# PAGES

General Information

Energy

Water

Capital – Investment

Capital – Replacement

Capital – OMR

Contract – Implementation

Contract – Annual

Other – Cost or Benefit

Other – Non-Monetary Value

If Analysis Type MILCON ECIP or FEMP ESPC

Customize pages to allow for inputs as costs or savings (should this be included regardless?)

Create a zero cost baseline alternative

# DETAILS OF EACH PAGE

## General Information

Project Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Analyst – text box (character limit of 30?)

Analysis Type – Drop down

Federal Analysis, Financed Project

FEMP Analysis, Energy Project

OMB Analysis, Non-Energy Project

If OMB Non-Energy, display Analysis Purpose – Drop Down

Cost-effectiveness, lease-purchase, internal government investment, and asset sales

Public investment and regulatory analyses

MILCON Analysis, Energy Project

MILCON Analysis, Non-Energy Project

MILCON Analysis, ECIP Project

FEMP Analysis, ESPC Project (this is new; same design as ECIP but using FEMP Financed assumptions)

Length of Study Period – integer (0 to 40 years – this does not include construction phase, which is up to 3 years)

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Constant or Current Dollar Analysis? – Constant / Current Toggle or Radial

Discounting Information

Discounting Convention – drop down

End of Year

Mid-Year

Discount and Inflation Rates (default fill; follow update rules from [PV]^2 code)

Discount Rate – Real – number (% 2 decimals) (limit between -100% and +100%)

Discount Rate – Nominal – number (% 2 decimals) (limit between -100% and +100%)

Inflation Rate – number (% 2 decimals) (limit between -100% and +100%)

Autofill default values for constant/current analysis and discounting information based on analysis type and purpose. Functions for calculating the missing values is in [PV]^2. Use the table I will provide that will include the information below. Note that the rates change from year to year while the other values are constant:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Analysis Type | Analysis Purpose | Constant / Current | Discounting Convention | Real Discount Rate | Nominal Discount Rate | Inflation Rate |
| Federal Analysis, Financed Project |  | Current | End-of-Year | Autocalc | Default Value (3.2%) | Default Value |
| FEMP Analysis, Energy Project |  | Constant | End-of-Year | Default Value (3%) | Autocalc | Default Value |
| OMB Analysis, Non-Energy Project | Cost-effectiveness, lease-purchase, internal government investment, and asset sales | Constant | End-of-Year | Default OMB Rate by study period length | Autocalc | Default Value |
|  | Public investment and regulatory analyses | Constant | End-of-Year | 7.0% fixed | Autocalc | Default Value |
| MILCON Analysis, Energy Project |  | Constant | Mid-Year | Default Value (3%) | Autocalc | Default Value |
| MILCON Analysis, Non-Energy Project |  | Constant | Mid-Year | Default OMB Rate by study period length | Autocalc | Default Value |
| MILCON Analysis, ECIP Project |  | Constant | Mid-Year | Default Value (3%) | Autocalc | Default Value |
| FEMP Analysis, ESPC Project |  | Constant | End-of-Year | Default Value (3%) | Autocalc | Default Value |

Note: Allow user to modify all selections and auto-update the other values to be consistent. We will need to add a warning message if they change a value that says it no longer uses default values based on federal requirements.

Once these values are initially populated, if a user changes the analysis type, analysis purpose, or study period (only if using OMB rates), change the values back to defaults with a notification that they are changing.

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Location (Primary)

Country – searchable drop down (find good source, such as the state department at https://history.state.gov/countries/all)

If US

State/Territory – searchable drop down (include US territories - https://usa.usembassy.de/travel-states.htm)

City – text box (character limit of 50?)

ZIP – drop down list based on State (use ZIP state-territory mapping from NETL)

If Not US

State/Province – text box (character limit of 30?)

City – text box (character limit of 50?)

Greenhouse Gas (GHG) Emissions and Cost Assumptions (these drop downs will grow over time)

Emissions Rate Scenario – drop down (we need to decide on an easier naming convention to understand once we get feedback on what options DOE wants to provide for users)

2023 – EIA – Reference Case (Average)

2023 – EIA – Low Renewable Cost Case (Average)

2023 – Cambium – Mid-Case (Long-Run Marginal) \*

* Uses EIA – LRC (Average) for non-electricity fuels

2023 – Cambium – Mid-Case (Average) \*

* Uses EIA – LRC (Average) for non-electricity fuels

2023 – Cambium – Low Renewable Cost Case (Long-Run Marginal) \*

* Uses EIA – LRC (Average) for non-electricity fuels

2023 – Cambium – Low Renewable Cost Case (Average) \*

* Uses EIA – LRC (Average) for non-electricity fuels

Social Cost of GHG Scenario – drop down (better naming convention once DOE guidance exists)

SCC = $0 / ton

2023 – 5% Discount Rate – Average (“Low”)

2023 – 3% Discount Rate – Average (“Medium”)

2023 – 3% Discount Rate – 95th Percentile (“High”)

Note: I will provide data tables to match these selections with data.

