Instruction Manual for NACFAM Sustainability Framework Model
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General Instructions

This manual is not to be read straight through. It is organized by worksheet in the Excel *Model*. You only need to refer to the sections applicable to the project(s) you are investigating. Each project or set of projects are unique; only use the modules and input cells that are applicable to your unique situation. Many of the modules below have the same exact directions; we simply repeated the directions in order to make it easier for the user. Always follow the directions for the General Input and Assumptions Worksheet and the Manufacturing Process Input Worksheet. This does not mean that you must enter something in every input cell, but follow the applicable directions to determine if you need to enter either an actual or an assumed value in an input cell.

1. **Project Description & Outputs Dashboard**

This tab provides a quick look at the output data for the scenario(s) you are testing. There are three sections represented. The first section only includes, at this point, upstream impacts related to the production of the chemicals and materials (mainly metals at this point) the manufacturing company purchases and uses. The second section provides a quick snapshot of the environmental impacts of the user company's manufacturing processes. Then the third section provides a quick look at the financial impacts of different scenarios versus the baseline.

Environmental – Upstream
The first piece of data here provides the total ten year difference between the comparison and baseline scenarios in energy use (kWh) related to the production of chemicals the manufacturing company uses (D5). The remaining four pieces of output data provide the total ten year difference between the comparison and baseline scenarios in energy use (kWh – D7), greenhouse gas emissions (tons – D8), sulfur dioxide emissions (tons – D9), and solid waste (tons – D10) related to the production of materials. The materials parameters that the *Model* is ready to evaluate so far are metals extraction, refining and smelting. All of the output data for this first section comes from the "Upstream Impacts" worksheet.

Environmental – Manufacturing
The first three data points come from the "Emissions Output Summary" worksheet. These data are the 10 year difference between the comparison and baseline scenarios in greenhouse gas emissions (tons – I5), sulfur dioxide emissions (tons – I6), and nitrogen oxides emissions (tons – I7). The remaining four data points are the 10 year difference between the comparison and baseline scenarios in water usage (hundreds of cubic feet, HCF – I8), solid waste (tons – I9), hazardous waste (tons – I10), and non-hazardous chemical waste (tons – I12). These last four data points are taken from the "Detailed St-specific Env Output", which provides the same output for these four particular categories as the "Detailed eGRID Env Output" worksheet.

Financial
This section provides the financial output for three different comparisons and one "per product" comparison. Each comparison includes a Net Present Value (NPV) and Internal Rate of Return (IRR). NPV is defined as the difference between an initial investment and the present value of

all future cash flows from that investment. The present value of the future cash flows is computed by discounting the future cash flows by a required rate of return (the discount factor entered in the General Inputs and Assumptions worksheet described above). If the NPV is zero, this means that the project analyzed pays back the investment plus the required rate of return. If the NPV is positive it pays back more and if it is negative it pays back less than the investment plus the required rate of return.[1] "IRR is the average annual return earned through the life of an investment."[2]

The first pieces of data provide a comparison of any added "baseline" equipment or processes to the manufacturing process input worksheet culminating in a Total Cumulative Net Present Value (O7) and Internal Rate of Return (O8) for the added "baseline" equipment or process versus the manufacturing process input data. For example, if you have decided to add new pieces of equipment, changed your chemical management plan, or added a new manufacturing system/process to the baseline portion, this section will provide a comparison of the baseline with and without those changes

The second part of this section provides a comparison of the comparison scenario to the manufacturing process input worksheet without any added "baseline" equipment or processes culminating in a Total Cumulative Net Present Value (O13) and Internal Rate of Return (O14) for the added comparison equipment or process versus the manufacturing process input data. For example, if you have added new pieces of comparison equipment, changed your chemical management plan in the comparison inputs, or added a new manufacturing system/process for comparison, this section will provide a comparison of the financials for the manufacturing process input baseline (without any additions to that baseline) to the comparison scenario you have built.

The third part of this section provides a comparison of the comparison scenario to the manufacturing process input worksheet plus any additional baseline equipment/process inputs culminating in a Total Cumulative Net Present Value (O19) and Internal Rate of Return (O20) for the added comparison equipment or process versus the manufacturing process input data including any additional baseline equipment/processes. For example, if you have added new pieces of equipment, changed your chemical management plan, or added a new manufacturing system/process for comparison AND you have added new pieces of comparison equipment, changed your chemical management plan in the comparison inputs, or added a new manufacturing system/process to your baseline, this section will provide a comparison of the financials for the manufacturing process input baseline plus the latter additional baseline inputs to the comparison scenario you have built.

Finally, the last data point in this section (O25) shows the Cumulative Net Present Value of the comparison scenario versus the manufacturing process input (including additional baseline equipment/processes) per unit of product manufactured when you have chosen to enter the total number of products manufactured in row 6 of the manufacturing process input.

[1] http://www.businessdictionary.com/definition/net-present-value-NPV.html
[2] http://www.businessdictionary.com/definition/internal-rate-of-return-IRR.html

2. Color Coding in *NACFAM's Sustainability Framework Model*

Worksheet tabs at bottom of *Model*

- Worksheets for input data are blue
- Sea Green tabs are calculations and output: if you are using the *Model* for analysis do NOT change anything in these worksheets! If you feel a calculation is incorrect then you can change them, but make sure you save a back-up file in case you decide to go back to the original calculations.
- Upstream and Downstream Tabs are different colors because they have input cells AND calculation cells. These tabs should also be referred to for guidance when searching for the types of information necessary for lifecycle analysis.
- All other worksheets are background information for calculations.

Worksheet Cells

- Do not change data in dark blue cells. These cells perform a calculation to determine the right value.
  - If these cells have anything in them like "#N/A" or "#DIV/0!" that will change when the proper inputs are added per the directions below. In some cases these cells may not actually contribute to your calculations if they do not correspond with the input needs for your analysis.
  - If you do decide to override these cells by adding a specific number, make sure you save a back-up file in case you decide to go back to the original calculations.
- Only add data and provide input in white cells
  - White cells that already have numbers in them are there as examples and can be replaced
- NACFAM Red cells are titles
- Green cells are the subjects for the input cells

3. General Input & Assumptions Worksheet

General Input & Assumptions:

- Use the dropdown box in C6 to choose your state **(always follow this step)**
  - This will automatically populate several cells throughout the *Model* (e.g., 2008 state tax rate, 2008 average electricity price, 2008 average natural gas price)
- Enter your Federal tax rate in C7 **(always follow this step)**
- Enter the beginning year for the financials in C9 **(always follow this step)**
- Enter the source for emissions factors that you would like to use for air emissions calculations in C13 **(always follow this step)**. The choices are eGRID or State-specific emissions factors. NACFAM suggests using eGRID emissions factors because this is what the Federal Government and EPA use.
- Enter the eGRID subregion in which your facilities are located (use the eGRID map to the right)

Financial Inputs:

- Enter your Cost of Funds (or opportunity cost) in cell C34 **(always follow this step)**
- You must have a discount rate – either calculate it using the cost of capital module or enter your own project discount rate in C46 **(always follow this step)**. Most companies have a project discount rate established. Many companies we have worked with use 6%.
- Cost of Capital – Use this module if you would like to determine your weighted average cost of capital (WACC). You do not have to use this module if you just want to enter your own project-appropriate discount rate in cell C46. If you do want to calculate your WACC:
  - Enter the 10 year US Treasury yield (%) in C37
  - Select your company's S&P Bond Rating using the drop down menu in C38
  - Go to the S&P Bond Rating module to the right and make sure the spread is updated for each bond rating in cells I37 through I44
  - Do **NOT** change C39, as this cell includes and equation that automatically determines your cost of debt by finding the appropriate spread in the S&P Rating module and adding it to the 10 Year Treasury Bond yield
  - Enter your Cost of Equity in C40 – the comment in B40 shows that you can find this by using the Return on Equity (ROE) from Yahoo! Finance or from your annual report
  - Go to the Capital Structure module and input the company debt value in $millions into cell F38 and Shareholder's Equity in $millions into cell F39 (e.g., if you have $500 million of debt, enter "500"). Do not worry about common shares outstanding or stock price. Do **NOT** change cell F42, this is a value calculation used in the WACC calculation.
  - Do **NOT** change cells C41 or C42, C41 uses the corporate tax rate entered previously and C42 calculates your WACC
    - The calculation for the WACC in C42 is the cost of debt multiplied by the ratio of debt in $millions to total value under capital structure multiplied by 1 minus the corporate tax rate added to the cost of equity multiplied by the ratio of shareholder's equity in $millions to total value under capital structure
- Project discount Rate
  - C45 will automatically populate with the WACC if you have calculated it, do **NOT** change this cell
  - You can enter your preferred project-appropriate discount rate in C46
  - Select which discount rate you would like to use for the *Model* from the drop down menu in C47 (IMPORTANT: This box MUST have a non-zero number in it for calculations to work!)

4. Manufacturing Process Input Worksheet

This worksheet will provide the baseline numbers in your *Model*. It can either be comprised of data for one full facility, multiple facilities, one manufacturing process, or the inputs related to the manufacture of one product line. Regardless, of which scope you choose make sure that you keep that scope in mind with every input you make throughout the *Model* and when you are evaluating the outputs.

- Row 6, white cells – in order to make calculations at the end of the *Model* to illustrate costs per unit of product manufactured, input the number of products expected to be manufactured per year. If you are looking at multiple product types this may not be very important to you. But, if you are looking at the impacts and decisions related to one product line this line will be important. Input the number of that product manufactured in each year for the 11 year period.

Expenses – Baseline

4.1 Energy and Water:

- C14 – input annual electricity use in kWh
- C15 – input percentage of electricity use from the grid (this is the amount of the electricity you use that is purchased from the utility)
- Do **NOT** change C16 – this automatically populates with the average electricity price in your state from 2008 using Energy Information Administration (EIA) data. If you want to manually change that price, save an alternate copy of the spreadsheet so the automatic version is not lost.
- D16 – input an annual growth factor (e.g., for 3% - input "3"). You can base this on your company's experience. The most often used growth factor we have seen is 3%.
- C17 – input the percentage of electricity from renewable energy. This should be a percentage that is NOT included in the overall grid already (e.g., solar on a roof, direct connections to wind farms, etc.). Renewable energy already attached to the grid in your region will likely already be taken into account in the eGRID emissions factor (unless it is new since the latest emissions factors were released, in which case you can include the renewable energy here).
- C18 – input a price for renewable energy if purchasing (e.g., if you have a Power Purchase Agreement – PPA – with another party that owns solar panels on the roof of your facility)
- D18 – input an annual growth factor (e.g., for 3% - input "3"); for a PPA this is usually 0%
- C19 – input the percentage of electricity from on-site non-renewable energy (this could include onsite generators, co-generation, etc.)
- C20 – input a price for onsite non-renewable energy (e.g., how much is spent on natural gas, etc. to run it – it is never $0 if you have onsite non-renewable energy)
- D20 – input an annual growth factor (e.g., for 3% - input "3"), again 3% is a common estimate
- C21 – choose the natural gas combustor type from the drop down menu (this helps determine emissions factors for estimating NOx and CO emissions related to natural gas combustion). You can find out the natural gas combustor type by asking your natural gas provider.

However, if you do not know this you can also simply make a guess or pick a conservative estimate to begin with (by conservative we mean the estimate that assumes the least amount of emissions – but we stress that we would never condone this from a policy or regulatory standpoint, only as a starting point for a user to provide an initial comparison of business options without a lot of data). Choose a large wall-fired boiler controlled with flue gas recirculation if you are looking for the most conservative large boiler option. The most conservative choice overall would be a small boiler controlled with flue gas recirculation, but we are going to assume that the natural gas utility would use larger wall-fired boilers.

- C22 – choose whether the natural gas combustor is a controlled low NOx burner or not (this also helps determine the emissions factors used for emissions estimates). Again, you can find out the natural gas combustor is controlled and by what method by asking your natural gas provider. However, you may want to simply use the most conservative estimate and assume that the burner is controlled. Again, we stress that we would never condone this from a policy or regulatory standpoint, only as a starting point for a user to provide an initial comparison of business options without a lot of data.
- C23 – if you know the annual mmBtu of your natural gas usage enter it here
- C24 – do **NOT** change this cell, it converts mmBtu to million cubic feet
- C25 – enter annual natural gas usage in thousand cubic feet if known, if any number is entered into this cell it will override the number entered into C23. If you do not know your usage in thousand cubic feet MAKE SURE that C25 is empty.
- C26 – do **NOT** change this cell, it either calculates thousand cubic feet from cell C24 or uses the amount entered into C25
- C27 – do **NOT** change this cell, it automatically populates with the average natural gas price from EIA data for 2008. If you want to manually change that price, save an alternate copy of the spreadsheet so the automatic version is not lost.
- D27 – input an annual growth factor (e.g., for 3% - input "3"). Again, the most common factor we have seen is 3%.
- C28 – input annual average water use in Hundred Cubic Feet (HCF; 1 HCF = 748.05 gallons)
- C29 – input the price of water in $/HCF
- D29 – input an annual growth factor (e.g., for 3% - input "3")

4.2 Materials:

- A33 – input type of material (e.g., iron). This material section is open to any material. The second two sections – A37 and A41 are drop-down menus for metals with known upstream impacts related to refining and smelting activities.
- C33 – amount of material in lbs.
- C34 – price of material in $/lb.
- D34 – input an annual growth factor (e.g., for 3% - input "3")
- C35 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*
- C36 – cost for alternative form of metal in $/lb. (e.g., powder form instead of sheets, etc.)
- A37 – choose type of material from drop down and refining/preparation process used (e.g., aluminum: Bayer refining, Halle-Heroult smelting conventional). If you are unsure of the refining and smelting process used you can simply use the most conventional method to

provide an idea. Remember, estimates are important so you at least have a way to develop a beginning picture of the impacts of your manufacturing operations.

- C37 – amount of material in lbs.
- C38 – price of material in $/lb.
- D38 – input an annual growth factor (e.g., for 3% - input "3")
- C39 – not ready for use, placeholder for when transportation metrics are incorporated into the *Model*
- C40 – cost for alternative form of metal in $/lb. (e.g., powder form instead of sheets, etc.)
- A41 – choose type of material from drop down and refining/preparation process used (e.g., aluminum: Bayer refining, Halle-Heroult smelting conventional). If you are unsure of the refining and smelting process used you can simply use the most conventional method to provide an idea. Remember, estimates are important so you at least have a way to develop a beginning picture of the impacts of your manufacturing operations.
- C41 – amount of material in lbs.
- C42 – price of material in $/lb.
- D42 – input an annual growth factor (e.g., for 3% - input "3")
- C43 – not ready for use, placeholder for when transportation metrics are incorporated into the *Model*
- C44 – cost for alternative form of metal in $/lb. (e.g., powder form instead of sheets, etc.)

4.3 Industrial and Organic Chemicals and Fluids:

- A48 – input type or name of chemical or fluid. In parentheses add the units that the chemical or fluid is measured in (e.g., gallons or pounds), but not the actual amount – which will be entered in the next step. This is only needed in order to make sure that you remember and note the units you are using to be consistent in your analysis and when analyzing results.
- C48 – amount of chemical in gallons or pounds (only enter the number amount, not the units, in this cell. Units should be entered in parentheses after the name of the chemical in the corresponding A cell).
- C49 – price of chemical in $/gallon or $/lb.
- C50 – do **NOT** change this cell, it calculates the number of drums or containers needed to deliver chemicals used based on the volume or amount of chemical each container holds (entered in C51) – these are the containers in which the chemical is shipped to the facility.
- C51 – enter the amount of chemical the container can hold in gallons or pounds (be sure it is consistent with the units of measurement used for this chemical in parentheses after the name of the chemical in column A and that it is measured in for its volume/amount) **This cell MUST have a number in it in order to avoid division errors throughout the model.**
- C52 – enter the amount paid for the drum or container itself (not including the chemical)
- C53 – enter the amount received for selling used drums or containers
- C54 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*
- C55 – choose Yes from the drop down box if you currently already have a chemical partnership in place where the chemical provider retains ownership and your company does not pay for the drums or containers used for transportation
- C56 – If you chose Yes in C55 enter the price of the chemical for this alternative in $/gallon or $/lb.

- H54 – Choose Yes from the drop down box if your comparison scenario will use a chemical partnership where the chemical company retains ownership of the chemicals throughout their life and their use

The following are listed as coolants, but you can use them for more chemicals or fluids of any kind

- A58 – input type or name of chemical or fluid. In parentheses add the units that the chemical or fluid is measured in (e.g., gallons or pounds), but not the actual amount – which will be entered in the next step. This is only needed in order to make sure that you remember and note the units you are using to be consistent in your analysis and when analyzing results.
- C58 – amount of chemical in gallons or pounds (only enter the number amount, not the units, in this cell. Units should be entered in parentheses after the name of the chemical in the corresponding A cell).
- C59 – price of material in $/gallon or $/lb.
- C60 – do **NOT** change this cell, it calculates the number of drums or containers needed to deliver chemicals used based on the volume or amount of chemical each container holds (entered in C51) – these are the containers in which the chemical is shipped to the facility.
- C61 – enter the amount of chemical the container can hold in gallons or pounds (be sure it is consistent with the units of measurement used for this chemical in parentheses after the name of the chemical in column A and that it is measured in for its volume/amount) **This cell MUST have a number in it in order to avoid division errors throughout the model.**
- C62 – enter the amount paid for the drum or container itself (not including the chemical)
- C63 – enter the amount received for selling used drums or containers
- C64 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*
- C65 – choose Yes from the drop down box if you currently already have a chemical partnership in place where the chemical provider retains ownership and your company does not pay for the drums or containers used for transportation
- C66 – If you chose Yes in C55 enter the price of the chemical for this alternative in $/gallon or $/lb.
- H64 – Choose Yes from the drop down box if your comparison scenario will use a chemical partnership where the chemical company retains ownership of the chemicals throughout their life and their use

The following are listed as organic solvents, but you can use them for more chemicals or fluids of any kind

- A68 – input type or name of chemical or fluid. In parentheses add the units that the chemical or fluid is measured in (e.g., gallons or pounds), but not the actual amount – which will be entered in the next step. This is only needed in order to make sure that you remember and note the units you are using to be consistent in your analysis and when analyzing results.
- C68 – amount of chemical in gallons or pounds (only enter the number amount, not the units, in this cell. Units should be entered in parentheses after the name of the chemical in the corresponding A cell).
- C69 – price of material in $/gallon or $/lb.

