to the calculation and annual review of CONE.

Nothing in this BPM changes in any way the exclusive authority of the independent Board of Directors, under Section 3.1 of the Tariff, to approve and direct WPP to file Tariff amendments and the independent Board's ultimate authority over all aspects of the WRAP.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 110 have the meaning set forth in the [Tariff](#) or in another BPM.



After-Tax Weighted Average Cost of Capital (ATWACC): The discount rate reflecting the assumed after-tax cost of debt and cost of equity, weighted according to the assumed debt and equity shares of the hypothetical facility's capital structure.

Construction Finance Cost: The financing cost associated with capital expenditures made during the assumed construction period of the hypothetical facility.

Fixed Operations and Maintenance Cost (FOM): The annual fixed cost of operating and maintaining the hypothetical facility that does not vary based on the amount of energy generated.

Installed Cost: The sum of the Overnight Cost of the hypothetical facility and the Construction Finance Cost, and representing the capitalized cost of the hypothetical facility at the time the facility enters service

Overnight Cost: The estimated fully installed capital cost of the hypothetical facility before construction financing costs are included.

2. Background

CONE is used in the Deficiency Charge calculation as an indication of the type of cost a deficient Participant avoids by not having sufficient capacity to serve its peak loads. It is not intended to reflect any Participant's actual avoided capacity costs or to establish any precedent as to the types of resources any Participant can or should obtain to meet its marginal capacity needs, nor that any type of resource is the expected marginal capacity resource in the WRAP Region or any Subregion.

In accordance with Section 17.2.5 of the Tariff, CONE is the estimated cost of new entry of a new peaking natural gas-fired generation facility. The CONE value is based on publicly available information relevant to the estimated annual capital and fixed operating costs of a hypothetical natural gas-fired peaking facility.

The CONE value does not consider anticipated net revenue from the sale of capacity, energy, or ancillary services from the hypothetical facility. The CONE value also does not consider variable operating costs necessary for generating energy.

The current CONE value is expressed in dollars per kilowatt-year (\$/kW-year) and is posted on the WPP website along with key supporting calculations and information that materially affect the estimate, as presented in BPM 110.

3. Inputs to the Calculation of CONE

The CONE calculation estimates the annual revenue requirement associated with the capital investment and fixed operating costs of a hypothetical new peaking natural gas-fired generation facility in the Western Interconnection.

WPP uses publicly available information relevant to the estimated costs and financing of a hypothetical new natural gas-fired peaking facility to establish the inputs to the CONE calculation.

Key inputs include, as applicable:

1. Overnight Cost;
2. Debt fraction, return to debt, and return to equity;
3. Federal and state income tax rates;
4. Depreciation schedule, including applicable bonus depreciation;
5. Construction period;
6. Book life;
7. Fixed Operations and Maintenance Costs; and
8. Other.

The methodology used to determine these components is described in Section 4.

3.1. Overnight Cost

Overnight Cost represents the fully installed capital cost of the hypothetical facility before financing costs associated with the construction period are included.

Overnight Cost may include costs associated with engineering, procurement, construction, contingency, development, interconnection, land, and other costs necessary to construct the hypothetical facility. These costs are reflected as a single \$/kW value used as the starting capital cost for the CONE calculation.

3.2. Debt and Tax Depreciation

The CONE methodology assumes that development of the hypothetical facility is financed through a combination of debt and equity.

The assumed debt fraction, return to debt, return to equity, and applicable income tax rates are used to determine the After-Tax Weighted Average Cost of Capital (ATWACC). The ATWACC represents the blended annual return required on the capital invested in the hypothetical facility and is used as the discount rate in the CONE calculation.

The resulting present value of depreciation tax savings is applied to the Installed Cost to determine the Cost of Capital that must be recovered through revenue.

3.3. Construction Period

The construction period is the amount of time, expressed in years, that it takes to build the hypothetical facility being modeled prior to achieving commercial operation.

3.4. Book Life

The hypothetical facility's book life is the period, expressed in years, over which the capital cost of the facility is assumed to be depreciated for accounting purposes. Book life represents the assumed accounting life of the facility and does not necessarily reflect the facility's actual operating life.

3.5. Fixed Operation and Maintenance Costs

The fixed operating costs are the estimated annual costs of operating and maintaining the hypothetical natural gas-fired peaking facility that are incurred regardless of the amount of energy generated.

