

Going Forward Costs Input Template Instructions

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Table of Contents

1. Purpose	3
2. Introduction	3
3. Column Items Guide	6
Section (A). Input	6
Section (B). Comment	6
Section (C). Documentation Reference.....	6
Section (D). Historical.....	7
Section (E). Projected.....	7
Section (F). Periodicity	7
Section (G). Percent Avoidable	7
4. GFC Line Items Guide.....	8
General Unit Information.....	8
Energy Model Inputs/Physical Parameters.....	8
Revenues.....	9
Variable Costs.....	9
Fixed Costs	10
Capital Expense.....	11

1. Purpose

The SPP Market Monitoring Unit (MMU) reviews anticipated generator retirements on both an economic and technical justification basis. The extent and depth of the MMU analysis will depend on the estimated potential impact of the retiring generator on the overall SPP system and on local conditions.

The MMU's economic justification analysis aims to determine whether running the (retiring) unit would be uneconomic. This assessment will primarily be based on a (net) Going Forward Cost (GFC) analysis for that unit and will be used to evaluate economic justifications of anticipated generator retirements. The MMU will use GFC data in making assessments for physical withholding pursuant to SPP Tariff, Attachment AG.¹ When making assessments for physical withholding, if necessary, the MMU may contact the asset owner(s) in regard to reason(s) for the retirement decision and may request the Market Participant to submit the completed GFC template² and supporting documentation. The MMU will then evaluate and confirm the GFC data submitted.

The GFC data template aims to collect data for avoidable costs and avoidable capital expenses. GFC will be a major decision-making criterion that determines if net market revenues for the generator cover GFC since a generator should operate as long as net market revenues cover its GFC (i.e., being economic to be in service).³ The MMU will verify the inputs that go into GFC calculation of asset owner(s). The MMU may also review the company annual reports as well as any other publically available information that may be relevant to its analysis.

This document provides instructions on how to complete the GFC template.

2. Introduction

GFC refers to those costs that are avoided if a generator is retired or no longer in operation (mothballed). Net GFC is the GFC, net of expected *net* Energy and Ancillary Services revenues. GFC include costs such as mandatory capital expenditures due to any environmental, safety or reliability requirements, and fixed operating and maintenance costs or property taxes, if applicable. Net Energy and Ancillary Services revenues are the market revenues, net of operating costs. Avoidable Costs are costs, net of anticipated Energy and Ancillary Services revenues, of supplying capacity and Energy that would be avoided were a supplier to either (1) cease supplying capacity and Energy for a period of one year or more, while retaining the ability to re-enter such markets, or (2) retire permanently from supplying capacity and Energy.

¹ SPP OATT, Attachment AG, Section 4.6.4.

² SPP Market Monitoring Unit's Going Forward Costs template and the Going Forward Costs Input Template Instructions (this document, available at <https://www.spp.org/spp-documents-filings/?id=18510>) are developed based on the NYISO documents "GFC Input Template" (accessed on 5/21/2019 at <https://www.nyiso.com/documents/20142/3026303/GFC%20Input%20Template.xls/b7023b91-32f8-c4da-954e-6b9bbb192ca7>) and "Installed Capacity Market Going Forward Costs Input Template Instructions Data Submission Template for Going Forward Costs and Physical Withholding Review, March 2014," (accessed on 5/21/2019 at <https://www.nyiso.com/documents/20142/3026303/GFC%20Input%20Template%20Instructions.pdf/f78ff765-3441-1ce9-1eb1-b4121d31b023>), respectively. The SPP Market Monitoring Unit assumes all responsibilities for any errors and omissions that may occur from using the above-mentioned NYISO documents.

³ Note that in some cases the unit may not be economic to run even without the fixed costs such that its operating revenues may not cover its operating costs.

To determine the Going Forward Costs of a unit, the SPP Market Monitoring Unit calculates the Net Present Value of avoidable costs using a nominal pre-tax Weighted Average Cost of Capital, i .

$$NPV = \sum_{t=1}^N \frac{Costs}{(1+i)^t}$$

This Net Present Value is multiplied by avoidable share, $\% Avoidable$, to find the Amount Avoidable. If there are multiple units at a site, the $\% Avoidable$ is the avoidable share of the costs attributable to that specific unit.