- C70 – do **NOT** change this cell, it calculates the number of drums or containers needed to deliver chemicals used based on the volume or amount of chemical each container holds (entered in C51) – these are the containers in which the chemical is shipped to the facility.
- C71 – enter the amount of chemical the container can hold in gallons or pounds (be sure it is consistent with the units of measurement used for this chemical above). **This cell MUST have a number in it in order to avoid division errors throughout the model.**
- C72 – enter the amount paid for the drum or container itself (not including the chemical)
- C73 – enter the amount received for selling used drums or containers
- C74 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*
- C75 – choose Yes from the drop down box if you currently already have a chemical partnership in place where the chemical provider retains ownership and your company does not pay for the drums or containers used for transportation
- C76 – if you chose Yes in C55 enter the price of the chemical for this alternative in $/gallon or $/lb.
- H73 – choose Yes from the drop down box if your comparison scenario will use a chemical partnership where the chemical company retains ownership of the chemicals throughout their life and their use

4.4 Waste:

- C79 – enter the amount of solid waste in tons for the facility, manufacturing process or the manufacture of a type of product (stay consistent with the scope you used for all of the inputs on this worksheet)
- C80 – input the tipping fee for solid waste
- D80 – input an annual growth factor for that tipping fee (e.g., for 3% - input "3")
- C81 – enter the amount of hazardous waste in tons for the facility, manufacturing process or the manufacture of a type of product (stay consistent with the scope you used for all of the inputs on this worksheet)
- C82 – input the tipping fee for hazardous waste
- D82 – input an annual growth factor for that tipping fee (e.g., for 3% - input "3")
- C83 – enter the amount of non-hazardous chemical waste in tons for the facility, manufacturing process or the manufacture of a type of product (stay consistent with the scope you used for all of the inputs on this worksheet)
- C84 – input the tipping fee for non-hazardous chemical waste
- D82 – input an annual growth factor for that tipping fee (e.g., for 3% - input "3")

4.5 Waste Transportation:

- C87 – input how much it costs for transporting solid waste in $/pickup
- D87 – input an annual growth factor of that price (e.g., for 3% - input "3")
- C88 – input the number of tons of solid waste transported per pickup. **This cell MUST have a number in it in order to avoid division errors throughout the model.**
- C89 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*

- C90 – input how much it costs for transporting hazardous waste in $/pickup
- D90 – input an annual growth factor of that price (e.g., for 3% - input "3")
- C91 – input the number of tons of hazardous waste transported per pickup. **This cell MUST have a number in it in order to avoid division errors throughout the model.**
- C92 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*
- C93 – input how much it costs for transporting non-hazardous chemical waste in $/pickup
- D93 – input an annual growth factor of that price (e.g., for 3% - input "3")
- C94 – input the number of tons of non-hazardous waste transported per pickup. **This cell MUST have a number in it in order to avoid division errors throughout the model.**
- C95 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*

4.6 Water Treatment:

- C98 – input total annual waste water treatment costs per gallon of waste water
- D98 – input an annual growth factor for those costs (e.g., for 3% - input "3")
- C99 – input the amount of waste water treated annually
- C100 – input the average monthly input for water treatment chemicals (e.g., Chlorine) in gallons or pounds (if you use a different method for treatment, e.g. UV, enter a 1 here and break the related costs down into some comparable monthly cost to enter in C101 below)
- C101 – price of chemical in $/gallon or $/lb. (if you use a different method for treatment, e.g. UV, enter a 1 in C100 and break the related costs down into some comparable monthly cost to enter in this cell)
- D101 – input an annual growth factor for those costs (e.g., for 3% - input "3")
- C102 – do **NOT** change this cell, it calculates the number of drums or containers needed to deliver chemicals used based on the information below this cell – volume of chemical per container divided by the total volume of chemical used
- C103 – enter the amount of chemical the container can hold in gallons or pounds (be sure it is consistent with the units of measurement used for this chemical above). **This cell MUST have a number in it in order to avoid division errors throughout the model.**
- C104 – enter the amount paid for the drum or container itself (not including the chemical)
- C105 – enter the amount received for selling used drums or containers
- C106 – **not ready for use**, placeholder for when transportation metrics are incorporated into the *Model*

4.7 Legal:

Legal costs (compliance, litigation, lobbying and clean-up) should be a part of any thorough and comprehensive analysis of business-as-usual versus comparison case projects

- C110 – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities as these are a cost of doing business-as-usual.

- C111 – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities as these are a cost of doing business-as-usual.
- C112 – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities as these are a cost of doing business-as-usual.
- C113 – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities as these are a cost of doing business-as-usual.

- C115 – Enter annual amount of $ attributed to equipment maintenance and repair for the scope decided upon earlier (e.g., facility, process or manufacture of a type of product).

4.8 Revenues (in addition to those from waste RGOs and emission credit sales mentioned earlier)

Energy-Related Revenue:

- C121 – enter average annual demand/response revenues, in $, expected over the 11 year period based on business as usual without any improvements
- D121 – input an annual growth factor for these revenues if expected to occur without any improvements (e.g., for 3% - input "3")
- C122 – enter $ amount of renewable energy incentives expected over the 11 year period based on business as usual without any improvements or new projects
- D122 – input an annual growth factor for these incentives if expected to occur without any improvements (e.g., for 3% - input "3")

5. Format for rest of inputs

For the remaining worksheets there will always be 4 modules for each type of equipment (which can be more than one piece of equipment, the categories can be treated as systems as well). The 4 modules are broken down as follows:

- First, there are 2 "Baseline" Modules – these modules either represent what is already included in the baseline or are added to the baseline inputs from the manufacturing process worksheet (choosing from these two options will be explained)
- Then, there are 2 comparison modules immediately under the "baseline" modules – depending on the grouping these modules will either be named equipment 1 and 2 or equipment 3 & 4
- You must include a baseline piece of equipment in order to evaluate the comparison versus the baseline on the relevant characteristics
- It is very important to note that each of the 4 modules for each type of equipment or system will have the same exact type of inputs

- The first comparison module (on the left, with inputs in column C) is always compared to the 1st baseline module immediately above it (on the left, with inputs in column C)
- The second comparison module (on the left, with inputs in column G) is always compared to the 2nd baseline module immediately above it (on the left, with inputs in column G)

- "Next Cell" will always refer to the next cell for input below the cell referred to in the previous step/bullet

6. Equipment-Scale Worksheet

6.1 Energy Equipment

Baseline 1 is compared Equipment (Comparison) 1
Baseline 2 is compared to Equipment (Comparison) 1

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C18
  Equipment (Comparison) 1: C53
  Baseline 2: G18
  Equipment (Comparison) 2: G53

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C19
  Equipment (Comparison) 1: C54
  Baseline 2: G19
  Equipment (Comparison) 2: G54

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next

cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

Baseline 1: C20
Equipment (Comparison) 1: C55
Baseline 2: G20
Equipment (Comparison) 2: G55

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

  Baseline 1: C21
  Equipment (Comparison) 1: C56
  Baseline 2: G21
  Equipment (Comparison) 2: G56

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

  Baseline 1: C22
  Equipment (Comparison) 1: C57
  Baseline 2: G22
  Equipment (Comparison) 2: G57

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes

  Baseline 1: C23
  Equipment (Comparison) 1: C58
  Baseline 2: G23
  Equipment (Comparison) 2: G58

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")

  Baseline 1: C24
  Equipment (Comparison) 1: C59
  Baseline 2: G24
  Equipment (Comparison) 2: G59

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)

  Baseline 1: C25

Equipment (Comparison) 1: C60
Baseline 2: G25
Equipment (Comparison) 2: G60

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C26
  Equipment (Comparison) 1: C61
  Baseline 2: G26
  Equipment (Comparison) 2: G61

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C27
  Equipment (Comparison) 1: C62
  Baseline 2: G27
  Equipment (Comparison) 2: G62

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C28
  Equipment (Comparison) 1: C63
  Baseline 2: G28
  Equipment (Comparison) 2: G63

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C29
  Equipment (Comparison) 1: C64
  Baseline 2: G29
  Equipment (Comparison) 2: G64

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

Baseline 1: C30
Equipment (Comparison) 1: C65
Baseline 2: G30
Equipment (Comparison) 2: G65

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C31
  Equipment (Comparison) 1: C66
  Baseline 2: G31
  Equipment (Comparison) 2: G66

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C32
  Equipment (Comparison) 1: C67
  Baseline 2: G32
  Equipment (Comparison) 2: G67

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C33
  Equipment (Comparison) 1: C68
  Baseline 2: G33
  Equipment (Comparison) 2: G68

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C34
  Equipment (Comparison) 1: C69
  Baseline 2: G34
  Equipment (Comparison) 2: G69

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C35
  Equipment (Comparison) 1: C70
  Baseline 2: G35
  Equipment (Comparison) 2: G70

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C36
  Equipment (Comparison) 1: C71
  Baseline 2: G36

Equipment (Comparison) 2: G71

- **Energy**
  - Enter average monthly electricity generated by the energy equipment in kWh

Baseline 1: C39
Equipment (Comparison) 1: C74
Baseline 2: G39
Equipment (Comparison) 2: G74

  - Enter the percentage sold back to the grid

Baseline 1: C40
Equipment (Comparison) 1: C75
Baseline 2: G40
Equipment (Comparison) 2: G75

  - Enter the price for sale back to the grid

Baseline 1: C41
Equipment (Comparison) 1: C76
Baseline 2: G41
Equipment (Comparison) 2: G76

  - Enter average monthly natural gas used by equipment in thousand cubic feet

Baseline 1: C42
Equipment (Comparison) 1: C77
Baseline 2: G42
Equipment (Comparison) 2: G77

- Enter average monthly water used by equipment in HCFs

Baseline 1: C43
Equipment (Comparison) 1: C78
Baseline 2: G43
Equipment (Comparison) 2: G78

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.

Baseline 1: C45
Equipment (Comparison) 1: C80
Baseline 2: G45
Equipment (Comparison) 2: G80

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not

readily available you should develop a mechanism for attributing litigation costs to different activities.

Baseline 1: C46
Equipment (Comparison) 1: C81
Baseline 2: G46
Equipment (Comparison) 2: G81

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.

  Baseline 1: C47
  Equipment (Comparison) 1: C82
  Baseline 2: G47
  Equipment (Comparison) 2: G82

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

  Baseline 1: C48
  Equipment (Comparison) 1: C83
  Baseline 2: G48
  Equipment (Comparison) 2: G83

6.2 General Recycle, Remanufacture, Reuse Equipment

Baseline 1 is compared Equipment (Comparison) 1
Baseline 2 is compared to Equipment (Comparison) 1

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario

- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C89
Equipment (Comparison) 1: C135
Baseline 2: G89
Equipment (Comparison) 2: G135

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

Baseline 1: C90
Equipment (Comparison) 1: C136
Baseline 2: G90
Equipment (Comparison) 2: G136

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

Baseline 1: C91
Equipment (Comparison) 1: C137
Baseline 2: G91
Equipment (Comparison) 2: G137

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

Baseline 1: C92
Equipment (Comparison) 1: C138
Baseline 2: G92
Equipment (Comparison) 2: G138

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

Baseline 1: C93
Equipment (Comparison) 1: C139
Baseline 2: G93
Equipment (Comparison) 2: G139

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes

Baseline 1: C94
Equipment (Comparison) 1: C140
Baseline 2: G94

Equipment (Comparison) 2: G140

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C95
  Equipment (Comparison) 1: C141
  Baseline 2: G95
  Equipment (Comparison) 2: G141

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C96
  Equipment (Comparison) 1: C142
  Baseline 2: G96
  Equipment (Comparison) 2: G142

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C97
  Equipment (Comparison) 1: C143
  Baseline 2: G97
  Equipment (Comparison) 2: G143

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C98
  Equipment (Comparison) 1: C144
  Baseline 2: G98
  Equipment (Comparison) 2: G144

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C99
  Equipment (Comparison) 1: C145
  Baseline 2: G99

Equipment (Comparison) 2: G145

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C100
  Equipment (Comparison) 1: C146
  Baseline 2: G100
  Equipment (Comparison) 2: G146

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C101
  Equipment (Comparison) 1: C147
  Baseline 2: G101
  Equipment (Comparison) 2: G147

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C102
  Equipment (Comparison) 1: C148
  Baseline 2: G102
  Equipment (Comparison) 2: G148

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C103
  Equipment (Comparison) 1: C149
  Baseline 2: G103
  Equipment (Comparison) 2: G149

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C105
  Equipment (Comparison) 1: C151
  Baseline 2: G105
  Equipment (Comparison) 2: G151

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage

Baseline 1: C106
Equipment (Comparison) 1: C152
Baseline 2: G106
Equipment (Comparison) 2: G152

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C107
  Equipment (Comparison) 1: C153
  Baseline 2: G107
  Equipment (Comparison) 2: G153

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C108
  Equipment (Comparison) 1: C154
  Baseline 2: G108
  Equipment (Comparison) 2: G154

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C111
  Equipment (Comparison) 1: C157
  Baseline 2: G111
  Equipment (Comparison) 2: G157

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C112
  Equipment (Comparison) 1: C158
  Baseline 2: G112
  Equipment (Comparison) 2: G158

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C113
  Equipment (Comparison) 1: C159
  Baseline 2: G113
  Equipment (Comparison) 2: G159

- **Material recycled, reused or remanufactured**
  - Enter the Iron, Steel and Other metal recycled in lbs. – these are for your information to be able to track the amount recycled, these inputs are not used for the overall analysis

  Baseline 1: C117, C119, C121
  Equipment (Comparison) 1: C163, C165, C167
  Baseline 2: G117, G119, G121
  Equipment (Comparison) 2: G163, G165, G167

- Enter the amount of Iron, Steel and Other metal reused in the manufacturing process – the only impact shown in the overall analysis is when the materials are reused in the manufacturing process as an offset to purchasing new metal

Baseline 1: C118, C120, C122
Equipment (Comparison) 1: C164, C166, C169
Baseline 2: G118, G120, G122
Equipment (Comparison) 2: G164, G166, G169

- For Other Metal in the Comparison Case **ONLY,** you can enter a new price if you are reusing a metal that has a price that is different from the price entered in the manufacturing process input worksheet

Equipment (Comparison) 1: C168
Equipment (Comparison) 2: G168

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

Baseline 1: C123
Equipment (Comparison) 1: C170
Baseline 2: G123
Equipment (Comparison) 2: G170

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons

Baseline 1: C124
Equipment (Comparison) 1: C171
Baseline 2: G124
Equipment (Comparison) 2: G171

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons

Baseline 1: C125
Equipment (Comparison) 1: C172
Baseline 2: G125
Equipment (Comparison) 2: G172

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.

Baseline 1: C127
Equipment (Comparison) 1: C174
Baseline 2: G127
Equipment (Comparison) 2: G174

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C128
  Equipment (Comparison) 1: C175
  Baseline 2: G128
  Equipment (Comparison) 2: G175

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C129
  Equipment (Comparison) 1: C176
  Baseline 2: G129
  Equipment (Comparison) 2: G176

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C130
  Equipment (Comparison) 1: C177
  Baseline 2: G130
  Equipment (Comparison) 2: G177

6.3 General Onsite Waste Management/Treatment Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario

- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C183
Equipment (Comparison) 1: C229
Baseline 2: G183
Equipment (Comparison) 2: G229

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C184
  Equipment (Comparison) 1: C230
  Baseline 2: G184
  Equipment (Comparison) 2: G230

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C185
  Equipment (Comparison) 1: C231
  Baseline 2: G185
  Equipment (Comparison) 2: G231

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

  Baseline 1: C186
  Equipment (Comparison) 1: C232
  Baseline 2: G186
  Equipment (Comparison) 2: G232

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

  Baseline 1: C187
  Equipment (Comparison) 1: C233
  Baseline 2: G187
  Equipment (Comparison) 2: G233

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes

  Baseline 1: C188
  Equipment (Comparison) 1: C234
  Baseline 2: G188

Equipment (Comparison) 2: G234

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C189
  Equipment (Comparison) 1: C235
  Baseline 2: G189
  Equipment (Comparison) 2: G235

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C190
  Equipment (Comparison) 1: C236
  Baseline 2: G190
  Equipment (Comparison) 2: G236

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C191
  Equipment (Comparison) 1: C237
  Baseline 2: G191
  Equipment (Comparison) 2: G237

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C192
  Equipment (Comparison) 1: C238
  Baseline 2: G192
  Equipment (Comparison) 2: G238

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C193
  Equipment (Comparison) 1: C239
  Baseline 2: G193

Equipment (Comparison) 2: G239

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C194
  Equipment (Comparison) 1: C240
  Baseline 2: G194
  Equipment (Comparison) 2: G240

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C195
  Equipment (Comparison) 1: C241
  Baseline 2: G195
  Equipment (Comparison) 2: G241

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C196
  Equipment (Comparison) 1: C242
  Baseline 2: G196
  Equipment (Comparison) 2: G242

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C197
  Equipment (Comparison) 1: C243
  Baseline 2: G197
  Equipment (Comparison) 2: G243

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C199
  Equipment (Comparison) 1: C245
  Baseline 2: G199
  Equipment (Comparison) 2: G245

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage

Baseline 1: C200
Equipment (Comparison) 1: C246
Baseline 2: G200
Equipment (Comparison) 2: G246

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C201
  Equipment (Comparison) 1: C247
  Baseline 2: G201
  Equipment (Comparison) 2: G247

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C202
  Equipment (Comparison) 1: C248
  Baseline 2: G202
  Equipment (Comparison) 2: G248

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C205
  Equipment (Comparison) 1: C251
  Baseline 2: G205
  Equipment (Comparison) 2: G251

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C206
  Equipment (Comparison) 1: C252
  Baseline 2: G206
  Equipment (Comparison) 2: G252

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C207
  Equipment (Comparison) 1: C253
  Baseline 2: G207
  Equipment (Comparison) 2: G253

- **Chemicals**
  - Enter amount of organic solvent used for equipment (gallons or lbs.)

  Baseline 1: C211
  Equipment (Comparison) 1: C257
  Baseline 2: G211
  Equipment (Comparison) 2: G257

- If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Baseline 1: C212
Equipment (Comparison) 1: C258
Baseline 2: G212
Equipment (Comparison) 2: G258

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C213
Equipment (Comparison) 1: C259
Baseline 2: G213
Equipment (Comparison) 2: G259

- If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Baseline 1: C214
Equipment (Comparison) 1: C260
Baseline 2: G214
Equipment (Comparison) 2: G260

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C215
Equipment (Comparison) 1: C261
Baseline 2: G215
Equipment (Comparison) 2: G261

- If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Baseline 1: C216
Equipment (Comparison) 1: C262
Baseline 2: G216
Equipment (Comparison) 2: G262

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

Baseline 1: C217
Equipment (Comparison) 1: C263
Baseline 2: G217
Equipment (Comparison) 2: G263

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons

Baseline 1: C218

Equipment (Comparison) 1: C264
Baseline 2: G218
Equipment (Comparison) 2: G264

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C219
  Equipment (Comparison) 1: C265
  Baseline 2: G219
  Equipment (Comparison) 2: G265

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C221
  Equipment (Comparison) 1: C267
  Baseline 2: G221
  Equipment (Comparison) 2: G267

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C222
  Equipment (Comparison) 1: C268
  Baseline 2: G222
  Equipment (Comparison) 2: G268

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C223
  Equipment (Comparison) 1: C269
  Baseline 2: G223
  Equipment (Comparison) 2: G269

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

Baseline 1: C224
Equipment (Comparison) 1: C270
Baseline 2: G224
Equipment (Comparison) 2: G270

6.4 Waste Water Treatment/Management Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C276
  Equipment (Comparison) 1: C316
  Baseline 2: G276
  Equipment (Comparison) 2: G316

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C277
  Equipment (Comparison) 1: C317
  Baseline 2: G277
  Equipment (Comparison) 2: G317

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C278
  Equipment (Comparison) 1: C318
  Baseline 2: G278
  Equipment (Comparison) 2: G318

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that

you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

Baseline 1: C279
Equipment (Comparison) 1: C319
Baseline 2: G279
Equipment (Comparison) 2: G319

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

  Baseline 1: C280
  Equipment (Comparison) 1: C320
  Baseline 2: G280
  Equipment (Comparison) 2: G320

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes

  Baseline 1: C281
  Equipment (Comparison) 1: C321
  Baseline 2: G281
  Equipment (Comparison) 2: G321

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")

  Baseline 1: C282
  Equipment (Comparison) 1: C322
  Baseline 2: G282
  Equipment (Comparison) 2: G322

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)

  Baseline 1: C283
  Equipment (Comparison) 1: C323
  Baseline 2: G283
  Equipment (Comparison) 2: G323

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C284
  Equipment (Comparison) 1: C324

Baseline 2: G284
Equipment (Comparison) 2: G324

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C285
  Equipment (Comparison) 1: C325
  Baseline 2: G285
  Equipment (Comparison) 2: G325

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C286
  Equipment (Comparison) 1: C326
  Baseline 2: G286
  Equipment (Comparison) 2: G326

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C287
  Equipment (Comparison) 1: C327
  Baseline 2: G287
  Equipment (Comparison) 2: G327

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C288
  Equipment (Comparison) 1: C328
  Baseline 2: G288
  Equipment (Comparison) 2: G328

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C289

Equipment (Comparison) 1: C329
Baseline 2: G289
Equipment (Comparison) 2: G329

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C290
  Equipment (Comparison) 1: C330
  Baseline 2: G290
  Equipment (Comparison) 2: G330

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C292
  Equipment (Comparison) 1: C332
  Baseline 2: G292
  Equipment (Comparison) 2: G332

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C293
  Equipment (Comparison) 1: C333
  Baseline 2: G293
  Equipment (Comparison) 2: G333

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C294
  Equipment (Comparison) 1: C334
  Baseline 2: G294
  Equipment (Comparison) 2: G334

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C295
  Equipment (Comparison) 1: C335
  Baseline 2: G295
  Equipment (Comparison) 2: G335

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C298
  Equipment (Comparison) 1: C338
  Baseline 2: G298
  Equipment (Comparison) 2: G338

- Enter average monthly natural gas used by equipment in thousand cubic feet

Baseline 1: C299
Equipment (Comparison) 1: C339
Baseline 2: G299
Equipment (Comparison) 2: G339

- Enter average monthly water used by equipment in HCFs

Baseline 1: C300
Equipment (Comparison) 1: C340
Baseline 2: G300
Equipment (Comparison) 2: G340

- **Chemicals**
  - Enter the **Average Monthly Chemicals Used by Equipment (e.g., Chlorine or other) in gallons**

Baseline 1: C302
Equipment (Comparison) 1: C342
Baseline 2: G302
Equipment (Comparison) 2: G342

  - Enter the **Other Monthly O&M Costs ($)**

Baseline 1: C303
Equipment (Comparison) 1: C343
Baseline 2: G303
Equipment (Comparison) 2: G343

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

Baseline 1: C304
Equipment (Comparison) 1: C344
Baseline 2: G304
Equipment (Comparison) 2: G344

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons

Baseline 1: C305
Equipment (Comparison) 1: C345
Baseline 2: G305
Equipment (Comparison) 2: G345

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons

Baseline 1: C306
Equipment (Comparison) 1: C346
Baseline 2: G306
Equipment (Comparison) 2: G346

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C308
  Equipment (Comparison) 1: C348
  Baseline 2: G308
  Equipment (Comparison) 2: G348

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C309
  Equipment (Comparison) 1: C349
  Baseline 2: G309
  Equipment (Comparison) 2: G349

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C310
  Equipment (Comparison) 1: C350
  Baseline 2: G310
  Equipment (Comparison) 2: G350

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C311
  Equipment (Comparison) 1: C351
  Baseline 2: G311
  Equipment (Comparison) 2: G351

6.5 Onsite Storage Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it

included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).

