Submitting Data for Buyer Side Mitigation:

BSM Input Template Instructions (ESR)

This document details how a Market Party would go about filing in the Excel template. The Excel document is broken down into major sections. The major sections will have generic instructions about what goes into that section. In each section their will be line by line instructions to aid in filling out the file. The line numbers in each section correspond to the Excel spreadsheet in Column A.

The sections of the Excel template are:

- **Section I.** General Unit Information
- **Section II.** Capital Costs
- **Section III.** Operating Costs
- **Section IV.** Financial Inputs
- **Section V.** Plant Performance Curve

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 below.

Section (B). Comment

The comment field is an opportunity to clarify or comment on information inserted in the Input field. Please describe any assumptions. Fields that require substantial assumptions descriptions should be documented with supplemental attachment(s).

Section (C). Documentation Reference

To fill out the Documentation Reference field, please name and list attachments on the "Documentation Organizer" tab of the Template. These are to be submitted with the Template.

The Excel spreadsheet template has Field Data Type indicated in Column F. These indicate restictions on the data that is accepted by the system as described below.

Data Type	Description
Text	Will take any combination of numbers, characters, special characters
Number	Will take any numeric value. Truncates to nearest integer
Date	Dates must be in MM/dd/yyyy format
Decimal	Must be real number (12 places).(2 places)
Currency	Must be real number (12 places).(2 places)
Percent	Must be between 0 to 1

Section I. General Unit Information

1. Owner Operator and/or Billing Organization
   Input the name of the company owning the plant and/or responsible for billing and submitting the data.
2. Station Unit
   Input the name as the unit appears in the MIS, if available.
3. PTID or Queue number
   Input the PTID from the MIS relating to the unit, if available or input Interconnection Queue Position number.
4. Installed Date
   Input expected entry date of the project..
5. Age of Plant
   This field may be left blank for new facilities; the system requires it for some calculations.

Section II. Capital Costs

6. Equipment
   Input the cost of new equipment.
7. Spare Parts
   Input the cost of new spare parts.
8. Construction/Installation Labor & Materials
   Input the total cost of labor and minor materials.
9. Electrical Connection and Substation (SUFs)
   Input the amount of SUFs from interconnection study report and any substation work that was not part of the SUF costs.
10. Electrical Interconnection and Upgrades (SDUs)
    Input the amount of SDUs from interconnection study report.
11. Site Prep
    Input the cost associated with clearing and preparing the site for construction of new facility.
12. Engineering & Design
    Input the amount of either external or internal engineering & design services required for new equipment installation.
13. Construction Mgmt./ Field Engr./ Indirects
    Input the cost associated with the fee for managing the construction plan, any field engineers required to assist in developing the site and/or plant, along with any other indirect costs not captured in other lines.
14. Startup and Training
    Input the cost associated with the training of personnel to operate any of the new systems and all costs that are part of the commissioning of the site; including fuel, additional labor not included elsewhere and parts used during the startup process

15. Testing
    Input the total cost associated with all the tests required by manufacturers, transmission companies and others, which are required to prove the site is safe for operation within normal operating parameters.
16. Permitting
    Input the amount of any new permitting that you were required to get before the new equipment could be used.
17. Legal
    Input the amount of any legal expenses that you incurred.
18. Owner's Project Mgmt. & Misc. Engr.
    Input the amount of labor you incurred for providing project management oversight. This includes contractor and internal owner costs.
19. Development Costs
    Input the total cost of any department not currently listed that contributed to bringing this project operational status.
20. Environmental Studies
    Input the amount of study cost required for new permits.
21. Interconnection Studies
    Input the amount of the NYISO interconnection study.
22. Other Studies
    Input the amount of any other study costs not categorized above. Insert a note in the comment field explaining what the costs are. Attach a file for reference purposes.
23. Contingency
    Input the total cost of contingency and put a note in the comment section describing what percentage was used and what items in capital section were not included in the amount. SDUs, SUFs and Interconnection study should not be exposed to contingency.
24. Other
    Input the amount of any other costs not categorized above. Insert a note in the comment field explaining what the costs are. Attach a file for reference purposes.

Section III. Operating Costs

This section looks at capturing the costs of operating your facility. Major sections that will be examined are: Fixed Costs, Variable Operating and Maintenance (VOM) Costs for Turbine, VOM for Balance of Plant, Incremental VOM for Secondary Fuel Operation and Incremental VOM for Duct-fired Operation.

Fixed Costs: *Items in this section should be reported in $/year.*

25. Plant Labor
    Input the total cost of straight time labor. The numbers can be consolidated into a Management and Union bucket.