For the purposes of longer term or permanent removals, Amount Avoidable is annualized using an annuity formula and expressed in terms of cost per year capacity.

$$Cost\ per\ year = NPV * \% Avoidable * \frac{i(1+i)^n}{(1+i)^n - 1}$$

For the purposes of the annuity formula, n is calculated as the minimum of the periodicity of expense or equipment replacement or a maximum of 6 years or 40 less the age of the plant in years.

$$n = \text{Min} \{ \text{Periodicity of expense or replacement}, \text{Max} [6, 40 - \text{Age of Plant}] \}$$

Net GFCs are calculated as the Cost per year less net Energy and Ancillary services revenues. Net revenues are calculated by the SPP Market Monitoring Unit. The SPP Market Monitoring Unit's projections are informed by information including the unit's historic operating results and by the Market Participant's forward projections. The SPP Market Monitoring Unit calculates historic net revenues. The Market Participant is to provide six years of historic revenue data, its most recent two years of historic variable costs and fixed costs data, and six years of forward projections (or if six years of projects were not prepared, then the next longest period of available projections). The requested data pertain to revenues from Energy and Ancillary services, and variable operating costs. Data for variable and fixed operating costs must be submitted consistent with the guidelines in the Appendix G of the SPP Market Protocols,⁴ as used in the generator's cost-based mitigated offer calculation.

By design, the template collects only avoidable costs. Therefore any materials, labor and other costs that are compensated for in the Energy and Ancillary services markets are deemed not avoidable.

⁴ See Market Protocols for SPP Integrated Marketplace Appendix G - Mitigated Offer Development Guidelines.

Furthermore, the template is designed to help the Market Participant isolate the costs that are specific to a particular Unit (by Resource Asset Name) and allocate an appropriate percentage of the shared avoidable costs to the Unit under evaluation.

Required fields are highlighted in an orange dotted formatting, which as information is entered will change formatting. Please input only numbers and not formulas. You will have an opportunity to attach methodology and assumption descriptions for any calculations in the Comment and Documentation fields. Please do not modify the template spreadsheet, other than to add lines to record additional capital costs or expenses. Please do not add any line items other than in Capital Expenses. You will have an opportunity to list expenses unspecified in the template under the Line Item “Other” and to attach documentation or comments corresponding to this line item.

All costs and revenues are to be provided in nominal dollars (i.e., not adjusted for inflation) for their respective years.

DRAFT

3. Column Items Guide

Section (A). Input

This field requires an entry of data or information corresponding to the indexed line items. For more guidance on the individual inputs refer to indexed line item instructions in section 4 of this document.

Section (B). Comment

This field is an opportunity to clarify or comment on information inserted in the Input field. Please include a description of any assumptions. Fields requiring substantial assumption or methodology descriptions should be documented with supplemental attachments in Section C of the template.

Section (C). Documentation Reference

To fill out the Documentation Reference field, please name and list attachments on the “Document Organizer” worksheet of the Input Template which are to be submitted with the Template File. Figure 1 illustrates this worksheet.

Figure 1



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Directions: Please utilize this documentation organizer to list attachments and descriptions. Use corresponding Attachment number to refer to documents in the "GFC Inputs" tab.

Confidential Communication — Market Participant Specific Information — Do not Release

Attachment Number	Document Name	Document Description
Attachment X	e.g., payroll 2018	e.g., Detailed annual payroll data by position
Attachment 1		
Attachment 2		
Attachment 3		
Attachment 4		
Attachment 5		
Attachment 6		
Attachment 7		
Attachment 8		
Attachment 9		
Attachment 10		

As you fill out the Template File, please reference the Attachment number (e.g., Attachment 6) and the exact location of the required information (e.g., page 5, Cell C9, Tab “X”, Table “Y”). You may reference more than one attachment for each line item; please be sure to indicate which date or field each attachment is documenting. When possible, compile documentation spreadsheets for easier reference (e.g., payroll data compiled into one workbook with historical data sheets or columns for each year).