FOM may include costs such as insurance, routine maintenance, staffing, and other costs that are incurred on a fixed basis and do not vary based on the amount of energy generated by the facility.

Consistent with Section 17.2.5 of the Tariff, variable operating costs necessary for generating energy are not included in FOM nor are they otherwise included in the CONE value.

3.6. Other Costs

The CONE calculation may incorporate additional inputs or assumptions in the future, as appropriate, based on publicly available information relevant to the estimated annual capital and fixed operating costs of the hypothetical facility.

4. Methodology

CONE is calculated as follows:

$$CONE = \text{Levelized Cost of Capital} + FOM$$

4.1. Construction Financing

The CONE calculation recognizes that development of a new generating facility requires capital expenditures during a construction period before the facility begins operation.

Overnight Cost is allocated across the assumed construction period using a monthly capital expenditure drawdown schedule. The annual ATWACC is converted to an

equivalent monthly rate and applied to the cumulative capital expenditures during construction.

The resulting financing charges are summed over the construction period to determine Construction Finance Cost.

Installed Cost is then calculated as follows:

$$\text{Installed Cost} = \text{Overnight Cost} + \text{Construction Finance Cost}$$

Installed Cost represents the capitalized cost of the hypothetical facility at the time the facility enters service.

4.2. Depreciation Schedule

The CONE calculation recognizes the tax benefits associated with depreciation of the hypothetical facility.

Using the applicable depreciation schedule and any assumed bonus depreciation, the methodology develops an annual depreciation stream. The applicable combined income tax rate is applied to that depreciation stream, and the resulting tax savings are discounted to present value using ATWACC.

The resulting present value of depreciation tax savings is applied to Installed Cost to determine the net capital cost that must be recovered through annual revenues.

4.3. Levelized Cost of Capital

The net capital cost, after accounting for the present value of depreciation tax benefits, is levelized over the assumed book life of the hypothetical facility using ATWACC.

The resulting annual capital payment is adjusted to account for applicable income taxes on the revenues required to recover the capital investment.

The result is the Levelized Cost of Capital, expressed in \$/kW-year.

4.4. Calculation of CONE

The Levelized Cost of Capital and FOM are added together to determine the annual CONE value:

$$\begin{aligned} \text{CONE } (\$/kW - \text{year}) \\ = \text{Levelized Cost of Capital} (\$/kW - \text{year}) + \text{FOM } (\$/kW - \text{year}) \end{aligned}$$

The resulting CONE value represents the estimated annual capital and fixed operating cost of the hypothetical new peaking natural gas-fired generation facility.

The CONE calculation does not offset these costs by anticipated revenues that the hypothetical facility may receive from sales of capacity, energy, or ancillary services. The calculation may incorporate additional inputs or assumptions in the future, as deemed appropriate by WPP.

5. Annual Review of CONE

WPP will review the CONE value annually for a possible update. An annual review does not require WPP to change the CONE value.

As part of the annual review, WPP will review the current CONE methodology, key assumptions, and available public information relevant to the inputs used in the calculation. The review may include consideration of updated information regarding any of the input values or methodological steps.

If the review determines that an updated CONE value is more than a 10% increase or decrease from the previously approved value, the new CONE value will be proposed through the WRAP governance process. If the review determines that an updated CONE value is less than or equal to a 10% increase or decrease from the previously approved value, the Program Administrator has discretion to determine whether to propose and update to the CONE value or retain the current value may. Any change to the CONE value shall be proposed through the WRAP governance process.

WPP may retain the existing CONE value following the annual review if the review does not identify a need for an update. WPP may also initiate a review or proposed change to CONE more frequently than annually if circumstances warrant.

6. Changes to CONE

If WPP determines that a change to the CONE value should be proposed, WPP will develop the proposed CONE value using the methodology described in this BPM and identify the key assumptions, inputs, supporting calculations, and publicly available information that materially affect the proposed value.

Any proposed change to CONE is subject to review through the stakeholder process applicable to WRAP program rule changes.

Following completion of the applicable stakeholder review and approval process, WPP will post the updated CONE value on its website along with key supporting calculations and information that materially affect the estimate, as presented in BPM 110.

The updated CONE value will be used for WRAP purposes beginning on the applicable effective date established through the approval process.

7. Current CONE Value

The current CONE value is \$131.87/kW-year, calculated in accordance with the methodology described in BPM 110.

A report that describes the values of the input variables referenced in BPM 110 and provides more details on the calculation of this CONE value is posted on the Western Power Pool website.