26. Plant Labor - Overtime
    Input the total amount of plant Overtime. The same file used above can be referenced for Overtime purposes also.
27. Contractor Labor/Services
    Input the amount of contract labor for the plant for the year. This can include planned hourly charges and fixed rate contracts.
28. Labor Benefits
    Input the total amount of benefits costs for the year. In the comment section you can state what your percentage is for straight time and if you have a rate for OT.
29. Maintenance
    Input the total cost of maintenance not included in other buckets below.
30. LTSA Fixed
    Input the annual amount of your fixed cost portion of your Long Term Service Agreement, if you have one.
31. Balance of Plant
    Input the amount of maintenance cost for the plant not covered by the LTSA
32. Environmental/Security/Safety
    Input the amount of dollars allocated for these services.
33. Plant Utilities & Aux Load
    Input the total cost of dollars allocated to station light and power as well as other utilities including water, other electrical, sewer and others. A spreadsheet showing how the costs are determined should be included as an attachment.
34. Administrative Expense
    Input the amount of costs incurred for office and general administration expenses. This can be in a $/employee or other expression that can be explained in the notes section.
35. Property Tax Expense
    Input the amount of property tax you pay. The note section can explain how it is determined. If you have a PILOvertime agreement, then that will need to be attached so we can verify the amount of taxes
36. Training
    Input the annual amount of dollars spent on employee training. This can be in $x/employee. A spreadsheet showing what employees will be trained on is recommended as an attachment.
37. Information Technology
    Input the amount of annual IT expenses. New computers, Upgrades to Control Systems and cell phones are typical types of expenses for this category.
38. Insurance
    Input the amount of dollars allocated for various insurance. Quotes or statements should be included for all amounts.
39. Lease payments
    Input the total cost of dollars allocated to for any type of leases you have. This can be for equipment and or land.
40. Legal
    Input the amount of costs incurred for internal and external legal services.

41. Procurement
    Input the amount of costs you pay for procurement services if any.
42. Other
    Include any items not covered anywhere else in this section. A note in the comment section and back up documentation are required if you use this field.

Variable O&M

43. Not Applicable for ESR
44. Not Applicable for ESR
45. Not Applicable for ESR
46. Battery and Monitoring System - Major Maintenance Parts ($)
    Input the total cost in dollars for how much the parts cost at your major inspection or outage interval. If you have intermediate outages required to reach the major, then also include the costs for parts from those outages. A spreadsheet documenting what costs are allocated to parts, in what outage, is required. If these parts are covered by your long term service agreement, then a calculation as to how those costs are derived is required.
47. Battery and Monitoring System - Major Maintenance Labor ($) - *Input the total cost in dollars for how much the labor cost you will incur for your major inspection or outage interval. If you have intermediate outages required to reach the major, then also include the costs for labor from those outages. A spreadsheet documenting what costs are allocated to labor, in what outage, is required. If these labor is covered by your long term service agreement, then a calculation as to how those costs are derived is required.*
48. Battery and Monitoring System -Major Maintenance Interval (Effective Hours, Cycles, etc.) - *Input the effective operating hours, cycles, or equivalent measure that trigger major maintenance or an outage interval. In the comment field you can also list other duty or usage based outage invervals.*
49. Other (PCSs, HVAC, switchgear, controls, fire prot., etc.) - Major Maintenance Parts ($) - *Input the total cost in dollars for how much the parts cost at your major inspection or outage interval. If you have intermediate outages required to reach the major, then also include the costs for parts from those outages. A spreadsheet documenting what costs are allocated to parts, in what outage, is required. If these parts are covered by your long term service agreement, then a calculation as to how those costs are derived is required.*
50. Other (PCSs, HVAC, switchgear, controls, fire prot., etc.) - *Input the total cost in dollars for how much the labor cost you will incur for your major inspection or outage interval. If you have intermediate outages required to reach the major, then also include the costs for labor from those outages. A spreadsheet documenting what costs are allocated to labor, in what outage, is required. If these labor is covered by your long term service agreement, then a calculation as to how those costs are derived is required.*
51. Other (PCSs, HVAC, switchgear, controls, fire prot., etc.) - Input the effective operating hours, cycles, or equivalent measure that trigger major maintenance or an outage interval. In the comment field you can also list other duty or usage based outage invervals.