- For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
  - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C357
Equipment (Comparison) 1: C391
Baseline 2: G357
Equipment (Comparison) 2: G391

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C358
  Equipment (Comparison) 1: C392
  Baseline 2: G358
  Equipment (Comparison) 2: G392

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C359
  Equipment (Comparison) 1: C393
  Baseline 2: G359
  Equipment (Comparison) 2: G393

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

  Baseline 1: C360
  Equipment (Comparison) 1: C394
  Baseline 2: G360
  Equipment (Comparison) 2: G394

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

Baseline 1: C361
Equipment (Comparison) 1: C395
Baseline 2: G361
Equipment (Comparison) 2: G395

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C362
  Equipment (Comparison) 1: C396
  Baseline 2: G362
  Equipment (Comparison) 2: G396

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C363
  Equipment (Comparison) 1: C397
  Baseline 2: G363
  Equipment (Comparison) 2: G397

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C364
  Equipment (Comparison) 1: C398
  Baseline 2: G364
  Equipment (Comparison) 2: G398

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C365
  Equipment (Comparison) 1: C399
  Baseline 2: G365
  Equipment (Comparison) 2: G399

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C366

Equipment (Comparison) 1: C400
Baseline 2: G366
Equipment (Comparison) 2: G400

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C367
  Equipment (Comparison) 1: C401
  Baseline 2: G367
  Equipment (Comparison) 2: G401

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C368
  Equipment (Comparison) 1: C402
  Baseline 2: G368
  Equipment (Comparison) 2: G402

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C369
  Equipment (Comparison) 1: C403
  Baseline 2: G369
  Equipment (Comparison) 2: G403

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C370
  Equipment (Comparison) 1: C404
  Baseline 2: G370
  Equipment (Comparison) 2: G404

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C371
  Equipment (Comparison) 1: C405
  Baseline 2: G371

Equipment (Comparison) 2: G405

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C373
  Equipment (Comparison) 1: C407
  Baseline 2: G373
  Equipment (Comparison) 2: G407

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C374
  Equipment (Comparison) 1: C408
  Baseline 2: G374
  Equipment (Comparison) 2: G408

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C375
  Equipment (Comparison) 1: C409
  Baseline 2: G375
  Equipment (Comparison) 2: G409

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C376
  Equipment (Comparison) 1: C410
  Baseline 2: G376
  Equipment (Comparison) 2: G410

- **Energy**
  - Enter average monthly electricity used by equipment in kWh
  Baseline 1: C379
  Equipment (Comparison) 1: C413
  Baseline 2: G379
  Equipment (Comparison) 2: G413

  - Enter average monthly natural gas used by equipment in thousand cubic feet
  Baseline 1: C380
  Equipment (Comparison) 1: C414
  Baseline 2: G380
  Equipment (Comparison) 2: G414

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C381
  Equipment (Comparison) 1: C415
  Baseline 2: G381

Equipment (Comparison) 2: G415

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C383
  Equipment (Comparison) 1: C417
  Baseline 2: G383
  Equipment (Comparison) 2: G417

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C384
  Equipment (Comparison) 1: C418
  Baseline 2: G384
  Equipment (Comparison) 2: G418

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C385
  Equipment (Comparison) 1: C419
  Baseline 2: G385
  Equipment (Comparison) 2: G419

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C386
  Equipment (Comparison) 1: C420
  Baseline 2: G386
  Equipment (Comparison) 2: G420

6.6 Used Equipment Sales

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and

comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).

- For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
  - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C426
Equipment (Comparison) 1: C446
Baseline 2: G426
Equipment (Comparison) 2: G446

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

Baseline 1: C427
Equipment (Comparison) 1: C447
Baseline 2: G427
Equipment (Comparison) 2: G447

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

Baseline 1: C428
Equipment (Comparison) 1: C448
Baseline 2: G428
Equipment (Comparison) 2: G448

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

Baseline 1: C429
Equipment (Comparison) 1: C449
Baseline 2: G429
Equipment (Comparison) 2: G449

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C430
  - Equipment (Comparison) 1: C450
  - Baseline 2: G430
  - Equipment (Comparison) 2: G450

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C431
  - Equipment (Comparison) 1: C451
  - Baseline 2: G431
  - Equipment (Comparison) 2: G451

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  - Baseline 1: C432
  - Equipment (Comparison) 1: C452
  - Baseline 2: G432
  - Equipment (Comparison) 2: G452

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  - Baseline 1: C433
  - Equipment (Comparison) 1: C453
  - Baseline 2: G433
  - Equipment (Comparison) 2: G453

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  - Baseline 1: C434
  - Equipment (Comparison) 1: C454
  - Baseline 2: G434
  - Equipment (Comparison) 2: G454

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the

first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

Baseline 1: C435
Equipment (Comparison) 1: C455
Baseline 2: G435
Equipment (Comparison) 2: G455

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C436
  Equipment (Comparison) 1: C456
  Baseline 2: G436
  Equipment (Comparison) 2: G456

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C437
  Equipment (Comparison) 1: C457
  Baseline 2: G437
  Equipment (Comparison) 2: G457

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

  Baseline 1: C438
  Equipment (Comparison) 1: C458
  Baseline 2: G438
  Equipment (Comparison) 2: G458

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)

  Baseline 1: C439
  Equipment (Comparison) 1: C459
  Baseline 2: G439
  Equipment (Comparison) 2: G459

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)

Baseline 1: C440
Equipment (Comparison) 1: C460
Baseline 2: G440
Equipment (Comparison) 2: G460

7. Metal-Working Worksheet

7.1 Machining Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C17
  Equipment (Comparison) 1: C64
  Baseline 2: G17
  Equipment (Comparison) 2: G64

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C18
  Equipment (Comparison) 1: C65
  Baseline 2: G18
  Equipment (Comparison) 2: G65

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C19
  Equipment (Comparison) 1: C66
  Baseline 2: G19
  Equipment (Comparison) 2: G66

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  - Baseline 1: C20
  - Equipment (Comparison) 1: C67
  - Baseline 2: G20
  - Equipment (Comparison) 2: G67

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C21
  - Equipment (Comparison) 1: C68
  - Baseline 2: G21
  - Equipment (Comparison) 2: G68

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C22
  - Equipment (Comparison) 1: C69
  - Baseline 2: G22
  - Equipment (Comparison) 2: G69

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  - Baseline 1: C23
  - Equipment (Comparison) 1: C70
  - Baseline 2: G23
  - Equipment (Comparison) 2: G70

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  - Baseline 1: C24
  - Equipment (Comparison) 1: C71
  - Baseline 2: G24
  - Equipment (Comparison) 2: G71

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

Baseline 1: C25
Equipment (Comparison) 1: C72
Baseline 2: G25
Equipment (Comparison) 2: G72

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C26
  Equipment (Comparison) 1: C73
  Baseline 2: G26
  Equipment (Comparison) 2: G73

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C27
  Equipment (Comparison) 1: C74
  Baseline 2: G27
  Equipment (Comparison) 2: G74

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C28
  Equipment (Comparison) 1: C75
  Baseline 2: G28
  Equipment (Comparison) 2: G75

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

  Baseline 1: C29
  Equipment (Comparison) 1: C76
  Baseline 2: G29
  Equipment (Comparison) 2: G76

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C30
  Equipment (Comparison) 1: C77
  Baseline 2: G30
  Equipment (Comparison) 2: G77

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C31
  Equipment (Comparison) 1: C78
  Baseline 2: G31
  Equipment (Comparison) 2: G78

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C33
  Equipment (Comparison) 1: C80
  Baseline 2: G33
  Equipment (Comparison) 2: G80

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C34
  Equipment (Comparison) 1: C81
  Baseline 2: G34
  Equipment (Comparison) 2: G81

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C35
  Equipment (Comparison) 1: C82
  Baseline 2: G35
  Equipment (Comparison) 2: G82

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C36
  Equipment (Comparison) 1: C83
  Baseline 2: G36
  Equipment (Comparison) 2: G83

- **Energy**
  - Enter average monthly electricity used by equipment in kWh
  Baseline 1: C39

Equipment (Comparison) 1: C86
Baseline 2: G39
Equipment (Comparison) 2: G86

- Enter average monthly natural gas used by equipment in thousand cubic feet

Baseline 1: C40
Equipment (Comparison) 1: C87
Baseline 2: G40
Equipment (Comparison) 2: G87

- Enter average monthly water used by equipment in HCFs

Baseline 1: C41
Equipment (Comparison) 1: C88
Baseline 2: G41
Equipment (Comparison) 2: G88

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

Baseline 1: C45
Equipment (Comparison) 1: C92
Baseline 2: G45
Equipment (Comparison) 2: G92

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C93
Equipment (Comparison) 2: G93

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C46
Equipment (Comparison) 1: C94
Baseline 2: G46
Equipment (Comparison) 2: G94

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C95
Equipment (Comparison) 2: G95

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C47
Equipment (Comparison) 1: C96
Baseline 2: G47
Equipment (Comparison) 2: G96

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C97
Equipment (Comparison) 2: G97

- **Chemicals**
  - Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C49
Equipment (Comparison) 1: C99
Baseline 2: G49
Equipment (Comparison) 2: G99

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C100
Equipment (Comparison) 2: G100

  - Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C50
Equipment (Comparison) 1: C101
Baseline 2: G50
Equipment (Comparison) 2: G101

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C102
Equipment (Comparison) 2: G102

  - Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C51
Equipment (Comparison) 1: C103
Baseline 2: G51
Equipment (Comparison) 2: G103

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C104
Equipment (Comparison) 2: G104

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

Baseline 1: C52
Equipment (Comparison) 1: C105
Baseline 2: G52
Equipment (Comparison) 2: G105

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C53
  Equipment (Comparison) 1: C106
  Baseline 2: G53
  Equipment (Comparison) 2: G106

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C54
  Equipment (Comparison) 1: C107
  Baseline 2: G54
  Equipment (Comparison) 2: G107

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C56
  Equipment (Comparison) 1: C109
  Baseline 2: G56
  Equipment (Comparison) 2: G109

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C57
  Equipment (Comparison) 1: C110
  Baseline 2: G57
  Equipment (Comparison) 2: G10

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C58
  Equipment (Comparison) 1: C111

Baseline 2: G58
Equipment (Comparison) 2: G111

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C59
  Equipment (Comparison) 1: C112
  Baseline 2: G59
  Equipment (Comparison) 2: G112

7.2 Shaping Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C118
  Equipment (Comparison) 1: C165
  Baseline 2: G118
  Equipment (Comparison) 2: G165

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  Baseline 1: C119
  Equipment (Comparison) 1: C166
  Baseline 2: G119
  Equipment (Comparison) 2: G166

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next

cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

Baseline 1: C120
Equipment (Comparison) 1: C167
Baseline 2: G120
Equipment (Comparison) 2: G167

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

  Baseline 1: C121
  Equipment (Comparison) 1: C168
  Baseline 2: G121
  Equipment (Comparison) 2: G168

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

  Baseline 1: C122
  Equipment (Comparison) 1: C169
  Baseline 2: G122
  Equipment (Comparison) 2: G169

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes

  Baseline 1: C123
  Equipment (Comparison) 1: C170
  Baseline 2: G123
  Equipment (Comparison) 2: G170

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")

  Baseline 1: C124
  Equipment (Comparison) 1: C171
  Baseline 2: G124
  Equipment (Comparison) 2: G171

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)

  Baseline 1: C125

Equipment (Comparison) 1: C172
Baseline 2: G125
Equipment (Comparison) 2: G172

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C126
  Equipment (Comparison) 1: C173
  Baseline 2: G126
  Equipment (Comparison) 2: G173

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C127
  Equipment (Comparison) 1: C174
  Baseline 2: G127
  Equipment (Comparison) 2: G174

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C128
  Equipment (Comparison) 1: C175
  Baseline 2: G128
  Equipment (Comparison) 2: G175

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C129
  Equipment (Comparison) 1: C176
  Baseline 2: G129
  Equipment (Comparison) 2: G176

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

Baseline 1: C130
Equipment (Comparison) 1: C177
Baseline 2: G130
Equipment (Comparison) 2: G177

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C131
  Equipment (Comparison) 1: C178
  Baseline 2: G131
  Equipment (Comparison) 2: G178

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C132
  Equipment (Comparison) 1: C179
  Baseline 2: G132
  Equipment (Comparison) 2: G179

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C134
  Equipment (Comparison) 1: C181
  Baseline 2: G134
  Equipment (Comparison) 2: G181

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C135
  Equipment (Comparison) 1: C182
  Baseline 2: G135
  Equipment (Comparison) 2: G182

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C136
  Equipment (Comparison) 1: C183
  Baseline 2: G136
  Equipment (Comparison) 2: G183

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C137
  Equipment (Comparison) 1: C184
  Baseline 2: G137

Equipment (Comparison) 2: G184

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

Baseline 1: C140
Equipment (Comparison) 1: C187
Baseline 2: G140
Equipment (Comparison) 2: G187

  - Enter average monthly natural gas used by equipment in thousand cubic feet

Baseline 1: C141
Equipment (Comparison) 1: C188
Baseline 2: G141
Equipment (Comparison) 2: G188

- Enter average monthly water used by equipment in HCFs

Baseline 1: C142
Equipment (Comparison) 1: C189
Baseline 2: G142
Equipment (Comparison) 2: G189

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

Baseline 1: C146
Equipment (Comparison) 1: C193
Baseline 2: G146
Equipment (Comparison) 2: G193

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C194
Equipment (Comparison) 2: G194

  - Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C147
Equipment (Comparison) 1: C195
Baseline 2: G147
Equipment (Comparison) 2: G195

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C196
Equipment (Comparison) 2: G196

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C148
Equipment (Comparison) 1: C197
Baseline 2: G148
Equipment (Comparison) 2: G197

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C198
Equipment (Comparison) 2: G198

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C150
Equipment (Comparison) 1: C200
Baseline 2: G150
Equipment (Comparison) 2: G200

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C201
Equipment (Comparison) 2: G201

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C151
Equipment (Comparison) 1: C202
Baseline 2: G151
Equipment (Comparison) 2: G202

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C203
Equipment (Comparison) 2: G203

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C152
Equipment (Comparison) 1: C204
Baseline 2: G152
Equipment (Comparison) 2: G204

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C205
Equipment (Comparison) 2: G205

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C153
  Equipment (Comparison) 1: C206
  Baseline 2: G153
  Equipment (Comparison) 2: G206

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C154
  Equipment (Comparison) 1: C207
  Baseline 2: G154
  Equipment (Comparison) 2: G207

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C155
  Equipment (Comparison) 1: C208
  Baseline 2: G155
  Equipment (Comparison) 2: G208

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C157
  Equipment (Comparison) 1: C210
  Baseline 2: G157
  Equipment (Comparison) 2: G210

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C158
  Equipment (Comparison) 1: C211
  Baseline 2: G158
  Equipment (Comparison) 2: G211

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model*

(e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.

Baseline 1: C159
Equipment (Comparison) 1: C212
Baseline 2: G159
Equipment (Comparison) 2: G212

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

Baseline 1: C160
Equipment (Comparison) 1: C213
Baseline 2: G160
Equipment (Comparison) 2: G213

7.3 Heat Treat Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C219
Equipment (Comparison) 1: C266
Baseline 2: G219
Equipment (Comparison) 2: G266

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

Baseline 1: C220
Equipment (Comparison) 1: C267
Baseline 2: G220

Equipment (Comparison) 2: G267

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  Baseline 1: C221
  Equipment (Comparison) 1: C268
  Baseline 2: G221
  Equipment (Comparison) 2: G268

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C222
  Equipment (Comparison) 1: C269
  Baseline 2: G222
  Equipment (Comparison) 2: G269

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C223
  Equipment (Comparison) 1: C270
  Baseline 2: G223
  Equipment (Comparison) 2: G270

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C224
  Equipment (Comparison) 1: C271
  Baseline 2: G224
  Equipment (Comparison) 2: G271

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C225
  Equipment (Comparison) 1: C272
  Baseline 2: G225
  Equipment (Comparison) 2: G272

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  - Baseline 1: C226
  - Equipment (Comparison) 1: C273
  - Baseline 2: G226
  - Equipment (Comparison) 2: G273

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  - Baseline 1: C227
  - Equipment (Comparison) 1: C274
  - Baseline 2: G227
  - Equipment (Comparison) 2: G274

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  - Baseline 1: C228
  - Equipment (Comparison) 1: C275
  - Baseline 2: G228
  - Equipment (Comparison) 2: G275

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  - Baseline 1: C229
  - Equipment (Comparison) 1: C276
  - Baseline 2: G229
  - Equipment (Comparison) 2: G276

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  - Baseline 1: C230
  - Equipment (Comparison) 1: C277
  - Baseline 2: G230
  - Equipment (Comparison) 2: G277

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  - Baseline 1: C231
  - Equipment (Comparison) 1: C278
  - Baseline 2: G231
  - Equipment (Comparison) 2: G278

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  - Baseline 1: C232
  - Equipment (Comparison) 1: C279
  - Baseline 2: G232
  - Equipment (Comparison) 2: G279

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  - Baseline 1: C233
  - Equipment (Comparison) 1: C280
  - Baseline 2: G233
  - Equipment (Comparison) 2: G280

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  - Baseline 1: C235
  - Equipment (Comparison) 1: C282
  - Baseline 2: G235
  - Equipment (Comparison) 2: G282

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  - Baseline 1: C236
  - Equipment (Comparison) 1: C283
  - Baseline 2: G236
  - Equipment (Comparison) 2: G283

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  - Baseline 1: C237
  - Equipment (Comparison) 1: C284
  - Baseline 2: G237
  - Equipment (Comparison) 2: G284

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C238
  Equipment (Comparison) 1: C285
  Baseline 2: G238
  Equipment (Comparison) 2: G285

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C241
  Equipment (Comparison) 1: C288
  Baseline 2: G241
  Equipment (Comparison) 2: G288

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C242
  Equipment (Comparison) 1: C289
  Baseline 2: G242
  Equipment (Comparison) 2: G289

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C243
  Equipment (Comparison) 1: C290
  Baseline 2: G243
  Equipment (Comparison) 2: G290

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

  Baseline 1: C247
  Equipment (Comparison) 1: C294
  Baseline 2: G247
  Equipment (Comparison) 2: G294

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C295
  Equipment (Comparison) 2: G295

  - Enter amount of Steel used by each unit of equipment (lbs.)