Section (D). Historical

Section (D) requires historical data for up to six years before the analysis period. If six years of data have not accumulated by the time of the anticipated retirement has been submitted to the MMU, please provide data for the maximum available years. Enter the total annual values for each required field / line item. If projected values for any line item differ significantly from historical data, provide historical data for additional years, as well as documentation and substantiation for the change. Capital Expense line items each require six years of historical data. Provide data in nominal dollars.

Section (E). Projected

Section (E) requires projected values for each line item. Enter the total annual values for each required line item. All cost line items require six years of projected data. Provide data in nominal dollars. If costs are escalated using escalation or inflation factors, specify the assumptions in the Comment section. Capital Expense line items must provide reasonably anticipated costs for six years beyond the date of analysis and must be based on verifiable historical data and condition assessments.

Section (F). Periodicity

The periodicity of the expense is required to calculate an annualized (annuity) value of the expense. For each expense incurred (historical data) or projected to be incurred, please enter the frequency and/or life of the expense in years. For example, periodicity of equipment would be life of the equipment expressed in years. Periodicity of an upgrade or an outage is the frequency, in years, of the event. Annual expenses have a periodicity of 1. Expenses incurred once in the lifetime of the unit should list the period over which the expense is amortized. The SPP Market Monitoring Unit will calculate the periodicity for each cost based on this data and age of the plant, as described in the Introduction section of this document.

Section (G). Percent Avoidable

Avoidable Costs are those costs of supplying capacity and Energy which would be avoided if a supplier was to either (1) cease supplying capacity and Energy for a period of one year or more, while retaining the ability to re-enter such markets, or (2) retire permanently from supplying capacity and Energy.

Avoidable cost share can constitute either the unit's share of costs common to the plant, in the case of multi-unit plants, or other share, in cases where only a portion of a unit-specific cost is avoidable.

Please indicate the percentage that would be avoided under either scenario. If the avoidable amount is based on a cost allocation methodology for a unit, indicate and document the methodology for allocating expenses among units as avoidable (*e.g.*, cost allocation based on MW or MWh), and demonstrate that percentage avoidable of all generators sums to 100 percent.

4. GFC Line Items Guide

Complete each line item specified in the template and defined below. Do not add lines. If a specific line item is not designated in the template, include the cost in the Line Item “Other” and provide Comments and appropriate Documentation.

General Unit Information

1. *Market Participant:*
Name of the Market Participant as it appears in the Commercial Model
2. *Credit Holder:*
Name of the Credit Holder as it appears in the Commercial Model
3. *Resource Asset Owner:*
Name of the Asset Owner as it appears in the Commercial Model
4. *Resource Asset Name:*
Name of the Resource Asset with Settlement Location Name
5. *Installation or Commercial Operation Year (MM/DD/YYYY):*
Date of installation or first year, whichever is later
6. *Last Major Overhaul Year (as available):*
Work completed that increased or decreased capacity
7. *Maximum Capability (MW):*
Registered Nameplate MW
8. *Date of the Analysis (MM/DD/YYYY)*
Date of the data submission. Final and complete data submission marks the beginning of the period for which analysis is conducted.

Energy Model Inputs/Physical Parameters

All ambient condition dependent line items in this section should utilize International Standards Organization conditions⁵ unless otherwise noted.

9. *Net Plant Heat Rate (Btu/kWh) (HHV):*
Operating Net Heat Rate.
10. *Fuel Required to Start:*
Fuel in MMBtu required, on average, to reach the plant’s minimum generation (Economic Minimum) level. For a Combined Cycle Unit it is the fuel required, on average, to be in compliance with air permits (e.g., Mode 6 on a GE unit). For a steam unit, it is the fuel required, on average, to reach Economic Minimum and be in compliance with air permits.
11. *Economic Minimum:*
Minimum economic operating limit, in MW.
12. *Primary Fuel:*
Primary fuel used in operation. (e.g., if gas is 51% and oil 49%, then gas is your primary fuel.)
13. *Secondary Fuel, if applicable:*
Secondary fuel used in operation. (e.g., if gas is 51% and oil 49%, then oil is your secondary fuel.)
14. *NOx Rate (pounds/MMBtu):*
NOx emissions rate in pounds/MMBtu. If the unit has duct firing, provide the NOx emissions rate in the comment section of the line item.

⁵ 59° F, 60 % relative Humidity.