Section IV. Financial Inputs

Financial inputs are used in the calculation of the levelized carrying charge rate ("LCC"), which converts the capital investment costs into levelized annual values over the project amortization period. Carrying charges typically include all annual costs that are a direct function of the capital investment amount: principal and interest payments on project debt, equity returns, income taxes, property taxes, and insurance. Represent the project debt and equity as weighted averages over the duration of the respective financing periods. The costs of debt and equity are to be indicated on a nominal basis (e.g., as quoted by project lenders under the terms of the debt) without removing the implicit inflation component. The cost of debt is to be expressed on a pre-tax basis, not adjusted for the tax-deductibility of interest payments. The cost of equity is to be expressed on an after-tax basis.

52. Weighted Average Cost of Capital (WACC) (after tax, nominal, %/year)
    Provide the calculation of your WACC. The information in the rows below should feed into the calculation. Provide a spreadsheet documenting how you arrived at your rate.
53. Equity Fraction
    Input the percentage of equity used for this project.
54. Debt Fraction
    Input the percentage of Debt used for this project.
55. Cost of Equity (after tax, nominal, %/year)
    Input the percentage rate after tax.
56. Cost of Debt (pre-tax, nominal %/year)
    Input the percentage rate pre-tax.
57. Average Debt Maturity(years)
    Input the length of your average debt.
58. Federal Tax Rate (%)
    Input the federal tax percentage your company pays.
59. State Tax Rate (%)
    Input the State tax percentage your company pays.
60. City Tax Rate (%)
    Input the city tax percentage your company pays.
61. Other taxes or Credits (%)
    If you are subject to other taxes, then describe what they are. Also provide documentation. If you get a credit for having a PILOvertime type agreement, then put in the percentage reduction and provide the documentation to justify the use in this review.
62. Effective Tax Rate (%)
    The effective tax percentage your company pays should be the sum of the four prior cells minus (federal tax rate times (the sum of State, City and other, if any).
63. Tax Depreciation Schedule (e.g., MACRS, years)
    Input the MACRS depreciation schedule for the upgraded equipment in years.

64. Useful life – Equity Horizon (years)
    Input the useful life of the equipment. This value can be different from the depreciation value.

Section V. Plant Performance Data

65. Not Applicable for ESR

Other

66. Not Applicable for ESR
67. 10 Minute Spinning Reserves (MW)
    The amount of MWs the unit can supply in the 10 Minute Spinning Reserve market.
68. 30 Minute Spinning Reserves (MW)
    The amount of MWs the unit can supply in the 30 Minute Spinning Reserve market.
69. 10 Minute Non-synch Reserves (MW)
    The amount of MWs the unit can supply in the 10 Minute Non-synch Reserve market.
70. 30 Minute Non-synch Reserves (MW)
    The amount of MWs the unit can supply in the 30 Minute Non-synch Reserve market.
71. Type of Battery Technology (Li-ion NMC/LFP/LMO/LTO, or NaS, etc.)

    The basic battery cell technology in use
72. Make/model of battery equipment

    A nameplate of the equipment is helpful in performance modeling.
73. Make/model of Power Conversion Systems (PCS)

    A nameplate of the equipment is helpful in performance modeling.
74. Number of PCSs
    *Input the number of P*ower Conversion Systems
75. Quantity of battery cells/racks/strings

    Quantity and logical groupings of batteries.
76. Upper Operating Limit (Injection MW)

    +MW limit of full system at unity power factor
77. Lower Operation Limit (Absorbtion MW)

    -MW limit of full system at unity power factor
78. Round Trip Efficiency (%)

    Efficiency of AC-side absorbtion to immediate AC-side re-injection of the storage system.
79. Battery Self-discharge rate (% per 30 days)

    Self-discharge of battery with no demand over a period of time
80. House/auxiliary load of system (kW)

    Combined auxiliary load of PCSs, HVAC, fire prot, controls, lighting etc.

81. Upper State-of-Charge (SOC) control limit (%)

    Upper SOC % relative to the stated energy rating. Equal to or less than 100%

82. Lower SOC control limit (%)

    Lower SOC % relative to the state energy rating. Equal to or greater than 0%

83. Cycles per Day Limit

    If limited for example by equipment OEM or integrator recommendations. Please describe.

84. Injectable MWh per day

    Assuming full energy available at start. Equal to or less than full MWh available.

85. Reactive Power Rating (MVAR)
86. Energy Rating 100% SOC (MWh)
87. Battery Energy Degradation Rate (#full depths cycles/ MWH)

    Battery energy rating degradation with usage, as function of: cycles, calendar time with assumed duty, or similar.

88. Availability (outside of planned derates/outage for maintenance, %)

    % of total hours in year that system is available (not power derated or in outage for planned maintenance)

89 through 112 are Not Applicable for ESR