  Baseline 1: C248
  Equipment (Comparison) 1: C296
  Baseline 2: G248
  Equipment (Comparison) 2: G296

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C297
Equipment (Comparison) 2: G297

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C249
Equipment (Comparison) 1: C298
Baseline 2: G249
Equipment (Comparison) 2: G298

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C299
Equipment (Comparison) 2: G299

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C251
Equipment (Comparison) 1: C301
Baseline 2: G251
Equipment (Comparison) 2: G301

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C302
Equipment (Comparison) 2: G302

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C252
Equipment (Comparison) 1: C303
Baseline 2: G252
Equipment (Comparison) 2: G303

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C304
Equipment (Comparison) 2: G304

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C253
Equipment (Comparison) 1: C305

Baseline 2: G253
Equipment (Comparison) 2: G305

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C306
Equipment (Comparison) 2: G306

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C254
  Equipment (Comparison) 1: C307
  Baseline 2: G254
  Equipment (Comparison) 2: G307

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C255
  Equipment (Comparison) 1: C308
  Baseline 2: G255
  Equipment (Comparison) 2: G308

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C256
  Equipment (Comparison) 1: C309
  Baseline 2: G256
  Equipment (Comparison) 2: G309

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C258
  Equipment (Comparison) 1: C311
  Baseline 2: G258
  Equipment (Comparison) 2: G311

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C259

Equipment (Comparison) 1: C312
Baseline 2: G259
Equipment (Comparison) 2: G312

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.

  Baseline 1: C260
  Equipment (Comparison) 1: C313
  Baseline 2: G260
  Equipment (Comparison) 2: G313

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

  Baseline 1: C261
  Equipment (Comparison) 1: C314
  Baseline 2: G261
  Equipment (Comparison) 2: G314

7.4 Other Metal Working Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C320
  Equipment (Comparison) 1: C367
  Baseline 2: G320
  Equipment (Comparison) 2: G367

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  - Baseline 1: C321
  - Equipment (Comparison) 1: C368
  - Baseline 2: G321
  - Equipment (Comparison) 2: G368

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  - Baseline 1: C322
  - Equipment (Comparison) 1: C369
  - Baseline 2: G322
  - Equipment (Comparison) 2: G369

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  - Baseline 1: C323
  - Equipment (Comparison) 1: C370
  - Baseline 2: G323
  - Equipment (Comparison) 2: G370

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C324
  - Equipment (Comparison) 1: C371
  - Baseline 2: G324
  - Equipment (Comparison) 2: G371

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C325
  - Equipment (Comparison) 1: C372
  - Baseline 2: G325
  - Equipment (Comparison) 2: G372

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")

Baseline 1: C326
Equipment (Comparison) 1: C373
Baseline 2: G326
Equipment (Comparison) 2: G373

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C327
  Equipment (Comparison) 1: C374
  Baseline 2: G327
  Equipment (Comparison) 2: G374

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C328
  Equipment (Comparison) 1: C375
  Baseline 2: G328
  Equipment (Comparison) 2: G375

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C329
  Equipment (Comparison) 1: C376
  Baseline 2: G329
  Equipment (Comparison) 2: G376

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C330
  Equipment (Comparison) 1: C377
  Baseline 2: G330
  Equipment (Comparison) 2: G377

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the

first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

Baseline 1: C331
Equipment (Comparison) 1: C378
Baseline 2: G331
Equipment (Comparison) 2: G378

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

  Baseline 1: C332
  Equipment (Comparison) 1: C379
  Baseline 2: G332
  Equipment (Comparison) 2: G379

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)

  Baseline 1: C333
  Equipment (Comparison) 1: C380
  Baseline 2: G333
  Equipment (Comparison) 2: G380

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)

  Baseline 1: C334
  Equipment (Comparison) 1: C381
  Baseline 2: G334
  Equipment (Comparison) 2: G381

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage

  Baseline 1: C336
  Equipment (Comparison) 1: C383
  Baseline 2: G336
  Equipment (Comparison) 2: G383

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage

  Baseline 1: C337
  Equipment (Comparison) 1: C384
  Baseline 2: G337
  Equipment (Comparison) 2: G384

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C338
  Equipment (Comparison) 1: C385
  Baseline 2: G338
  Equipment (Comparison) 2: G385

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C339
  Equipment (Comparison) 1: C386
  Baseline 2: G339
  Equipment (Comparison) 2: G386

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C342
  Equipment (Comparison) 1: C389
  Baseline 2: G342
  Equipment (Comparison) 2: G389

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C343
  Equipment (Comparison) 1: C390
  Baseline 2: G343
  Equipment (Comparison) 2: G390

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C344
  Equipment (Comparison) 1: C391
  Baseline 2: G344
  Equipment (Comparison) 2: G391

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

  Baseline 1: C348
  Equipment (Comparison) 1: C395
  Baseline 2: G348
  Equipment (Comparison) 2: G395

  - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C396
  Equipment (Comparison) 2: G396

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C349
Equipment (Comparison) 1: C397
Baseline 2: G349
Equipment (Comparison) 2: G397

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C398
Equipment (Comparison) 2: G398

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C350
Equipment (Comparison) 1: C399
Baseline 2: G350
Equipment (Comparison) 2: G399

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C400
Equipment (Comparison) 2: G400

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C352
Equipment (Comparison) 1: C402
Baseline 2: G352
Equipment (Comparison) 2: G402

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C403
Equipment (Comparison) 2: G403

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C353
Equipment (Comparison) 1: C404
Baseline 2: G353
Equipment (Comparison) 2: G404

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C405
Equipment (Comparison) 2: G405

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C354
Equipment (Comparison) 1: C406
Baseline 2: G354
Equipment (Comparison) 2: G406

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C407
Equipment (Comparison) 2: G407

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C355
  Equipment (Comparison) 1: C408
  Baseline 2: G355
  Equipment (Comparison) 2: G408

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C356
  Equipment (Comparison) 1: C409
  Baseline 2: G356
  Equipment (Comparison) 2: G409

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C357
  Equipment (Comparison) 1: C410
  Baseline 2: G357
  Equipment (Comparison) 2: G410

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C359
  Equipment (Comparison) 1: C412
  Baseline 2: G359
  Equipment (Comparison) 2: G412

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C360
  Equipment (Comparison) 1: C413
  Baseline 2: G360
  Equipment (Comparison) 2: G413

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C361
  Equipment (Comparison) 1: C414
  Baseline 2: G361
  Equipment (Comparison) 2: G414

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C362
  Equipment (Comparison) 1: C415
  Baseline 2: G362
  Equipment (Comparison) 2: G415

7.5 Metal Working Onsite Storage Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario

- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C421
Equipment (Comparison) 1: C455
Baseline 2: G421
Equipment (Comparison) 2: G455

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  Baseline 1: C422
  Equipment (Comparison) 1: C456
  Baseline 2: G422
  Equipment (Comparison) 2: G456

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  Baseline 1: C423
  Equipment (Comparison) 1: C457
  Baseline 2: G423
  Equipment (Comparison) 2: G457

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C424
  Equipment (Comparison) 1: C458
  Baseline 2: G424
  Equipment (Comparison) 2: G458

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C425
  Equipment (Comparison) 1: C459
  Baseline 2: G425
  Equipment (Comparison) 2: G459

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C426
  Equipment (Comparison) 1: C460
  Baseline 2: G426

Equipment (Comparison) 2: G460

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C427
  Equipment (Comparison) 1: C461
  Baseline 2: G427
  Equipment (Comparison) 2: G461

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C428
  Equipment (Comparison) 1: C462
  Baseline 2: G428
  Equipment (Comparison) 2: G462

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C429
  Equipment (Comparison) 1: C463
  Baseline 2: G429
  Equipment (Comparison) 2: G463

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C430
  Equipment (Comparison) 1: C464
  Baseline 2: G430
  Equipment (Comparison) 2: G464

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C431
  Equipment (Comparison) 1: C465
  Baseline 2: G431

Equipment (Comparison) 2: G465

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C432
  Equipment (Comparison) 1: C466
  Baseline 2: G432
  Equipment (Comparison) 2: G466

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C433
  Equipment (Comparison) 1: C467
  Baseline 2: G433
  Equipment (Comparison) 2: G467

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C434
  Equipment (Comparison) 1: C468
  Baseline 2: G434
  Equipment (Comparison) 2: G468

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C435
  Equipment (Comparison) 1: C469
  Baseline 2: G435
  Equipment (Comparison) 2: G469

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C437
  Equipment (Comparison) 1: C471
  Baseline 2: G437
  Equipment (Comparison) 2: G471

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage

Baseline 1: C438
Equipment (Comparison) 1: C472
Baseline 2: G438
Equipment (Comparison) 2: G472

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C439
  Equipment (Comparison) 1: C473
  Baseline 2: G439
  Equipment (Comparison) 2: G473

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C440
  Equipment (Comparison) 1: C474
  Baseline 2: G440
  Equipment (Comparison) 2: G474

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C443
  Equipment (Comparison) 1: C477
  Baseline 2: G443
  Equipment (Comparison) 2: G477

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C444
  Equipment (Comparison) 1: C478
  Baseline 2: G444
  Equipment (Comparison) 2: G478

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C445
  Equipment (Comparison) 1: C479
  Baseline 2: G445
  Equipment (Comparison) 2: G479

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C447
  Equipment (Comparison) 1: C481
  Baseline 2: G447

Equipment (Comparison) 2: G481

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C448
  Equipment (Comparison) 1: C482
  Baseline 2: G448
  Equipment (Comparison) 2: G482

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C449
  Equipment (Comparison) 1: C483
  Baseline 2: G449
  Equipment (Comparison) 2: G483

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C450
  Equipment (Comparison) 1: C484
  Baseline 2: G450
  Equipment (Comparison) 2: G484

7.6 Used Equipment Sales

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison

scenario with new equipment – you would select yes to include these modules in the baseline scenario

- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C490
Equipment (Comparison) 1: C510
Baseline 2: G490
Equipment (Comparison) 2: G510

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  Baseline 1: C491
  Equipment (Comparison) 1: C511
  Baseline 2: G491
  Equipment (Comparison) 2: G511

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  Baseline 1: C492
  Equipment (Comparison) 1: C512
  Baseline 2: G492
  Equipment (Comparison) 2: G512

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C493
  Equipment (Comparison) 1: C513
  Baseline 2: G493
  Equipment (Comparison) 2: G513

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C494
  Equipment (Comparison) 1: C514
  Baseline 2: G494
  Equipment (Comparison) 2: G514

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C495

Equipment (Comparison) 1: C515
Baseline 2: G495
Equipment (Comparison) 2: G515

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C496
  Equipment (Comparison) 1: C516
  Baseline 2: G496
  Equipment (Comparison) 2: G516

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C497
  Equipment (Comparison) 1: C517
  Baseline 2: G497
  Equipment (Comparison) 2: G517

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C498
  Equipment (Comparison) 1: C518
  Baseline 2: G498
  Equipment (Comparison) 2: G518

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C499
  Equipment (Comparison) 1: C519
  Baseline 2: G499
  Equipment (Comparison) 2: G519

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C500

Equipment (Comparison) 1: C520
Baseline 2: G500
Equipment (Comparison) 2: G520

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C501
  Equipment (Comparison) 1: C521
  Baseline 2: G501
  Equipment (Comparison) 2: G521

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C502
  Equipment (Comparison) 1: C522
  Baseline 2: G502
  Equipment (Comparison) 2: G522

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C503
  Equipment (Comparison) 1: C523
  Baseline 2: G503
  Equipment (Comparison) 2: G523

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C504
  Equipment (Comparison) 1: C524
  Baseline 2: G504
  Equipment (Comparison) 2: G524

8. Surface Finishing Input

8.1 Equipment Set 1

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and

comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).

- For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
  - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C16
Equipment (Comparison) 1: C63
Baseline 2: G16
Equipment (Comparison) 2: G63

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

Baseline 1: C17
Equipment (Comparison) 1: C64
Baseline 2: G17
Equipment (Comparison) 2: G64

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

Baseline 1: C18
Equipment (Comparison) 1: C65
Baseline 2: G18
Equipment (Comparison) 2: G65

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

Baseline 1: C19
Equipment (Comparison) 1: C66
Baseline 2: G19
Equipment (Comparison) 2: G66

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C20
  - Equipment (Comparison) 1: C67
  - Baseline 2: G20
  - Equipment (Comparison) 2: G67

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C21
  - Equipment (Comparison) 1: C68
  - Baseline 2: G21
  - Equipment (Comparison) 2: G68

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  - Baseline 1: C22
  - Equipment (Comparison) 1: C69
  - Baseline 2: G22
  - Equipment (Comparison) 2: G69

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  - Baseline 1: C23
  - Equipment (Comparison) 1: C70
  - Baseline 2: G23
  - Equipment (Comparison) 2: G70

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  - Baseline 1: C24
  - Equipment (Comparison) 1: C71
  - Baseline 2: G24
  - Equipment (Comparison) 2: G71

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the

first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
Baseline 1: C25
Equipment (Comparison) 1: C72
Baseline 2: G25
Equipment (Comparison) 2: G72

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C26
  Equipment (Comparison) 1: C73
  Baseline 2: G26
  Equipment (Comparison) 2: G73

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C27
  Equipment (Comparison) 1: C74
  Baseline 2: G27
  Equipment (Comparison) 2: G74

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C28
  Equipment (Comparison) 1: C75
  Baseline 2: G28
  Equipment (Comparison) 2: G75

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C29
  Equipment (Comparison) 1: C76
  Baseline 2: G29
  Equipment (Comparison) 2: G76

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)

Baseline 1: C30
Equipment (Comparison) 1: C77
Baseline 2: G30
Equipment (Comparison) 2: G77

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C32
  Equipment (Comparison) 1: C79
  Baseline 2: G32
  Equipment (Comparison) 2: G79

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C33
  Equipment (Comparison) 1: C80
  Baseline 2: G33
  Equipment (Comparison) 2: G80

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C34
  Equipment (Comparison) 1: C81
  Baseline 2: G34
  Equipment (Comparison) 2: G81

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C35
  Equipment (Comparison) 1: C82
  Baseline 2: G35
  Equipment (Comparison) 2: G82

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C38
  Equipment (Comparison) 1: C85
  Baseline 2: G38
  Equipment (Comparison) 2: G85

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C39
  Equipment (Comparison) 1: C86
  Baseline 2: G39
  Equipment (Comparison) 2: G86

- Enter average monthly water used by equipment in HCFs

Baseline 1: C40
Equipment (Comparison) 1: C87
Baseline 2: G40
Equipment (Comparison) 2: G87

Materials (Metals)

- Enter amount of Iron used by each unit of equipment (lbs.)

Baseline 1: C44
Equipment (Comparison) 1: C91
Baseline 2: G44
Equipment (Comparison) 2: G91

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C92
Equipment (Comparison) 2: G92

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C45
Equipment (Comparison) 1: C93
Baseline 2: G45
Equipment (Comparison) 2: G93

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C94
Equipment (Comparison) 2: G94

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C46
Equipment (Comparison) 1: C95
Baseline 2: G46
Equipment (Comparison) 2: G95

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C96
Equipment (Comparison) 2: G96

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C48
Equipment (Comparison) 1: C98

Baseline 2: G48
Equipment (Comparison) 2: G98

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C99
Equipment (Comparison) 2: G99

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C49
Equipment (Comparison) 1: C100
Baseline 2: G49
Equipment (Comparison) 2: G100

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C101
Equipment (Comparison) 2: G101

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C50
Equipment (Comparison) 1: C102
Baseline 2: G50
Equipment (Comparison) 2: G102

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C103
Equipment (Comparison) 2: G103

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

Baseline 1: C51
Equipment (Comparison) 1: C104
Baseline 2: G51
Equipment (Comparison) 2: G104

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons

Baseline 1: C52
Equipment (Comparison) 1: C105
Baseline 2: G52
Equipment (Comparison) 2: G105

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C53
  Equipment (Comparison) 1: C106
  Baseline 2: G53
  Equipment (Comparison) 2: G106

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C55
  Equipment (Comparison) 1: C108
  Baseline 2: G55
  Equipment (Comparison) 2: G108

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C56
  Equipment (Comparison) 1: C109
  Baseline 2: G56
  Equipment (Comparison) 2: G109

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C57
  Equipment (Comparison) 1: C110
  Baseline 2: G57
  Equipment (Comparison) 2: G110

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C58
  Equipment (Comparison) 1: C111
  Baseline 2: G58

Equipment (Comparison) 2: G111

8.2 Equipment Set 2

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C117
  Equipment (Comparison) 1: C164
  Baseline 2: G117
  Equipment (Comparison) 2: G164

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C118
  Equipment (Comparison) 1: C165
  Baseline 2: G118
  Equipment (Comparison) 2: G165

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C119
  Equipment (Comparison) 1: C166
  Baseline 2: G119
  Equipment (Comparison) 2: G166

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

Baseline 1: C120
Equipment (Comparison) 1: C167
Baseline 2: G120
Equipment (Comparison) 2: G167

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C121
  Equipment (Comparison) 1: C168
  Baseline 2: G121
  Equipment (Comparison) 2: G168

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C122
  Equipment (Comparison) 1: C169
  Baseline 2: G122
  Equipment (Comparison) 2: G169

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C123
  Equipment (Comparison) 1: C170
  Baseline 2: G123
  Equipment (Comparison) 2: G170

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C124
  Equipment (Comparison) 1: C171
  Baseline 2: G124
  Equipment (Comparison) 2: G171

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C125
  Equipment (Comparison) 1: C172
  Baseline 2: G125
  Equipment (Comparison) 2: G172

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C126
  Equipment (Comparison) 1: C173
  Baseline 2: G126
  Equipment (Comparison) 2: G173

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C127
  Equipment (Comparison) 1: C174
  Baseline 2: G127
  Equipment (Comparison) 2: G174

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C128
  Equipment (Comparison) 1: C175
  Baseline 2: G128
  Equipment (Comparison) 2: G175

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C129
  Equipment (Comparison) 1: C176
  Baseline 2: G129
  Equipment (Comparison) 2: G176

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C130
  Equipment (Comparison) 1: C177
  Baseline 2: G130
  Equipment (Comparison) 2: G177

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C131
  Equipment (Comparison) 1: C178
  Baseline 2: G131
  Equipment (Comparison) 2: G178

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C133
  Equipment (Comparison) 1: C180
  Baseline 2: G133
  Equipment (Comparison) 2: G180

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C134
  Equipment (Comparison) 1: C181
  Baseline 2: G134
  Equipment (Comparison) 2: G181

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C135
  Equipment (Comparison) 1: C182
  Baseline 2: G135
  Equipment (Comparison) 2: G182

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C136
  Equipment (Comparison) 1: C183
  Baseline 2: G136
  Equipment (Comparison) 2: G183

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C139
  Equipment (Comparison) 1: C186
  Baseline 2: G139
  Equipment (Comparison) 2: G186

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C140
  Equipment (Comparison) 1: C187

Baseline 2: G140
Equipment (Comparison) 2: G187

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C141
  Equipment (Comparison) 1: C188
  Baseline 2: G141
  Equipment (Comparison) 2: G188

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

  Baseline 1: C145
  Equipment (Comparison) 1: C192
  Baseline 2: G145
  Equipment (Comparison) 2: G192

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

    Equipment (Comparison) 1: C193
    Equipment (Comparison) 2: G193

  - Enter amount of Steel used by each unit of equipment (lbs.)