Note: Question – should we include a option to select different release year for energy escalation rate data? This could be done with another drop down list as a “scenario”.

## Energy

Project Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Fuel Type – Drop Down

Electricity

Natural Gas

Distillate Fuel Oil (#1, #2)

Residual Fuel Oil (#4, #5, #6)

Liquified Petroleum Gas / Propane

Customer Sector – Drop down

Residential

Commercial

Industrial

Location of Energy Consumption

If US

State/Territory – searchable drop down

ZIP – drop down list based on State

If Not US

Default to US Average?

Cost Per Unit – dollar number (2 decimal places)

Annual Consumption – number (2 decimal places)

Unit – drop down (need to find conversion code for each of fuel type)

If Electricity

kWh

Therm

MBtu

MJ

GJ

If Natural Gas

kWh

Therm

MBtu

MJ

GJ

Cubic meters

Cubic feet

If Fuel Oil (Distillate or Residual)

kWh

Therm

MBtu

MJ

GJ

Liter

Gallon

If Liquified Petroleum Gas

kWh

Therm

MBtu

MJ

GJ

Liter

Gallon

Cubic meters

Cubic feet

If Coal (should we still include?)

kWh

Therm

MBtu

MJ

GJ

Kg

Pound

Ton

Demand Charge (Annual) – dollar number (2 decimals)

Rebate (Annual) – dollar number (2 decimals)

Price Escalation Rate

Constant? – Yes/No Toggle

If Yes

Single Constant Value – number (% 2 decimals)

If No

Annual Value – List – number (% 2 decimals)

List is the length of the study period

Use Index

Constant? – Yes/No Toggle

If Yes

Single Constant Value – number (% 2 decimals)

If No

Annual Value – List – number (% 2 decimals)

List if the length of the study period

## Water

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Unit – drop down (need to find code for water volume conversions)

Liter

1000 liters

Gallon

1000 gallons

Cubic meters

Cubic feet

Usage (can we design this to be able to add more seasons?)

Season 1 (Summer)

Cost Per Unit – dollar number (2 decimals)

Season 2 (Winter)

Cost Per Unit - dollar number (2 decimals)

Disposal (BLCC 5.3 has 2 seasons – summer and winter - design this to be able to add more seasons?)

Season 1 (Summer)

Cost Per Unit - dollar number (2 decimals)

Season 2 (Winter)

Cost Per Unit - dollar number (2 decimals)

Price Escalation Rate (generically this is Rate of Change - Value)

Constant? – Yes/No Toggle

If Yes

Single Constant Value – number (% 2 decimals)

If No

Annual Value – List – number (% 2 decimals)

List is the length of the study period

Use Index (generically this is Rate of Change - Units)

Constant? – Yes/No Toggle

If Yes

Single Constant Value – number (% 2 decimals)

If No

Annual Value – List – number (% 2 decimals)

List is the length of the study period

## Capital Cost – Investment

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Initial Cost (Base Year Dollars) – dollar number (2 decimals)

Annual Rate of Change – number (% 2 decimals)

Expected Life (Years) – integer (1 to 100 years)

Cost Adjustment Factor – number (% 2 decimals)

Cost Phase In (Years) – integer (0 to 3 years)

Percent of initial cost by year of phase in – table

Automate year

number (% 2 decimals)

Sum (automatically based on % for each year – must sum to 100%)

Residual Value

Approach – Percent or Dollar Toggle

Value

If Percent – number (% 2 decimals)

If Dollar – dollar number (2 decimals)

## Capital Cost – Replacement

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Initial Cost (Base Year Dollars) – dollar number (2 decimals)

Annual Rate of Change – number (% 2 decimals)

Expected Life (Years) – integer (1 to 100 years)

Residual Value

Approach – Percent or Dollar Toggle

Value

If Percent – number (% 2 decimals)

If Dollar – number ($ 2 decimals)

## Capital Cost – OMR

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Initial Cost (Base Year Dollars) – dollar number (2 decimals)