15. *CO2 Emissions Rate (pounds/MMBtu):*
CO2 emissions rate in pounds/MMBtu. If the unit has duct firing, provide the CO2 emissions rate in the comment section of the line item.
16. *SOx emissions Rate (pounds/MMBtu):*
SOx emissions rate in pounds/MMBtu. If the unit has duct firing, provide the SOx emissions rate in the comment section of the line item.
17. *Non-fuel Variable O&M (\$/MWh):*
Annually recurring costs that are directly proportional to generating output. Variable O&M costs, along with fuel costs, are used to develop net Energy and Ancillary Services revenues. Base the indicated variable O&M costs on pricing information from any long-term service agreements for major maintenance parts and labor, along with current local pricing and material balances for consumable items such as ammonia, water, sewage, and water treatment chemicals. Also, include any other variable O&M costs that are directly proportional to plant generating output. These should include costs related to unscheduled maintenance, the SCR catalyst, the CO oxidation catalyst, other chemicals and consumables. These items are to be expressed in \$/MWh, regardless of whether the maintenance component is hours-based or starts-based. The values should be consistent with the methodology in Market Protocols f or SPP Integrated Marketplace Appendix G - Mitigated Offer Development Guidelines.
18. *WACC or Weighted Average Cost of Capital:*
Parent organization WACC. In the comment section provide a project-specific WACC, if available. In the comments section, identify the components of the WACC: the debt-to-equity ratio, debt cost, return on equity, and applicable federal, state, and city income tax rates. Provide documentation to support each of the inputs.
19. *Age of the Plant:*
Value, in years, calculated as the difference between *Date of the Analysis* (line item 8) and *Installation or Commercial Operation Year* (line item 5).

Revenues

Please provide historical revenues and projected revenues, if available, for the following:

20. *Energy:*
21. *Ancillary Services:*
22. *Other:*
Sum other revenues not included in line items above and include comments and documentation.

Variable Costs

23. *Fuel*
24. *NOx*
25. *SOx*
26. *CO2*
27. *Startup/Shutdown Gas/ Station Light and Power*
28. *Balance of Plant Maintenance, Materials, Services and Consumables*
29. *Long Term Service Agreement (LTSA) Variable Part*
30. *Other:*

Sum other variable costs not included in line items above and include comments and documentation for each cost not otherwise reflected in the template.

Fixed Costs

31. *Plant Labor:*
Routine O&M labor expense includes full-time equivalent staffing costs for plant management, operation, and maintenance, including salaries and benefits. If projecting labor expense based on escalating historic data, please clearly list any assumptions. Substantiate labor expense with appropriate attachments.
32. *Plant Labor-Overtime:*
Overtime labor expenses.
33. *Contract Labor/Services:*
Fixed annual costs of contract services.
34. *Labor Benefits:*
Labor benefits expenses not included in line 31 above.
35. *Maintenance*
36. *Long Term Service Agreement (LTSA) Fixed Part*
37. *Balance of Plant*
38. *Environmental/ Security/ Safety*
39. *Plant Utilities and Aux Load*
40. *Administrative Expense:*
Administrative and general costs include on-site and off-site and home office costs not covered above under routine labor or contract services.
41. *Property Tax Expense:*
Property valuation, assessment ratios and tax rates applicable to the specific project and site. Indicate the full value, unadjusted for depreciation or any eligible property tax exemptions. State any payments in lieu of taxes (PILOT) and the term thereof, if applicable.
42. *Employee Expenses*
43. *Travel*
44. *Office Expense*
45. *Training*
46. *Information Technology*
47. *Insurance:*
All applicable annual premiums during the plant's operating life, unadjusted for depreciation. Include any actual or anticipated lump-sum insurance proceeds in the *Other* field (line 51) and indicate whether the proceeds are contingent upon repair.
48. *Lease payments*
49. *Legal*
50. *Procurement*
51. *Other:*
Sum other fixed costs not included in line items above and include comments and documentation.

Capital Expense

List six years of historical and six years of projected capital expenses, using one line item per expense. Include repair costs in the submission. Lines may be added to accommodate all capital expenses. Please fill in zero (0) for cells that do not contain data.

Include in the Comment Section and document whether the capital expense is deferrable, and the time for which it could be deferred, consistent with good utility practice.

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