  Baseline 1: C146
  Equipment (Comparison) 1: C194
  Baseline 2: G146
  Equipment (Comparison) 2: G194

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

    Equipment (Comparison) 1: C195
    Equipment (Comparison) 2: G195

  - Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

  Baseline 1: C147
  Equipment (Comparison) 1: C196
  Baseline 2: G147
  Equipment (Comparison) 2: G196

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

    Equipment (Comparison) 1: C197
    Equipment (Comparison) 2: G197

- **Chemicals**
  - Enter amount of organic solvent used for equipment (gallons or lbs.)

  Baseline 1: C149
  Equipment (Comparison) 1: C199
  Baseline 2: G149
  Equipment (Comparison) 2: G199

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C200
  Equipment (Comparison) 2: G200

  - Enter amount of coolant used for equipment (gallons or lbs.)

  Baseline 1: C150
  Equipment (Comparison) 1: C201
  Baseline 2: G150
  Equipment (Comparison) 2: G201

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C202
  Equipment (Comparison) 2: G202

  - Enter amount of other chemical used for equipment (gallons or lbs.)

  Baseline 1: C151
  Equipment (Comparison) 1: C203
  Baseline 2: G151
  Equipment (Comparison) 2: G203

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C204
  Equipment (Comparison) 2: G204

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

  Baseline 1: C152
  Equipment (Comparison) 1: C205
  Baseline 2: G152
  Equipment (Comparison) 2: G205

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons

Baseline 1: C153
Equipment (Comparison) 1: C206
Baseline 2: G153
Equipment (Comparison) 2: G206

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C154
  Equipment (Comparison) 1: C207
  Baseline 2: G154
  Equipment (Comparison) 2: G207

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C156
  Equipment (Comparison) 1: C209
  Baseline 2: G156
  Equipment (Comparison) 2: G209

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C157
  Equipment (Comparison) 1: C210
  Baseline 2: G157
  Equipment (Comparison) 2: G210

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C158
  Equipment (Comparison) 1: C211
  Baseline 2: G158
  Equipment (Comparison) 2: G211

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not

readily available you should develop a mechanism for attributing clean-up costs to different activities.

Baseline 1: C159
Equipment (Comparison) 1: C212
Baseline 2: G159
Equipment (Comparison) 2: G212

8.3 Equipment Set 3

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C218
  Equipment (Comparison) 1: C265
  Baseline 2: G218
  Equipment (Comparison) 2: G265

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C219
  Equipment (Comparison) 1: C266
  Baseline 2: G219
  Equipment (Comparison) 2: G266

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C220
  Equipment (Comparison) 1: C267
  Baseline 2: G220
  Equipment (Comparison) 2: G267

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  - Baseline 1: C221
  - Equipment (Comparison) 1: C268
  - Baseline 2: G221
  - Equipment (Comparison) 2: G268

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C222
  - Equipment (Comparison) 1: C269
  - Baseline 2: G222
  - Equipment (Comparison) 2: G269

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C223
  - Equipment (Comparison) 1: C270
  - Baseline 2: G223
  - Equipment (Comparison) 2: G270

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  - Baseline 1: C224
  - Equipment (Comparison) 1: C271
  - Baseline 2: G224
  - Equipment (Comparison) 2: G271

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  - Baseline 1: C225
  - Equipment (Comparison) 1: C272
  - Baseline 2: G225
  - Equipment (Comparison) 2: G272

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

Baseline 1: C226
Equipment (Comparison) 1: C273
Baseline 2: G226
Equipment (Comparison) 2: G273

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C227
  Equipment (Comparison) 1: C274
  Baseline 2: G227
  Equipment (Comparison) 2: G274

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C228
  Equipment (Comparison) 1: C275
  Baseline 2: G228
  Equipment (Comparison) 2: G275

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C229
  Equipment (Comparison) 1: C276
  Baseline 2: G229
  Equipment (Comparison) 2: G276

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C230
  Equipment (Comparison) 1: C277
  Baseline 2: G230
  Equipment (Comparison) 2: G277

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C231
  Equipment (Comparison) 1: C278
  Baseline 2: G231
  Equipment (Comparison) 2: G278

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C232
  Equipment (Comparison) 1: C279
  Baseline 2: G232
  Equipment (Comparison) 2: G279

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C234
  Equipment (Comparison) 1: C281
  Baseline 2: G234
  Equipment (Comparison) 2: G281

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C235
  Equipment (Comparison) 1: C282
  Baseline 2: G235
  Equipment (Comparison) 2: G282

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C236
  Equipment (Comparison) 1: C283
  Baseline 2: G236
  Equipment (Comparison) 2: G283

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C237
  Equipment (Comparison) 1: C284
  Baseline 2: G237
  Equipment (Comparison) 2: G284

- **Energy**
  - Enter average monthly electricity used by equipment in kWh
  Baseline 1: C240

Equipment (Comparison) 1: C287
Baseline 2: G240
Equipment (Comparison) 2: G287

- Enter average monthly natural gas used by equipment in thousand cubic feet

Baseline 1: C241
Equipment (Comparison) 1: C288
Baseline 2: G241
Equipment (Comparison) 2: G288

- Enter average monthly water used by equipment in HCFs

Baseline 1: C242
Equipment (Comparison) 1: C289
Baseline 2: G242
Equipment (Comparison) 2: G289

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

Baseline 1: C246
Equipment (Comparison) 1: C293
Baseline 2: G246
Equipment (Comparison) 2: G293

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C294
Equipment (Comparison) 2: G294

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C247
Equipment (Comparison) 1: C295
Baseline 2: G247
Equipment (Comparison) 2: G295

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C296
Equipment (Comparison) 2: G296

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C248
Equipment (Comparison) 1: C297
Baseline 2: G248
Equipment (Comparison) 2: G297

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C298
Equipment (Comparison) 2: G298

- **Chemicals**
  - Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C250
Equipment (Comparison) 1: C300
Baseline 2: G250
Equipment (Comparison) 2: G300

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C301
Equipment (Comparison) 2: G301

  - Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C251
Equipment (Comparison) 1: C302
Baseline 2: G251
Equipment (Comparison) 2: G302

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C303
Equipment (Comparison) 2: G303

  - Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C252
Equipment (Comparison) 1: C304
Baseline 2: G252
Equipment (Comparison) 2: G304

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C305
Equipment (Comparison) 2: G305

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

Baseline 1: C253
Equipment (Comparison) 1: C306
Baseline 2: G253
Equipment (Comparison) 2: G306

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C254
  Equipment (Comparison) 1: C307
  Baseline 2: G254
  Equipment (Comparison) 2: G307

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C255
  Equipment (Comparison) 1: C308
  Baseline 2: G255
  Equipment (Comparison) 2: G308

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C257
  Equipment (Comparison) 1: C310
  Baseline 2: G257
  Equipment (Comparison) 2: G310

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C258
  Equipment (Comparison) 1: C311
  Baseline 2: G258
  Equipment (Comparison) 2: G311

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C259
  Equipment (Comparison) 1: C312

Baseline 2: G259
Equipment (Comparison) 2: G312

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C260
  Equipment (Comparison) 1: C313
  Baseline 2: G260
  Equipment (Comparison) 2: G313

8.4 Onsite Storage Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C319
  Equipment (Comparison) 1: C353
  Baseline 2: G319
  Equipment (Comparison) 2: G353

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  Baseline 1: C320
  Equipment (Comparison) 1: C354
  Baseline 2: G320
  Equipment (Comparison) 2: G354

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next

cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
Baseline 1: C321
Equipment (Comparison) 1: C355
Baseline 2: G321
Equipment (Comparison) 2: G355

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C322
  Equipment (Comparison) 1: C356
  Baseline 2: G322
  Equipment (Comparison) 2: G356

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C323
  Equipment (Comparison) 1: C357
  Baseline 2: G323
  Equipment (Comparison) 2: G357

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C324
  Equipment (Comparison) 1: C358
  Baseline 2: G324
  Equipment (Comparison) 2: G358

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C325
  Equipment (Comparison) 1: C359
  Baseline 2: G325
  Equipment (Comparison) 2: G359

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C326

Equipment (Comparison) 1: C360
Baseline 2: G326
Equipment (Comparison) 2: G360

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C327
  Equipment (Comparison) 1: C361
  Baseline 2: G327
  Equipment (Comparison) 2: G361

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C328
  Equipment (Comparison) 1: C362
  Baseline 2: G328
  Equipment (Comparison) 2: G362

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C329
  Equipment (Comparison) 1: C363
  Baseline 2: G329
  Equipment (Comparison) 2: G363

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C330
  Equipment (Comparison) 1: C364
  Baseline 2: G330
  Equipment (Comparison) 2: G364

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

Baseline 1: C331
Equipment (Comparison) 1: C365
Baseline 2: G331
Equipment (Comparison) 2: G365

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C332
  Equipment (Comparison) 1: C366
  Baseline 2: G332
  Equipment (Comparison) 2: G366

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C333
  Equipment (Comparison) 1: C367
  Baseline 2: G333
  Equipment (Comparison) 2: G367

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C335
  Equipment (Comparison) 1: C369
  Baseline 2: G335
  Equipment (Comparison) 2: G369

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C336
  Equipment (Comparison) 1: C370
  Baseline 2: G336
  Equipment (Comparison) 2: G370

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C337
  Equipment (Comparison) 1: C371
  Baseline 2: G337
  Equipment (Comparison) 2: G371

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C338
  Equipment (Comparison) 1: C372
  Baseline 2: G338

Equipment (Comparison) 2: G372

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C341
  Equipment (Comparison) 1: C375
  Baseline 2: G341
  Equipment (Comparison) 2: G375

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C342
  Equipment (Comparison) 1: C376
  Baseline 2: G342
  Equipment (Comparison) 2: G376

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C343
  Equipment (Comparison) 1: C377
  Baseline 2: G343
  Equipment (Comparison) 2: G377

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C345
  Equipment (Comparison) 1: C379
  Baseline 2: G345
  Equipment (Comparison) 2: G379

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C346
  Equipment (Comparison) 1: C380
  Baseline 2: G346
  Equipment (Comparison) 2: G380

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.

Baseline 1: C347
Equipment (Comparison) 1: C381
Baseline 2: G347
Equipment (Comparison) 2: G381

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

  Baseline 1: C348
  Equipment (Comparison) 1: C382
  Baseline 2: G348
  Equipment (Comparison) 2: G382

8.5 Used Equipment Sales

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C388
  Equipment (Comparison) 1: C408
  Baseline 2: G388
  Equipment (Comparison) 2: G408

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C389
  Equipment (Comparison) 1: C409
  Baseline 2: G389
  Equipment (Comparison) 2: G409

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  - Baseline 1: C390
  - Equipment (Comparison) 1: C410
  - Baseline 2: G390
  - Equipment (Comparison) 2: G410

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  - Baseline 1: C391
  - Equipment (Comparison) 1: C411
  - Baseline 2: G391
  - Equipment (Comparison) 2: G411

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C392
  - Equipment (Comparison) 1: C412
  - Baseline 2: G392
  - Equipment (Comparison) 2: G412

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C393
  - Equipment (Comparison) 1: C413
  - Baseline 2: G393
  - Equipment (Comparison) 2: G413

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  - Baseline 1: C394
  - Equipment (Comparison) 1: C414
  - Baseline 2: G394
  - Equipment (Comparison) 2: G414

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered

in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)

Baseline 1: C395
Equipment (Comparison) 1: C415
Baseline 2: G395
Equipment (Comparison) 2: G415

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C396
  Equipment (Comparison) 1: C416
  Baseline 2: G396
  Equipment (Comparison) 2: G416

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C397
  Equipment (Comparison) 1: C417
  Baseline 2: G397
  Equipment (Comparison) 2: G417

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C398
  Equipment (Comparison) 1: C418
  Baseline 2: G398
  Equipment (Comparison) 2: G418

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C399
  Equipment (Comparison) 1: C419
  Baseline 2: G399
  Equipment (Comparison) 2: G419

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C400
  Equipment (Comparison) 1: C420
  Baseline 2: G400
  Equipment (Comparison) 2: G420

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C401
  Equipment (Comparison) 1: C421
  Baseline 2: G401
  Equipment (Comparison) 2: G421

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C402
  Equipment (Comparison) 1: C422
  Baseline 2: G402
  Equipment (Comparison) 2: G422

9. Component Assembly

9.1 Equipment Set 1

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C16

Equipment (Comparison) 1: C63
Baseline 2: G16
Equipment (Comparison) 2: G63

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  Baseline 1: C17
  Equipment (Comparison) 1: C64
  Baseline 2: G17
  Equipment (Comparison) 2: G64

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  Baseline 1: C18
  Equipment (Comparison) 1: C65
  Baseline 2: G18
  Equipment (Comparison) 2: G65

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C19
  Equipment (Comparison) 1: C66
  Baseline 2: G19
  Equipment (Comparison) 2: G66

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C20
  Equipment (Comparison) 1: C67
  Baseline 2: G20
  Equipment (Comparison) 2: G67

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C21
  Equipment (Comparison) 1: C68
  Baseline 2: G21
  Equipment (Comparison) 2: G68

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if

applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
Baseline 1: C22
Equipment (Comparison) 1: C69
Baseline 2: G22
Equipment (Comparison) 2: G69

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C23
  Equipment (Comparison) 1: C70
  Baseline 2: G23
  Equipment (Comparison) 2: G70

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C24
  Equipment (Comparison) 1: C71
  Baseline 2: G24
  Equipment (Comparison) 2: G71

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C25
  Equipment (Comparison) 1: C72
  Baseline 2: G25
  Equipment (Comparison) 2: G72

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C26
  Equipment (Comparison) 1: C73
  Baseline 2: G26
  Equipment (Comparison) 2: G73

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for

solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

Baseline 1: C27
Equipment (Comparison) 1: C74
Baseline 2: G27
Equipment (Comparison) 2: G74

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

  Baseline 1: C28
  Equipment (Comparison) 1: C75
  Baseline 2: G28
  Equipment (Comparison) 2: G75

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)

  Baseline 1: C29
  Equipment (Comparison) 1: C76
  Baseline 2: G29
  Equipment (Comparison) 2: G76

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)

  Baseline 1: C30
  Equipment (Comparison) 1: C77
  Baseline 2: G30
  Equipment (Comparison) 2: G77

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage

  Baseline 1: C232
  Equipment (Comparison) 1: C79
  Baseline 2: G32
  Equipment (Comparison) 2: G79

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage

  Baseline 1: C33
  Equipment (Comparison) 1: C80
  Baseline 2: G33
  Equipment (Comparison) 2: G80

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C34
  Equipment (Comparison) 1: C81
  Baseline 2: G34
  Equipment (Comparison) 2: G81

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C35
  Equipment (Comparison) 1: C82
  Baseline 2: G35
  Equipment (Comparison) 2: G82

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C38
  Equipment (Comparison) 1: C85
  Baseline 2: G38
  Equipment (Comparison) 2: G85

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C39
  Equipment (Comparison) 1: C86
  Baseline 2: G39
  Equipment (Comparison) 2: G86

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C40
  Equipment (Comparison) 1: C87
  Baseline 2: G40
  Equipment (Comparison) 2: G87

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

  Baseline 1: C44
  Equipment (Comparison) 1: C91
  Baseline 2: G44
  Equipment (Comparison) 2: G91

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C92
  Equipment (Comparison) 2: G92

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C45
Equipment (Comparison) 1: C93
Baseline 2: G45
Equipment (Comparison) 2: G93

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C94
Equipment (Comparison) 2: G94

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C46
Equipment (Comparison) 1: C95
Baseline 2: G46
Equipment (Comparison) 2: G95

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C96
Equipment (Comparison) 2: G96

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C48
Equipment (Comparison) 1: C98
Baseline 2: G48
Equipment (Comparison) 2: G98

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C99
Equipment (Comparison) 2: G99

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C49
Equipment (Comparison) 1: C100
Baseline 2: G49
Equipment (Comparison) 2: G100

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C101
Equipment (Comparison) 2: G101

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C50
Equipment (Comparison) 1: C102
Baseline 2: G50
Equipment (Comparison) 2: G102

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C103
Equipment (Comparison) 2: G103

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C51
  Equipment (Comparison) 1: C104
  Baseline 2: G51
  Equipment (Comparison) 2: G104

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C52
  Equipment (Comparison) 1: C105
  Baseline 2: G52
  Equipment (Comparison) 2: G105

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C53
  Equipment (Comparison) 1: C106
  Baseline 2: G53
  Equipment (Comparison) 2: G106

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C55
  Equipment (Comparison) 1: C108

Baseline 2: G55
Equipment (Comparison) 2: G108

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C56
  Equipment (Comparison) 1: C109
  Baseline 2: G56
  Equipment (Comparison) 2: G109

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C57
  Equipment (Comparison) 1: C110
  Baseline 2: G57
  Equipment (Comparison) 2: G110

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C58
  Equipment (Comparison) 1: C111
  Baseline 2: G58
  Equipment (Comparison) 2: G111

9.2 Equipment Set 2

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison

scenario with new equipment – you would select yes to include these modules in the baseline scenario

- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C117
Equipment (Comparison) 1: C164
Baseline 2: G117
Equipment (Comparison) 2: G164

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  Baseline 1: C118
  Equipment (Comparison) 1: C165
  Baseline 2: G118
  Equipment (Comparison) 2: G165

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  Baseline 1: C119
  Equipment (Comparison) 1: C166
  Baseline 2: G119
  Equipment (Comparison) 2: G166

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C120
  Equipment (Comparison) 1: C167
  Baseline 2: G120
  Equipment (Comparison) 2: G167

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C121
  Equipment (Comparison) 1: C168
  Baseline 2: G121
  Equipment (Comparison) 2: G168

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C122

Equipment (Comparison) 1: C169
Baseline 2: G122
Equipment (Comparison) 2: G169

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C123
  Equipment (Comparison) 1: C170
  Baseline 2: G123
  Equipment (Comparison) 2: G170

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C124
  Equipment (Comparison) 1: C171
  Baseline 2: G124
  Equipment (Comparison) 2: G171

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C125
  Equipment (Comparison) 1: C172
  Baseline 2: G125
  Equipment (Comparison) 2: G172

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C126
  Equipment (Comparison) 1: C173
  Baseline 2: G126
  Equipment (Comparison) 2: G173

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C127

Equipment (Comparison) 1: C174
Baseline 2: G127
Equipment (Comparison) 2: G174

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C128
  Equipment (Comparison) 1: C175
  Baseline 2: G128
  Equipment (Comparison) 2: G175

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C129
  Equipment (Comparison) 1: C176
  Baseline 2: G129
  Equipment (Comparison) 2: G176

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C130
  Equipment (Comparison) 1: C177
  Baseline 2: G130
  Equipment (Comparison) 2: G177

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C131
  Equipment (Comparison) 1: C178
  Baseline 2: G131
  Equipment (Comparison) 2: G178

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C133
  Equipment (Comparison) 1: C180
  Baseline 2: G133
  Equipment (Comparison) 2: G180

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C134
  Equipment (Comparison) 1: C181
  Baseline 2: G134
  Equipment (Comparison) 2: G181

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C135
  Equipment (Comparison) 1: C182
  Baseline 2: G135
  Equipment (Comparison) 2: G182

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C136
  Equipment (Comparison) 1: C183
  Baseline 2: G136
  Equipment (Comparison) 2: G183

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C139
  Equipment (Comparison) 1: C186
  Baseline 2: G139
  Equipment (Comparison) 2: G186

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C140
  Equipment (Comparison) 1: C187
  Baseline 2: G140
  Equipment (Comparison) 2: G187

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C141
  Equipment (Comparison) 1: C188
  Baseline 2: G141
  Equipment (Comparison) 2: G188

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

  Baseline 1: C145
  Equipment (Comparison) 1: C192
  Baseline 2: G145
  Equipment (Comparison) 2: G192

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C193
Equipment (Comparison) 2: G193

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C146
Equipment (Comparison) 1: C194
Baseline 2: G146
Equipment (Comparison) 2: G194

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C195
Equipment (Comparison) 2: G195

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C147
Equipment (Comparison) 1: C196
Baseline 2: G147
Equipment (Comparison) 2: G196

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C197
Equipment (Comparison) 2: G197

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C149
Equipment (Comparison) 1: C199
Baseline 2: G149
Equipment (Comparison) 2: G199

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C200
Equipment (Comparison) 2: G200

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C150

Equipment (Comparison) 1: C201
Baseline 2: G150
Equipment (Comparison) 2: G201

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C202
Equipment (Comparison) 2: G202

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C151
Equipment (Comparison) 1: C203
Baseline 2: G151
Equipment (Comparison) 2: G203

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C204
Equipment (Comparison) 2: G204

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C152
  Equipment (Comparison) 1: C205
  Baseline 2: G152
  Equipment (Comparison) 2: G205

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C153
  Equipment (Comparison) 1: C206
  Baseline 2: G153
  Equipment (Comparison) 2: G206

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C154
  Equipment (Comparison) 1: C207
  Baseline 2: G154
  Equipment (Comparison) 2: G207

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this

is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.