Initial Occurrence (Years from Base Date) – integer (1 to 40)

Annual Rate of Change – number (% 2 decimals)

Recurring? – Yes/No Toggle

If Yes, Rate of Recurrence (Years) – integer (1 to 100)

## Contract Cost – Implementation

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Occurrence (Years from Base Date) – integer (0 to study period length + construction phase)

Cost (Base Year Dollars) – dollar number (2 decimals)

## Contract Cost – Recurring

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Initial Cost (Base Year Dollars) – dollar number (2 decimals)

Initial Occurrence – integer (0 to study period length + construction phase)

Annual Rate of Change – number (% 2 decimals)

Recurring? – Yes/No Toggle

If Yes, Rate of Recurrence (Years) – integer (1 to 100)

## Other Cost/Benefit

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Cost or Benefit? – Toggle

Group Tag – text input (character limit of 10?), autofill with existing tags already created?

Initial Occurrence – integer (0 to study period length + construction phase)

Value Per Unit – dollar number (2 decimals)

Number of Units – number (2 decimals)

Unit – text input (character limit of 10?)

Recurring? – Yes/No Toggle

Rate of recurrence (Years) – integer (1 to 100)

Rate of change (value)

Constant? – Yes/No Toggle

If No, single value – number (% 2 decimals)

If Yes, list of values – numbers (% 2 decimals)

Length of list is study period length

Rate of change (units)

Constant? – Yes/No Toggle

If No, single value – number (% 2 decimals)

If Yes, list of values – numbers (% 2 decimals)

Length of list is study period length

## Other Non-Monetary

Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Group Tag – text input (character limit of 10?), autofill with existing tags already created?

Initial Occurrence – integer (0 to study period length + construction phase)

Number of Units – number (2 decimals)

Unit – text input (character limit of 10?)

Recurring? – Yes/No Toggle

Rate of recurrence (Years) – integer (1 to 100)

Rate of change (value) (same as price escalation)

Constant? – Yes/No Toggle

If No, single value – number (% 2 decimals)

If Yes, list of values – numbers (% 2 decimals)

Length of list is study period length

Rate of change (units)

Constant? – Yes/No Toggle

If No, single value – number (% 2 decimals)

If Yes, list of values – numbers (% 2 decimals)

Length of list is study period length

# List of Components

Project Name – text box (character limit of 30?)

Description – text box (character limit of 200?)

Analyst – text box (character limit of 30?)

Analysis Type – Drop down

Constant or Current Dollar Analysis? – Constant / Current Toggle or Radial

Length of Study Period – integer (1 to 40 years)

Discounting Convention – drop down

Discount Rate – Real – number (% 2 decimals) (limit between -100% and +100%)

Discount Rate – Nominal – number (% 2 decimals) (limit between -100% and +100%)

Inflation Rate – number (% 2 decimals) (limit between -100% and +100%)

Country – searchable drop down

State – searchable drop down

City – text box (character limit of 50?)

ZIP – drop down list based on State

Non-US State/Province – text box (character limit of 30?)

Emissions Rate Scenario – drop down

Social Cost of GHG Scenario – drop down

Fuel Type – Drop Down

Customer Sector – Drop down

Initial Cost Per Unit – dollar number (2 decimals)

Annual Consumption – number (2 decimals)

Unit – drop down (need to find conversion code for each of these groupings)

Demand Charge (Annual) – dollar number (2 decimals)

Rebate (Annual) – dollar number (2 decimals)

Constant? – Yes/No Toggle

Single Constant Value – number (% 2 decimals)

Annual Value – List – number (% 2 decimals)

Component to create multiple set of inputs for seasons (see water pages)

Initial Cost (Base Year Dollars) – dollar number (2 decimals)

Annual Rate of Change – number (% 2 decimals)

Expected Life (Years) – integer (0 to 100)

Cost Adjustment Factor – number (% 2 decimals)

Cost Phase In (Years) – integer (0 to 3)

Percent of initial cost by year of phase in – table

Automate year

number (% 2 decimals)

Residual Value

Approach – Percent or Dollar Toggle

Value

If Percent – number (% 2 decimals)

If Dollar – dollar number (2 decimals)

Recurring? – Yes/No Toggle

Rate of Recurrence (Years) – integer (1 to 100)

Initial Occurrence (Years from Base Date) – integer (0 to study period + construction phase)

Cost or Benefit? – Toggle

Group Tag – text input (character limit of 10?), autofill with existing tags already created?