Baseline 1: C156
Equipment (Comparison) 1: C209
Baseline 2: G156
Equipment (Comparison) 2: G209

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.

  Baseline 1: C157
  Equipment (Comparison) 1: C210
  Baseline 2: G157
  Equipment (Comparison) 2: G210

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.

  Baseline 1: C158
  Equipment (Comparison) 1: C211
  Baseline 2: G158
  Equipment (Comparison) 2: G211

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

  Baseline 1: C159
  Equipment (Comparison) 1: C212
  Baseline 2: G159
  Equipment (Comparison) 2: G212

9.3 Equipment Set 3

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).

- For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
  - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C218
Equipment (Comparison) 1: C265
Baseline 2: G218
Equipment (Comparison) 2: G265

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C219
  Equipment (Comparison) 1: C266
  Baseline 2: G219
  Equipment (Comparison) 2: G266

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C220
  Equipment (Comparison) 1: C267
  Baseline 2: G220
  Equipment (Comparison) 2: G267

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

  Baseline 1: C221
  Equipment (Comparison) 1: C268
  Baseline 2: G221
  Equipment (Comparison) 2: G268

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

  Baseline 1: C222
  Equipment (Comparison) 1: C269
  Baseline 2: G222

Equipment (Comparison) 2: G269

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C223
  Equipment (Comparison) 1: C270
  Baseline 2: G223
  Equipment (Comparison) 2: G270

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C224
  Equipment (Comparison) 1: C271
  Baseline 2: G224
  Equipment (Comparison) 2: G271

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C225
  Equipment (Comparison) 1: C272
  Baseline 2: G225
  Equipment (Comparison) 2: G272

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C226
  Equipment (Comparison) 1: C273
  Baseline 2: G226
  Equipment (Comparison) 2: G273

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C227
  Equipment (Comparison) 1: C274
  Baseline 2: G227
  Equipment (Comparison) 2: G274

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C228
  Equipment (Comparison) 1: C275
  Baseline 2: G228
  Equipment (Comparison) 2: G275

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C229
  Equipment (Comparison) 1: C276
  Baseline 2: G229
  Equipment (Comparison) 2: G276

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C230
  Equipment (Comparison) 1: C277
  Baseline 2: G230
  Equipment (Comparison) 2: G277

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C231
  Equipment (Comparison) 1: C278
  Baseline 2: G231
  Equipment (Comparison) 2: G278

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C232
  Equipment (Comparison) 1: C279
  Baseline 2: G232
  Equipment (Comparison) 2: G279

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C234
  Equipment (Comparison) 1: C281
  Baseline 2: G234
  Equipment (Comparison) 2: G281

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C235
  Equipment (Comparison) 1: C282
  Baseline 2: G235
  Equipment (Comparison) 2: G282

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C236
  Equipment (Comparison) 1: C283
  Baseline 2: G236
  Equipment (Comparison) 2: G283

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C237
  Equipment (Comparison) 1: C284
  Baseline 2: G237
  Equipment (Comparison) 2: G284

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C240
  Equipment (Comparison) 1: C287
  Baseline 2: G240
  Equipment (Comparison) 2: G287

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C241
  Equipment (Comparison) 1: C288
  Baseline 2: G241
  Equipment (Comparison) 2: G288

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C242
  Equipment (Comparison) 1: C289
  Baseline 2: G242
  Equipment (Comparison) 2: G289

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

Baseline 1: C246
Equipment (Comparison) 1: C293
Baseline 2: G246
Equipment (Comparison) 2: G293

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C294
Equipment (Comparison) 2: G294

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C247
Equipment (Comparison) 1: C295
Baseline 2: G247
Equipment (Comparison) 2: G295

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C296
Equipment (Comparison) 2: G296

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C248
Equipment (Comparison) 1: C297
Baseline 2: G248
Equipment (Comparison) 2: G297

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C298
Equipment (Comparison) 2: G298

- **Chemicals**
  - Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C250
Equipment (Comparison) 1: C300
Baseline 2: G250
Equipment (Comparison) 2: G300

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C301
Equipment (Comparison) 2: G301

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C251
Equipment (Comparison) 1: C302
Baseline 2: G251
Equipment (Comparison) 2: G302

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C303
Equipment (Comparison) 2: G303

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C252
Equipment (Comparison) 1: C304
Baseline 2: G252
Equipment (Comparison) 2: G304

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C305
Equipment (Comparison) 2: G305

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons

Baseline 1: C253
Equipment (Comparison) 1: C306
Baseline 2: G253
Equipment (Comparison) 2: G306

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons

Baseline 1: C254
Equipment (Comparison) 1: C307
Baseline 2: G254
Equipment (Comparison) 2: G307

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons

Baseline 1: C255
Equipment (Comparison) 1: C308
Baseline 2: G255
Equipment (Comparison) 2: G308

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C257
  Equipment (Comparison) 1: C310
  Baseline 2: G257
  Equipment (Comparison) 2: G310

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C258
  Equipment (Comparison) 1: C311
  Baseline 2: G258
  Equipment (Comparison) 2: G311

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C259
  Equipment (Comparison) 1: C312
  Baseline 2: G259
  Equipment (Comparison) 2: G312

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C260
  Equipment (Comparison) 1: C313
  Baseline 2: G260
  Equipment (Comparison) 2: G313

9.4 Component Assembly Onsite Storage Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C319
  Equipment (Comparison) 1: C353
  Baseline 2: G319
  Equipment (Comparison) 2: G353

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C320
  Equipment (Comparison) 1: C354
  Baseline 2: G320
  Equipment (Comparison) 2: G354

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C321
  Equipment (Comparison) 1: C355
  Baseline 2: G321
  Equipment (Comparison) 2: G355

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

  Baseline 1: C322
  Equipment (Comparison) 1: C356
  Baseline 2: G322

Equipment (Comparison) 2: G356

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C323
  - Equipment (Comparison) 1: C357
  - Baseline 2: G323
  - Equipment (Comparison) 2: G357

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C324
  - Equipment (Comparison) 1: C358
  - Baseline 2: G324
  - Equipment (Comparison) 2: G358

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  - Baseline 1: C325
  - Equipment (Comparison) 1: C359
  - Baseline 2: G325
  - Equipment (Comparison) 2: G359

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  - Baseline 1: C326
  - Equipment (Comparison) 1: C360
  - Baseline 2: G326
  - Equipment (Comparison) 2: G360

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  - Baseline 1: C327
  - Equipment (Comparison) 1: C361
  - Baseline 2: G327
  - Equipment (Comparison) 2: G361

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is

spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

Baseline 1: C328
Equipment (Comparison) 1: C362
Baseline 2: G328
Equipment (Comparison) 2: G362

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C329
  Equipment (Comparison) 1: C363
  Baseline 2: G329
  Equipment (Comparison) 2: G363

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C330
  Equipment (Comparison) 1: C364
  Baseline 2: G330
  Equipment (Comparison) 2: G364

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

  Baseline 1: C331
  Equipment (Comparison) 1: C365
  Baseline 2: G331
  Equipment (Comparison) 2: G365

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)

  Baseline 1: C332
  Equipment (Comparison) 1: C366
  Baseline 2: G332
  Equipment (Comparison) 2: G366

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C333
  Equipment (Comparison) 1: C367
  Baseline 2: G333
  Equipment (Comparison) 2: G367

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C335
  Equipment (Comparison) 1: C369
  Baseline 2: G335
  Equipment (Comparison) 2: G369

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C336
  Equipment (Comparison) 1: C370
  Baseline 2: G336
  Equipment (Comparison) 2: G370

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C337
  Equipment (Comparison) 1: C371
  Baseline 2: G337
  Equipment (Comparison) 2: G371

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C338
  Equipment (Comparison) 1: C372
  Baseline 2: G338
  Equipment (Comparison) 2: G372

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C341
  Equipment (Comparison) 1: C375
  Baseline 2: G341
  Equipment (Comparison) 2: G375

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C342
  Equipment (Comparison) 1: C376
  Baseline 2: G342

Equipment (Comparison) 2: G376

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C343
  Equipment (Comparison) 1: C377
  Baseline 2: G343
  Equipment (Comparison) 2: G377

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C345
  Equipment (Comparison) 1: C379
  Baseline 2: G345
  Equipment (Comparison) 2: G379

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C346
  Equipment (Comparison) 1: C380
  Baseline 2: G346
  Equipment (Comparison) 2: G380

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C347
  Equipment (Comparison) 1: C381
  Baseline 2: G347
  Equipment (Comparison) 2: G381

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C348
  Equipment (Comparison) 1: C382
  Baseline 2: G348

Equipment (Comparison) 2: G382

9.5 Used Equipment Sales

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C388
  Equipment (Comparison) 1: C408
  Baseline 2: G388
  Equipment (Comparison) 2: G408

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C389
  Equipment (Comparison) 1: C409
  Baseline 2: G389
  Equipment (Comparison) 2: G409

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C390
  Equipment (Comparison) 1: C410
  Baseline 2: G390
  Equipment (Comparison) 2: G410

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

Baseline 1: C391
Equipment (Comparison) 1: C411
Baseline 2: G391
Equipment (Comparison) 2: G411

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C392
  Equipment (Comparison) 1: C412
  Baseline 2: G392
  Equipment (Comparison) 2: G412

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C393
  Equipment (Comparison) 1: C413
  Baseline 2: G393
  Equipment (Comparison) 2: G413

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C394
  Equipment (Comparison) 1: C414
  Baseline 2: G394
  Equipment (Comparison) 2: G414

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C395
  Equipment (Comparison) 1: C415
  Baseline 2: G395
  Equipment (Comparison) 2: G415

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C396
  Equipment (Comparison) 1: C416
  Baseline 2: G396
  Equipment (Comparison) 2: G416

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C397
  Equipment (Comparison) 1: C417
  Baseline 2: G397
  Equipment (Comparison) 2: G417

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C398
  Equipment (Comparison) 1: C418
  Baseline 2: G398
  Equipment (Comparison) 2: G418

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C399
  Equipment (Comparison) 1: C419
  Baseline 2: G399
  Equipment (Comparison) 2: G419

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C400
  Equipment (Comparison) 1: C420
  Baseline 2: G400
  Equipment (Comparison) 2: G420

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C401
  Equipment (Comparison) 1: C421
  Baseline 2: G401
  Equipment (Comparison) 2: G421

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C402
  Equipment (Comparison) 1: C422
  Baseline 2: G402
  Equipment (Comparison) 2: G422

10. Final Assembly

10.1 Equipment Set 1

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C16
  Equipment (Comparison) 1: C63
  Baseline 2: G16
  Equipment (Comparison) 2: G63

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  Baseline 1: C17
  Equipment (Comparison) 1: C64
  Baseline 2: G17
  Equipment (Comparison) 2: G64

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  Baseline 1: C18

Equipment (Comparison) 1: C65
Baseline 2: G18
Equipment (Comparison) 2: G65

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C19
  Equipment (Comparison) 1: C66
  Baseline 2: G19
  Equipment (Comparison) 2: G66

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C20
  Equipment (Comparison) 1: C67
  Baseline 2: G20
  Equipment (Comparison) 2: G67

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C21
  Equipment (Comparison) 1: C68
  Baseline 2: G21
  Equipment (Comparison) 2: G68

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C22
  Equipment (Comparison) 1: C69
  Baseline 2: G22
  Equipment (Comparison) 2: G69

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C23
  Equipment (Comparison) 1: C70
  Baseline 2: G23
  Equipment (Comparison) 2: G70

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C24
  Equipment (Comparison) 1: C71
  Baseline 2: G24
  Equipment (Comparison) 2: G71

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C25
  Equipment (Comparison) 1: C72
  Baseline 2: G25
  Equipment (Comparison) 2: G72

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C26
  Equipment (Comparison) 1: C73
  Baseline 2: G26
  Equipment (Comparison) 2: G73

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C27
  Equipment (Comparison) 1: C74
  Baseline 2: G27
  Equipment (Comparison) 2: G74

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C28
  Equipment (Comparison) 1: C75
  Baseline 2: G28

Equipment (Comparison) 2: G75

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C29
  Equipment (Comparison) 1: C76
  Baseline 2: G29
  Equipment (Comparison) 2: G76

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C30
  Equipment (Comparison) 1: C77
  Baseline 2: G30
  Equipment (Comparison) 2: G77

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C232
  Equipment (Comparison) 1: C79
  Baseline 2: G32
  Equipment (Comparison) 2: G79

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C33
  Equipment (Comparison) 1: C80
  Baseline 2: G33
  Equipment (Comparison) 2: G80

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C34
  Equipment (Comparison) 1: C81
  Baseline 2: G34
  Equipment (Comparison) 2: G81

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C35
  Equipment (Comparison) 1: C82
  Baseline 2: G35
  Equipment (Comparison) 2: G82

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

Baseline 1: C38
Equipment (Comparison) 1: C85
Baseline 2: G38
Equipment (Comparison) 2: G85

  - Enter average monthly natural gas used by equipment in thousand cubic feet

Baseline 1: C39
Equipment (Comparison) 1: C86
Baseline 2: G39
Equipment (Comparison) 2: G86

- Enter average monthly water used by equipment in HCFs

Baseline 1: C40
Equipment (Comparison) 1: C87
Baseline 2: G40
Equipment (Comparison) 2: G87

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

Baseline 1: C44
Equipment (Comparison) 1: C91
Baseline 2: G44
Equipment (Comparison) 2: G91

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C92
Equipment (Comparison) 2: G92

  - Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C45
Equipment (Comparison) 1: C93
Baseline 2: G45
Equipment (Comparison) 2: G93

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C94
Equipment (Comparison) 2: G94

  - Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C46

Equipment (Comparison) 1: C95
Baseline 2: G46
Equipment (Comparison) 2: G95

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C96
Equipment (Comparison) 2: G96

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C48
Equipment (Comparison) 1: C98
Baseline 2: G48
Equipment (Comparison) 2: G98

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C99
Equipment (Comparison) 2: G99

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C49
Equipment (Comparison) 1: C100
Baseline 2: G49
Equipment (Comparison) 2: G100

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C101
Equipment (Comparison) 2: G101

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C50
Equipment (Comparison) 1: C102
Baseline 2: G50
Equipment (Comparison) 2: G102

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C103
Equipment (Comparison) 2: G103

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C51
  Equipment (Comparison) 1: C104
  Baseline 2: G51
  Equipment (Comparison) 2: G104

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C52
  Equipment (Comparison) 1: C105
  Baseline 2: G52
  Equipment (Comparison) 2: G105

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C53
  Equipment (Comparison) 1: C106
  Baseline 2: G53
  Equipment (Comparison) 2: G106

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C55
  Equipment (Comparison) 1: C108
  Baseline 2: G55
  Equipment (Comparison) 2: G108

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C56
  Equipment (Comparison) 1: C109
  Baseline 2: G56
  Equipment (Comparison) 2: G109

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not

readily available you should develop a mechanism for attributing lobbying costs to different activities.

Baseline 1: C57
Equipment (Comparison) 1: C110
Baseline 2: G57
Equipment (Comparison) 2: G110

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

  Baseline 1: C58
  Equipment (Comparison) 1: C111
  Baseline 2: G58
  Equipment (Comparison) 2: G111

10.2 Equipment Set 2

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C117
  Equipment (Comparison) 1: C164
  Baseline 2: G117
  Equipment (Comparison) 2: G164

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C118
  Equipment (Comparison) 1: C165
  Baseline 2: G118
  Equipment (Comparison) 2: G165

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  Baseline 1: C119
  Equipment (Comparison) 1: C166
  Baseline 2: G119
  Equipment (Comparison) 2: G166

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  Baseline 1: C120
  Equipment (Comparison) 1: C167
  Baseline 2: G120
  Equipment (Comparison) 2: G167

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  Baseline 1: C121
  Equipment (Comparison) 1: C168
  Baseline 2: G121
  Equipment (Comparison) 2: G168

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  Baseline 1: C122
  Equipment (Comparison) 1: C169
  Baseline 2: G122
  Equipment (Comparison) 2: G169

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C123
  Equipment (Comparison) 1: C170
  Baseline 2: G123
  Equipment (Comparison) 2: G170

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered

in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)

Baseline 1: C124
Equipment (Comparison) 1: C171
Baseline 2: G124
Equipment (Comparison) 2: G171

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C125
  Equipment (Comparison) 1: C172
  Baseline 2: G125
  Equipment (Comparison) 2: G172

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C126
  Equipment (Comparison) 1: C173
  Baseline 2: G126
  Equipment (Comparison) 2: G173

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)

  Baseline 1: C127
  Equipment (Comparison) 1: C174
  Baseline 2: G127
  Equipment (Comparison) 2: G174

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

  Baseline 1: C128
  Equipment (Comparison) 1: C175
  Baseline 2: G128
  Equipment (Comparison) 2: G175

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  - Baseline 1: C129
  - Equipment (Comparison) 1: C176
  - Baseline 2: G129
  - Equipment (Comparison) 2: G176

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  - Baseline 1: C130
  - Equipment (Comparison) 1: C177
  - Baseline 2: G130
  - Equipment (Comparison) 2: G177

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  - Baseline 1: C131
  - Equipment (Comparison) 1: C178
  - Baseline 2: G131
  - Equipment (Comparison) 2: G178

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  - Baseline 1: C133
  - Equipment (Comparison) 1: C180
  - Baseline 2: G133
  - Equipment (Comparison) 2: G180

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  - Baseline 1: C134
  - Equipment (Comparison) 1: C181
  - Baseline 2: G134
  - Equipment (Comparison) 2: G181

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  - Baseline 1: C135
  - Equipment (Comparison) 1: C182
  - Baseline 2: G135
  - Equipment (Comparison) 2: G182

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C136
  Equipment (Comparison) 1: C183
  Baseline 2: G136
  Equipment (Comparison) 2: G183

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C139
  Equipment (Comparison) 1: C186
  Baseline 2: G139
  Equipment (Comparison) 2: G186

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C140
  Equipment (Comparison) 1: C187
  Baseline 2: G140
  Equipment (Comparison) 2: G187

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C141
  Equipment (Comparison) 1: C188
  Baseline 2: G141
  Equipment (Comparison) 2: G188

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

  Baseline 1: C145
  Equipment (Comparison) 1: C192
  Baseline 2: G145
  Equipment (Comparison) 2: G192

    - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C193
  Equipment (Comparison) 2: G193

  - Enter amount of Steel used by each unit of equipment (lbs.)

  Baseline 1: C146
  Equipment (Comparison) 1: C194
  Baseline 2: G146
  Equipment (Comparison) 2: G194

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C195
Equipment (Comparison) 2: G195

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C147
Equipment (Comparison) 1: C196
Baseline 2: G147
Equipment (Comparison) 2: G196

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C197
Equipment (Comparison) 2: G197

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C149
Equipment (Comparison) 1: C199
Baseline 2: G149
Equipment (Comparison) 2: G199

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C200
Equipment (Comparison) 2: G200

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C150
Equipment (Comparison) 1: C201
Baseline 2: G150
Equipment (Comparison) 2: G201

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C202
Equipment (Comparison) 2: G202

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C151
Equipment (Comparison) 1: C203

Baseline 2: G151
Equipment (Comparison) 2: G203

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C204
Equipment (Comparison) 2: G204

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C152
  Equipment (Comparison) 1: C205
  Baseline 2: G152
  Equipment (Comparison) 2: G205

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C153
  Equipment (Comparison) 1: C206
  Baseline 2: G153
  Equipment (Comparison) 2: G206

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C154
  Equipment (Comparison) 1: C207
  Baseline 2: G154
  Equipment (Comparison) 2: G207

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C156
  Equipment (Comparison) 1: C209
  Baseline 2: G156
  Equipment (Comparison) 2: G209

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C157

Equipment (Comparison) 1: C210
Baseline 2: G157
Equipment (Comparison) 2: G210

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.

  Baseline 1: C158
  Equipment (Comparison) 1: C211
  Baseline 2: G158
  Equipment (Comparison) 2: G211

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.

  Baseline 1: C159
  Equipment (Comparison) 1: C212
  Baseline 2: G159
  Equipment (Comparison) 2: G212

10.3 Equipment Set 3

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario
  - Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

  Baseline 1: C218
  Equipment (Comparison) 1: C265
  Baseline 2: G218
  Equipment (Comparison) 2: G265

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)
  - Baseline 1: C219
  - Equipment (Comparison) 1: C266
  - Baseline 2: G219
  - Equipment (Comparison) 2: G266

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.
  - Baseline 1: C220
  - Equipment (Comparison) 1: C267
  - Baseline 2: G220
  - Equipment (Comparison) 2: G267

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.
  - Baseline 1: C221
  - Equipment (Comparison) 1: C268
  - Baseline 2: G221
  - Equipment (Comparison) 2: G268

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)
  - Baseline 1: C222
  - Equipment (Comparison) 1: C269
  - Baseline 2: G222
  - Equipment (Comparison) 2: G269

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes
  - Baseline 1: C223
  - Equipment (Comparison) 1: C270
  - Baseline 2: G223
  - Equipment (Comparison) 2: G270

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")

Baseline 1: C224
Equipment (Comparison) 1: C271
Baseline 2: G224
Equipment (Comparison) 2: G271

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C225
  Equipment (Comparison) 1: C272
  Baseline 2: G225
  Equipment (Comparison) 2: G272

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C226
  Equipment (Comparison) 1: C273
  Baseline 2: G226
  Equipment (Comparison) 2: G273

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C227
  Equipment (Comparison) 1: C274
  Baseline 2: G227
  Equipment (Comparison) 2: G274

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C228
  Equipment (Comparison) 1: C275
  Baseline 2: G228
  Equipment (Comparison) 2: G275

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the

first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**

Baseline 1: C229
Equipment (Comparison) 1: C276
Baseline 2: G229
Equipment (Comparison) 2: G276

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate

  Baseline 1: C230
  Equipment (Comparison) 1: C277
  Baseline 2: G230
  Equipment (Comparison) 2: G277

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)

  Baseline 1: C231
  Equipment (Comparison) 1: C278
  Baseline 2: G231
  Equipment (Comparison) 2: G278

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)

  Baseline 1: C232
  Equipment (Comparison) 1: C279
  Baseline 2: G232
  Equipment (Comparison) 2: G279

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage

  Baseline 1: C234
  Equipment (Comparison) 1: C281
  Baseline 2: G234
  Equipment (Comparison) 2: G281

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage

  Baseline 1: C235
  Equipment (Comparison) 1: C282
  Baseline 2: G235
  Equipment (Comparison) 2: G282

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C236
  Equipment (Comparison) 1: C283
  Baseline 2: G236
  Equipment (Comparison) 2: G283

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C237
  Equipment (Comparison) 1: C284
  Baseline 2: G237
  Equipment (Comparison) 2: G284

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C240
  Equipment (Comparison) 1: C287
  Baseline 2: G240
  Equipment (Comparison) 2: G287

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C241
  Equipment (Comparison) 1: C288
  Baseline 2: G241
  Equipment (Comparison) 2: G288

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C242
  Equipment (Comparison) 1: C289
  Baseline 2: G242
  Equipment (Comparison) 2: G289

- **Materials (Metals)**
  - Enter amount of Iron used by each unit of equipment (lbs.)

  Baseline 1: C246
  Equipment (Comparison) 1: C293
  Baseline 2: G246
  Equipment (Comparison) 2: G293

  - **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

  Equipment (Comparison) 1: C294
  Equipment (Comparison) 2: G294

- Enter amount of Steel used by each unit of equipment (lbs.)

Baseline 1: C247
Equipment (Comparison) 1: C295
Baseline 2: G247
Equipment (Comparison) 2: G295

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C296
Equipment (Comparison) 2: G296

- Enter amount of other material/metal used by each unit of equipment (gallons or lbs.)

Baseline 1: C248
Equipment (Comparison) 1: C297
Baseline 2: G248
Equipment (Comparison) 2: G297

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C298
Equipment (Comparison) 2: G298

Chemicals

- Enter amount of organic solvent used for equipment (gallons or lbs.)

Baseline 1: C250
Equipment (Comparison) 1: C300
Baseline 2: G250
Equipment (Comparison) 2: G300

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C301
Equipment (Comparison) 2: G301

- Enter amount of coolant used for equipment (gallons or lbs.)

Baseline 1: C251
Equipment (Comparison) 1: C302
Baseline 2: G251
Equipment (Comparison) 2: G302

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C303
Equipment (Comparison) 2: G303

- Enter amount of other chemical used for equipment (gallons or lbs.)

Baseline 1: C252
Equipment (Comparison) 1: C304
Baseline 2: G252
Equipment (Comparison) 2: G304

- **For Comparison case only:** If the price for this chemical is different than the price indicated in the manufacturing process input (e.g., if a chemical partnership is used) enter that new price below this chemical

Equipment (Comparison) 1: C305
Equipment (Comparison) 2: G305

- **Average Monthly Solid Waste from Equipment Operation** – Enter the average amount of solid waste from equipment operation in tons
  Baseline 1: C253
  Equipment (Comparison) 1: C306
  Baseline 2: G253
  Equipment (Comparison) 2: G306

- **Average Monthly Hazardous Waste from Equipment Operation** – Enter the average amount of hazardous waste from equipment operation in tons
  Baseline 1: C254
  Equipment (Comparison) 1: C307
  Baseline 2: G254
  Equipment (Comparison) 2: G307

- **Average Monthly Non-hazardous Chemical Waste from Equipment Operation** – Enter the average amount of non-hazardous waste from equipment operation in tons
  Baseline 1: C255
  Equipment (Comparison) 1: C308
  Baseline 2: G255
  Equipment (Comparison) 2: G308

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C257
  Equipment (Comparison) 1: C310
  Baseline 2: G257
  Equipment (Comparison) 2: G310

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C258
  Equipment (Comparison) 1: C311
  Baseline 2: G258
  Equipment (Comparison) 2: G311

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C259
  Equipment (Comparison) 1: C312
  Baseline 2: G259
  Equipment (Comparison) 2: G312

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C260
  Equipment (Comparison) 1: C313
  Baseline 2: G260
  Equipment (Comparison) 2: G313

10.4 Final Assembly Onsite Storage Equipment

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison scenario with new equipment – you would select yes to include these modules in the baseline scenario

- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C319
Equipment (Comparison) 1: C353
Baseline 2: G319
Equipment (Comparison) 2: G353

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

Baseline 1: C320
Equipment (Comparison) 1: C354
Baseline 2: G320
Equipment (Comparison) 2: G354

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

Baseline 1: C321
Equipment (Comparison) 1: C355
Baseline 2: G321
Equipment (Comparison) 2: G355

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

Baseline 1: C322
Equipment (Comparison) 1: C356
Baseline 2: G322
Equipment (Comparison) 2: G356

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

Baseline 1: C323
Equipment (Comparison) 1: C357
Baseline 2: G323
Equipment (Comparison) 2: G357

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes

Baseline 1: C324
Equipment (Comparison) 1: C358
Baseline 2: G324

Equipment (Comparison) 2: G358

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C325
  Equipment (Comparison) 1: C359
  Baseline 2: G325
  Equipment (Comparison) 2: G359

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C326
  Equipment (Comparison) 1: C360
  Baseline 2: G326
  Equipment (Comparison) 2: G360

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C327
  Equipment (Comparison) 1: C361
  Baseline 2: G327
  Equipment (Comparison) 2: G361

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C328
  Equipment (Comparison) 1: C362
  Baseline 2: G328
  Equipment (Comparison) 2: G362

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C329
  Equipment (Comparison) 1: C363
  Baseline 2: G329

Equipment (Comparison) 2: G363

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years) . **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C330
  Equipment (Comparison) 1: C364
  Baseline 2: G330
  Equipment (Comparison) 2: G364

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C331
  Equipment (Comparison) 1: C365
  Baseline 2: G331
  Equipment (Comparison) 2: G365

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were)
  Baseline 1: C332
  Equipment (Comparison) 1: C366
  Baseline 2: G332
  Equipment (Comparison) 2: G366

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C333
  Equipment (Comparison) 1: C367
  Baseline 2: G333
  Equipment (Comparison) 2: G367

- **Loan Fee** – when including a loan in your financial analysis you may enter a loan fee as a percentage
  Baseline 1: C335
  Equipment (Comparison) 1: C369
  Baseline 2: G335
  Equipment (Comparison) 2: G369

- **Loan Rate** – this is the interest rate of your loan and should be entered as a percentage
  Baseline 1: C336
  Equipment (Comparison) 1: C370
  Baseline 2: G336
  Equipment (Comparison) 2: G370

- **Loan Term** – this is the term of the loan or the number of years before it should be paid back in full
  Baseline 1: C337
  Equipment (Comparison) 1: C371
  Baseline 2: G337
  Equipment (Comparison) 2: G371

- **Loan to value ratio** – this is the percentage of the capital cost (entered above) that the loan will cover (the initial principal)
  Baseline 1: C338
  Equipment (Comparison) 1: C372
  Baseline 2: G338
  Equipment (Comparison) 2: G372

- **Energy**
  - Enter average monthly electricity used by equipment in kWh

  Baseline 1: C341
  Equipment (Comparison) 1: C375
  Baseline 2: G341
  Equipment (Comparison) 2: G375

  - Enter average monthly natural gas used by equipment in thousand cubic feet

  Baseline 1: C342
  Equipment (Comparison) 1: C376
  Baseline 2: G342
  Equipment (Comparison) 2: G376

- Enter average monthly water used by equipment in HCFs
  Baseline 1: C343
  Equipment (Comparison) 1: C377
  Baseline 2: G343
  Equipment (Comparison) 2: G377

- **Impact on Annual Related Environmental Compliance Costs** – enter the amount of annual environmental compliance costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing compliance costs to different activities. If this reduces the impact make the number negative.
  Baseline 1: C345
  Equipment (Comparison) 1: C379

Baseline 2: G345
Equipment (Comparison) 2: G379

- **Impact on Annual Related Environmental Litigation Costs** – enter the amount of annual environmental litigation costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing litigation costs to different activities.
  Baseline 1: C346
  Equipment (Comparison) 1: C380
  Baseline 2: G346
  Equipment (Comparison) 2: G380

- **Impact on Annual Environmental-related Lobbying Costs** – enter the amount of annual environmental lobbying costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing lobbying costs to different activities.
  Baseline 1: C347
  Equipment (Comparison) 1: C381
  Baseline 2: G347
  Equipment (Comparison) 2: G381

- **Impact on Annual Related Environmental Clean-Up Costs** – enter the amount of annual environmental clean-up costs associated with the scope chosen for this analysis and *Model* (e.g., facility, manufacturing process or the manufacture of a type of product). If this is not readily available you should develop a mechanism for attributing clean-up costs to different activities.
  Baseline 1: C348
  Equipment (Comparison) 1: C382
  Baseline 2: G348
  Equipment (Comparison) 2: G382

10.5 Used Equipment Sales

- **Include in (Baseline/Comparison) Financials?** – choose from the drop down box whether to include this module in the financials (baseline financials for baseline modules and comparison financials for comparison modules) – Yes = include. If you do not want it included in the comparison calculations this cell should **ALWAYS** say "no" even when not using the module. If this cell says "Yes" the 1st Year of Inclusion of related O&M Values **MUST** be chosen (see below).
  - For Baseline modules you generally will not want it added to (or included in) the baseline financials because the manufacturing process input usually will already include the related numbers/characteristics
    - However, if you want to compare two different scenarios of moving forward – a baseline scenario with the purchase of new equipment versus a comparison

scenario with new equipment – you would select yes to include these modules in the baseline scenario

- Even if you do not include these modules in the baseline you must include the relevant characteristics for the baseline modules (e.g., energy, material, chemical use or waste, etc.) in order for the comparison to work.

Baseline 1: C388
Equipment (Comparison) 1: C408
Baseline 2: G388
Equipment (Comparison) 2: G408

- **Cost** – enter the capital cost of 1 unit of the equipment or initial cost of a system/management scheme in the next cell down ($)

  Baseline 1: C389
  Equipment (Comparison) 1: C409
  Baseline 2: G389
  Equipment (Comparison) 2: G409

- **Year of Inclusion in Financials** – choose the year of inclusion in financials (this refers to the year the capital costs will be included in the financials) from the drop down in the next cell. Usually this *Model* will assume the capital cost is incurred at the end of this year and the O&M costs would begin to be incurred the following year.

  Baseline 1: C390
  Equipment (Comparison) 1: C410
  Baseline 2: G390
  Equipment (Comparison) 2: G410

- **1st Year of Inclusion of related O&M Values** – choose the 1st year of inclusion of operations and maintenance (O&M) related expenses – this refers to all of the expenses that you input for the remainder of the module; this MUST be chosen if you chose Yes for including in Baseline/Comparison financials above. The O&M values cannot begin in the middle of a year.

  Baseline 1: C391
  Equipment (Comparison) 1: C411
  Baseline 2: G391
  Equipment (Comparison) 2: G411

- **Units** – enter the number of units you are purchasing/installing – every input will be multiplied by this number (including the capital cost above)

  Baseline 1: C392
  Equipment (Comparison) 1: C412
  Baseline 2: G392
  Equipment (Comparison) 2: G412

- **Useful Life (years)** – enter the useful life of the equipment or system in years for depreciation calculation purposes.

  Baseline 1: C393

Equipment (Comparison) 1: C413
Baseline 2: G393
Equipment (Comparison) 2: G413

- **Accelerated Depreciation Life if Applicable (years)** – enter the number of years used for accelerated depreciation (Modified Accelerated Cost Recovery System - MACRS) if applicable to this equipment or system (note, this calculation does not include the 50% 1st year rate applicable for the current year to renewable energy installations), if you are not using accelerated depreciation or it is not applicable leave cell blank (do **NOT** input "0")
  Baseline 1: C394
  Equipment (Comparison) 1: C414
  Baseline 2: G394
  Equipment (Comparison) 2: G414

- **Useful Life (years) for depreciation** – do **NOT** change this cell; it will either populate with the useful life you entered two cells above this one or it will populate with what you entered in the accelerated depreciation cell (it will always choose the latter if you entered something into that cell)
  Baseline 1: C395
  Equipment (Comparison) 1: C415
  Baseline 2: G395
  Equipment (Comparison) 2: G415

- **Federal Tax Incentive (%)** – if there is a Federal tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C396
  Equipment (Comparison) 1: C416
  Baseline 2: G396
  Equipment (Comparison) 2: G416

- **Years spread** – in the "years spread" cell immediately below the Federal tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years). **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C397
  Equipment (Comparison) 1: C417
  Baseline 2: G397
  Equipment (Comparison) 2: G417

- **State Tax Incentive (%)** – if there is a State tax incentive for this piece of equipment or system include it here as a percent of the overall capital cost (value) of the installed equipment or system)
  Baseline 1: C398

Equipment (Comparison) 1: C418
Baseline 2: G398
Equipment (Comparison) 2: G418

- **Years spread** – in the "years spread" cell immediately below the State tax incentive cell you need to put the number of years this tax credit is spread over (e.g., the 30% tax credit for solar is only realized in the first year so you should enter "1"; however, if a tax credit is spread over 5 years you should enter 5 so it calculates 1/5 of the tax credit for each of the first 5 O&M years). **If there is no incentive, this cell should have a "1" in it because it is in a denominator of a calculation that runs through the NPV analysis as well.**
  Baseline 1: C399
  Equipment (Comparison) 1: C419
  Baseline 2: G399
  Equipment (Comparison) 2: G419

- **Rebates ($/yr.)** – if there is a rebate for this piece of equipment or system include it here as a dollar amount per year (rebates are calculated in different ways, so you must calculate the particular rebate yourself); if the rebate changes annually, use an average of the expected rebates for each year of the rebate
  Baseline 1: C400
  Equipment (Comparison) 1: C420
  Baseline 2: G400
  Equipment (Comparison) 2: G420

- **Years spread** – in the "years spread" cell immediately below the rebate cell you need to put the number of years you can get this rebate; the amount you put in the rebate cell will be included in each of these years (it is **NOT** divided by the years as the tax incentives were).
  Baseline 1: C401
  Equipment (Comparison) 1: C421
  Baseline 2: G401
  Equipment (Comparison) 2: G421

- **Annual Maintenance & Repair Costs per Unit ($)** – enter the average annual costs for maintenance and repair for each unit of equipment or system (this will be multiplied by the number of units you entered earlier)
  Baseline 1: C402
  Equipment (Comparison) 1: C422
  Baseline 2: G402
  Equipment (Comparison) 2: G422

11. Renewable Energy, Carbon Credits, Renewable Energy Certificates, Waste Revenue Generating Opportunities (RE, C Credits, RECs, Waste RGOs) Worksheet

Solar Module:

- The Solar module is there to assist in determining an estimated monthly electricity generation value (in kWh) if you are looking at solar installations. It uses GE's values from its residential solar brochure.
- Use drop down in C19 to select solar zone from the map to the right
- Enter square footage covered by solar panels in C20
- Do **NOT** change C21 or C22
- You can then input the value from C22 into the appropriate cell for monthly electricity generated for the appropriate "Energy Generation Equipment" module in the "Equipment-Scale Input" tab. The appropriate cell will either be C39, G39, C74, or G74)

Climate Change Module:

- The Climate Change Module will be helpful under a carbon cap, which does not exist yet. This module simply let's you keep track. It is not necessary for the *Model*.

Baseline Input:

- Move on to Renewable Energy Certificate (REC) Purchasing
  - Choose from the drop down box in cell F43 whether to include this information in the baseline financials: Yes = include.
  - For each year, input the MWh of different REC types (e.g., wind C45 – M45, solar C48 – M48, biomass C51 – M51, a mix of RE sources C54 – M54) purchased and the price per MWh for each year (e.g., wind C46 – M46, solar C49 – M49, biomass C52 – M52, a mix of RE sources C55 – M55)
- Carbon Credit Purchasing
  - Choose from the drop down box in cell F57 whether to include this information in the baseline financials: Yes = include.
  - For each year, input the tons of CO2 equivalents for different emissions types (e.g., industrial C59 – M59, transportation C62 – M62, fugitive waste emissions C65 – M65, other carbon offsets C68 – M68) purchased and the price per ton for each year (e.g., industrial C60 – M60, transportation C63 – M63, fugitive waste emissions C66 – M66, other carbon offsets C69 – M69)
- SOx and NOx Credit Purchasing
  - Choose from the drop down box in cell F71 whether to include this information in the baseline financials: Yes = include.
  - For each year, input the tons of each (SOx C73 – M73 and NOx C76 – M76) purchased and the price per ton for each year (SOx C74 – M74 and NOx C77 – M77)
- Carbon Credit and Offset Sales
  - Choose from the drop down box in cell F79 whether to include this information in the baseline financials: Yes = include.
  - For each year, input the tons of CO2 equivalents for different emissions types (e.g., industrial C81 – M81, transportation C84 – M84, fugitive waste emissions C87 –

M87, other carbon offsets C90 – M90) sold and the price per ton for each year (e.g., industrial C82 – M82, transportation C85 – M85, fugitive waste emissions C88 – M88, other carbon offsets C91 – M91)

- SOx and NOx Credit Sales
  - Choose from the drop down box in cell F93 whether to include this information in the baseline financials: Yes = include.
  - For each year, input the tons of each (SOx C95 – M95 and NOx C98 – M98) sold and the price per ton for each year (SOx C96 – M96 and NOx C99 – M99)
- Waste Revenue Generating Opportunities (RGO)
  - Choose from the drop down box in cell F101 whether to include this information in the baseline financials: Yes = include.
  - For each year, input the metric tons of each RGO sold (scrap metal C103 – M103, plastics C106 – M106, chemicals C109 – M109, other C112 – M112) and the price per ton (scrap metal C104 – M104, plastics C107 – M107, chemicals C110 – M110, other C113 – M113)

Comparison Case Input:

- Repeat for the Comparison case starting on row 116
- Move on to Renewable Energy Certificate (REC) Purchasing
  - Choose from the drop down box in cell F118 whether to include this information in the Comparison financials: Yes = include.
  - For each year, input the MWh of different REC types (e.g., wind C120 – M120, solar C123 – M123, biomass C126 – M126, a mix of RE sources C129 – M129) purchased and the price per MWh for each year (e.g., wind C121 – M121, solar C124 – M124, biomass C127 – M127, a mix of RE sources C130 – M130)
- Carbon Credit Purchasing
  - Choose from the drop down box in cell F132 whether to include this information in the Comparison financials: Yes = include.
  - For each year, input the tons of CO2 equivalents for different emissions types (e.g., industrial C134 – M134, transportation C137 – M137, fugitive waste emissions C140 – M140, other carbon offsets C143 – M143) purchased and the price per ton for each year (e.g., industrial C135 – M135, transportation C138 – M138, fugitive waste emissions C141 – M141, other carbon offsets C144 – M144)
- SOx and NOx Credit Purchasing
  - Choose from the drop down box in cell F146 whether to include this information in the Comparison financials: Yes = include.
  - For each year, input the tons of each (SOx C148 – M148 and NOx C151 – M151) purchased and the price per ton for each year (SOx C149 – M149 and NOx C152 – M152)
- Carbon Credit and Offset Sales
  - Choose from the drop down box in cell F154 whether to include this information in the Comparison financials: Yes = include.
  - For each year, input the tons of CO2 equivalents for different emissions types (e.g., industrial C156 – M156, transportation C159 – M159, fugitive waste emissions C162 – M162, other carbon offsets C165 – M165) sold and the price per ton for each year

(e.g., industrial C157 – M157, transportation C160 – M160, fugitive waste emissions C163 – M163, other carbon offsets C166 – M166)

- SOx and NOx Credit Sales
  - Choose from the drop down box in cell F168 whether to include this information in the Comparison financials: Yes = include.
  - For each year, input the tons of each (SOx C170 – M170 and NOx C173 – M173) sold and the price per ton for each year (SOx C171 – M171 and NOx C174 – M174)
- Waste Revenue Generating Opportunities (RGO)
  - Choose from the drop down box in cell F178 whether to include this information in the Comparison financials: Yes = include.
  - For each year, input the metric tons of each RGO sold (scrap metal C180 – M180, plastics C183 – M183, chemicals C186 – M186, other C189 – M189) and the price per ton (scrap metal C181 – M181, plastics C184 – M184, chemicals C187 – M187, other C190 – M190)

12. Packaging Worksheet

12.1 Baseline:

- Cell B9 – use drop down to choose whether the costs in this worksheet should be included in the baseline expenses of the *Model*. If you are simply comparing two container/pallet scenarios you may just want to use just this worksheet without including in the overall NPV analysis.
- Row 11, white cells – you can choose a type of container or pallet from the drop down menus for each year or leave blank. This is simply for the user's information
- Row 12, white cells – input the purchase price per container/pallet
- Row 13, white cells – input the cost of sealing materials used per container use
- Row 14, white cells – input cost of shrink wrap used per container/pallet use
- Row 15, , white cells – input cost of other peripheral packaging per container/pallet use

Timing Inputs (If you leave these blank the usable turns per year will be 1)

- Cell B18 – input number of days at your facility
- Cell B19 – input safety stock, number of days needed on site for safety back up
- Cell B20 – input number of days in transit to 1st location
- Cell B21 – input number of days at first location
- Cell B22 – input number of days in transit to 2nd location
- Cell B23 – input number of days at second location
- Cell B24 – input number of days in transit to final location
- Cell B25 – input number of days at final location
- Cell B26 – input number of days in transit back to facility
- Cell B27 – input number of days for processing (e.g., cleaning and preparation for reuse)
- Do **NOT** change cell B28 or any cells in row 29. These calculate the number of turns per year per container/pallet

- Row 31, white cells – Input the number of products packed in each container for each year
- Row 32, white cells – Input the total number of products shipped each year

- Do **NOT** change any cells in Row 33 – this is where the total number of containers shipped each year is calculated
- Do **NOT** change any cells in Row 35 – this calculates the total number of containers owned based on the number of turns and the total number of containers shipped
- Cell B36 – input replacement rate (e.g., for one-use corrugated cardboard enter "100" and it will use it as 100% of containers will be replaced each year)
- Do **NOT** change any cells in Row 37 or Row 38– these calculate the total investment and total initial capital investment per container, respectively

- Row 40, white cells – input the cost of returning containers or pallets for each year
- Do NOT change any cells in Row 41 – this calculates the total annual return costs
- Row 42, white cells – input the processing costs each year (e.g., cleaning and preparation costs for all containers, pallets)
- Do NOT change any cells in Row 43 – this calculates the disposal costs from the disposal items below it
- Row 44, white cells – input the tons of container- and pallet-related waste disposed of each year
- Row 45, white cells – input the number of "pulls" (times that disposed materials are picked up)
- Row 46, white cells – input the tipping fee (in $ per ton of disposed materials) for each year
- Do NOT change any cells in Row 47 – this calculates the cost of transportation related to disposal of materials using the inputs in the transportation-related cost inputs below it
- Row 48, white cells – input the fuel surcharge per "pull" (times that disposed materials are picked up) for each year
- Row 49, white cells – input the charge per "pull" (times that disposed materials are picked up) for each year
- Row 50, white cells – input related labor cost for each year (this labor cost relates to wages spent on moving, managing and dealing with containers on site)
- Row 51, white cells – input ergonomic benefits in terms of $ per year due to the process being addressed. Often times this is used mainly in the comparison versus the baseline.

- Do NOT change any cells in Row 53 or in Row 54 – these calculate total related costs and cost per container shipped, respectively

12.2 Comparison:

- Cell B57 – use drop down to choose whether the costs in this worksheet should be included in the baseline expenses of the *Model*. If you are simply comparing two container/pallet scenarios you may just want to use this worksheet without including in the overall NPV analysis.
- Repeat the above steps for the Comparison scenario as needed

- Row 59, white cells – you can choose a type of container or pallet from the drop down menus for each year or leave blank. This is simply for the user's information
- Row 60, white cells – input the purchase price per container/pallet
- Row 61, white cells – input the cost of sealing materials used per container use

- Row 62, white cells – input cost of shrink wrap used per container/pallet use
- Row 63, , white cells – input cost of other peripheral packaging per container/pallet use

Timing Inputs (If you leave these blank the usable turns per year will be 1)

- Cell B66 – input number of days at your facility
- Cell B67 – input safety stock, number of days needed on site for safety back up
- Cell B68 – input number of days in transit to 1st location
- Cell B69 – input number of days at first location
- Cell B70 – input number of days in transit to 2nd location
- Cell B71 – input number of days at second location
- Cell B72 – input number of days in transit to final location
- Cell B73 – input number of days at final location
- Cell B74 – input number of days in transit back to facility
- Cell B75 – input number of days for processing (e.g., cleaning and preparation for reuse)
- Do **NOT** change cell B76 or any cells in row 77. These calculate the number of turns per year per container/pallet

- Row 79, white cells – Input the number of products packed in each container for each year
- Row 80, white cells – Input the total number of products shipped each year
- Do **NOT** change any cells in Row 81 – this is where the total number of containers shipped each year is calculated
- Do **NOT** change any cells in Row 83 – this calculates the total number of containers owned based on the number of turns and the total number of containers shipped
- Cell B84 – input replacement rate (e.g., for one-use corrugated cardboard enter "100" and it will use it as 100% of containers will be replaced each year)
- Do **NOT** change any cells in Row 85 or Row 86– these calculate the total investment and total initial capital investment per container, respectively

- Row 88, white cells – input the cost of returning containers or pallets for each year
- Do NOT change any cells in Row 89 – this calculates the total annual return costs
- Row 90, white cells – input the processing costs each year (e.g., cleaning and preparation costs for all containers, pallets)
- Do NOT change any cells in Row 91 – this calculates the disposal costs from the disposal items below it
- Row 92, white cells – input the tons of container- and pallet-related waste disposed of each year
- Row 93, white cells – input the number of "pulls" (times that disposed materials are picked up)
- Row 94, white cells – input the tipping fee (in $ per ton of disposed materials) for each year
- Do NOT change any cells in Row 95 – this calculates the cost of transportation related to disposal of materials using the inputs in the transportation-related cost inputs below it
- Row 96, white cells – input the fuel surcharge per "pull" (times that disposed materials are picked up) for each year
- Row 97, white cells – input the charge per "pull" (times that disposed materials are picked up) for each year

- Row 98, white cells – input related labor cost for each year (this labor cost relates to wages spent on moving, managing and dealing with containers on site)
- Row 99, white cells – input ergonomic benefits in terms of $ per year due to the process being addressed. Often times this is used mainly in the comparison versus the baseline.

- Do NOT change any cells in Row 101 or in Row 102 – these calculate total related costs and cost per container shipped, respectively

- Row 104 shows the financial difference between the base case and comparison case scenarios

- Row 105 shows the financial difference between the base case and comparison case scenarios per container shipped

13. Net Present Value (NPV) Analysis Worksheet

- This worksheet provides your financial outputs and comparisons. You will be able to compare 1) the manufacturing process input worksheet baseline with a scenario in which you add equipment or processe to the manufacturing process input baseline, 2) the manufacturing process input to a scenario in which you add equipment or processes to the comparison case, and 3) the comparison case versus the manufacturing process input baseline plus any baseline equipment or process additions. The latter comparison will probably be the most used to compare different baseline scenarios with a comparison scenario.
  - The first section provides a comparison of any added "baseline" equipment or processes to the manufacturing process input worksheet. For example, if you have decided to add new pieces of equipment, changed your chemical management plan, or added a new manufacturing system/process to the baseline portion, this section will provide a comparison of the baseline with and without those changes
    - The Discounted Cash Flows are shown in row 24
      Use this to understand how changes to the manufacturing process input impact your cash flows on a discounted basis (using the discount rate or weighted average cost of capital from the General Input and Assumptions worksheet)
    - Payback Period – You can determine the year in which the projects pay back by looking at the discounted cash flows and determining in which year they turn positive (that will be the year in which it pays back). For example if you purchase a piece of equipment at the end of year 0 (column C; named year 0 because the equipment is purchased at the end of the year and the operating expenses and savings don't begin until the following year – year 1) and the discounted cash flows are negative in columns D and E but turn positive in column F the project pays back in year 3 (the third year of the related costs and savings).
    - Internal Rate of Return is shown in cell C25

Use this to compare projects in terms of their financial benefits. This is better than payback period because it shows the overall value of a project versus the manufacturing process input or baseline.

- Cumulative Net Present Value is shown in row 26
  Use this to compare projects in terms of their financial benefits. This is better than payback period because it shows the overall value of a project versus the manufacturing process input or baseline.

- The second section provides a comparison of the comparison scenario to the manufacturing process input worksheet. For example, if you have added new pieces of comparison equipment, changed your chemical management plan in the comparison inputs, or added a new manufacturing system/process for comparison, this section will provide a comparison of the financials for the manufacturing process input baseline to the comparison scenario you have built.
  - The Discounted Cash Flows are shown in row 50
    Use this to understand how changes to the manufacturing process input impact your cash flows on a discounted basis (using the discount rate or weighted average cost of capital from the General Input and Assumptions worksheet)
  - Payback Period – You can determine the year in which the projects pay back by looking at the discounted cash flows and determining in which year they turn positive (that will be the year in which it pays back). For example if you purchase a piece of equipment at the end of year 0 (column C; named year 0 because the equipment is purchased at the end of the year and the operating expenses and savings don't begin until the following year – year 1) and the discounted cash flows are negative in columns D and E but turn positive in column F the project pays back in year 3 (the third year of the related costs and savings).
  - Internal Rate of Return is shown in cell C51
    Use this to compare projects in terms of their financial benefits. This is better than payback period because it shows the overall value of a project versus the manufacturing process input or baseline.
  - Cumulative Net Present Value is shown in row 52
    Use this to compare projects in terms of their financial benefits. This is better than payback period because it shows the overall value of a project versus the manufacturing process input or baseline.
- The third section (rows 56 – 60) provides a comparison of the comparison scenario to the manufacturing process input worksheet plus any additional baseline equipment/process inputs. For example, if you have added new pieces of comparison equipment, changed your chemical management plan in the comparison inputs, or added a new manufacturing system/process for comparison AND you have added new pieces of comparison equipment, changed your chemical management plan in the comparison inputs, or added a new manufacturing system/process in your baseline, this section will provide a comparison of the financials for the manufacturing process input baseline plus additional baseline inputs to the comparison scenario you have built.
  - The Discounted Cash Flows are shown in row 58

Use this to understand how changes to the manufacturing process input impact your cash flows on a discounted basis (using the discount rate or weighted average cost of capital from the General Input and Assumptions worksheet)

- Payback Period – You can determine the year in which the projects pay back by looking at the discounted cash flows and determining in which year they turn positive (that will be the year in which it pays back). For example if you purchase a piece of equipment at the end of year 0 (column C; named year 0 because the equipment is purchased at the end of the year and the operating expenses and savings don't begin until the following year – year 1) and the discounted cash flows are negative in columns D and E but turn positive in column F the project pays back in year 3 (the third year of the related costs and savings).
- Internal Rate of Return is shown in cell C59
  Use this to compare projects in terms of their financial benefits. This is better than payback period because it shows the overall value of a project versus the manufacturing process input or baseline.
- Cumulative Net Present Value is shown in row 60
  Use this to compare projects in terms of their financial benefits. This is better than payback period because it shows the overall value of a project versus the manufacturing process input or baseline.
- Finally, this third comparison is followed by a short subsection that shows the cumulative net present value per unit of product manufactured when you have chosen to enter the total number of products manufactured in row 6 of the manufacturing process input.

14. Emissions Output Summary

- The first 27 rows show the total emissions under different scenarios (baseline = baseline + manufacturing process input)
- Rows 32 – 56 calculate the savings or (cost) per ton of emission reduced
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

15. Upstream Impacts

- Row 4 – input the kWh per gallon or lb. of chemical produced
- Row 8 – input the kWh per gallon or lb. of coolant produced
- Row 12 – input the kWh per gallon or lb. of organic solvent produced
- Row 19 – input kWh per lb. produced of indicated metal in B18 produced
- Row 34 – input lbs. CO_2 equivalent per lb. of indicated metal in B33 produced
- Row 49 – input the SO_2 equivalent per lb. of indicated metal in B48 produced
- Row 64 – input the solid waste per lb. of indicated metal in B63 produced
- Row 79 – input the kWh of energy used for delivery of each HCF of water – Water is inextricably linked to energy in that it takes energy to transport water. In addition, but not calculated here, it takes water to produce energy – this should be addressed in full life cycle assessment as well.

- C121 – C132 – enter the percentage of the product that is made up of the listed persistent organic pollutants (POPs) under the Stockholm Convention
- E121 – E132 – enter the TRI reporting threshold for each
- F121 – F132 – enter the actual amount of POPs emitted from the manufacturing process (make sure this is in the same units as indicated by the TRI reporting threshold)
- C142 – C147 – enter the percent reduction of each of the indicated topics in the corresponding cell in column B
- D159 – D170 – enter the average percent reduction of the toxic chemicals and media pollutants listed in the corresponding cells in column C
- The rest is mostly reference for items to look for when assessing upstream impacts
- Use *BEES Please* to track any of the chemicals listed as data becomes available
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

16. Downstream Impacts

- Mostly reference for items to look for when assessing downstream impacts
- Use *BEES Please* to track any of the chemicals listed as data becomes available

17. Baseline Facility Expenses

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of costs and expenses
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

18. Baseline Facility Revenues

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of revenue sources
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

19. Tax Credits & Rebates (Baseline)

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of tax credits and rebates
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

20. Loan & Interest Payments (Baseline)

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of loan and interest payments
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

21. Comparison Scenario Expenses

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of costs and expenses
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

22. Comparison Scenario Revenues

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of revenue sources
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

23. Comp Tax Credits & Rebates (Comparison)

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of tax credits and rebates
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

24. Comp Loan & Interest Payments (Comparison)

- Do **NOT** change anything in this worksheet
- You can look through this worksheet to see the breakdown of loan and interest payments
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

25. Detailed State-Specific Environmental Output

- Do **NOT** change anything in this worksheet
- The air emissions in this worksheet are calculated using state-specific emissions factors
- You can look through this worksheet to see the breakdown of environmental impacts
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

26. Detailed eGRID Environmental Output

- Do **NOT** change anything in this worksheet
- The air emissions in this worksheet are calculated using eGRID emissions factors (this is what EPA's Climate Leaders uses)
- You can look through this worksheet to see the breakdown of environmental impacts
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

27. Environmental Metrics

- This is where you will find all of the emissions factors used in emissions calculations
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

28. Metals

- This is where you will find emissions factors, energy factors and solid waste factors used in upstream calculations

29. Amortization Schedules

- These worksheets are where all of the amortization of loans are calculated
- For more information on the calculations in this sheet see Equations, Algorithms & Assumptions Document

30. Alt. Energy Inputs

- This is where you will find the listing of solar output from GE

31. Electric & Natural Gas Rates

- This is where you will find all of the electric and natural gas rates used in calculations

32. Natural Gas Rates

- This is where you will find the raw data for natural gas rates which are used in the previous worksheet

33. Carbon Price Data

- This is where you will find some carbon price data, but it is advised that you use the current carbon prices at the beginning of the input process

34. State Tax Rates

- This is where you will find all of the state tax rates used in calculations
- We use the maximum rate (yellow column)
- These rates are for tax year 2007, but you can check to see if there are differences in the year you are using the *Model* and replace the max. rate

35. Lists

- These are the lists used for most of the drop down boxes