CADMUS

Memorandum

To:	Mitch Horrie; Public Service Commission of Wisconsin
From:	Jane Colby and Michelle Pham, Apex Analytics; Elissa Slocum and Jill Krueger, Cadmus
Subject:	Focus on Energy Nonresidential Lighting Application Benchmarking Findings and Recommendations
Date:	January 20, 2025

Background

In CY 2023, the Focus on Energy evaluation team conducted surveys and in-depth interviews with participating trade allies as part of the nonresidential portfolio evaluation. Through those efforts, trade allies reported complications with the nonresidential lighting application and recommended simplifying application paperwork, which required access to several documents that were not always easily accessible. Some trade allies also suggested streamlining the custom lighting incentive calculations and offering an online application portal to improve the process. Trade allies also reported some reliance on Focus on Energy's energy advisors to complete applications.

In response to this feedback, the evaluation team conducted a benchmarking activity in CY 2024 to examine other utilities' nonresidential lighting program applications. The primary objectives of the benchmarking task were twofold: (1) to compare the requirements of Focus on Energy's nonresidential lighting project applications to other utility-funded programs and (2) to identify opportunities to simplify or streamline the Focus on Energy application.

Methodology

This memo presents a benchmarking analysis of nonresidential lighting incentive applications offered by nine utilities: Commonwealth Edison (ComEd), Consolidated Edison (Con Edison), Consumers Energy, Dominion Energy, Duke Energy, Energy Trust of Oregon (Energy Trust), Mass Save, National Grid, and Puget Sound Energy. The initial benchmarking focused on two metrics: the length of the application (represented by the number of form items required) and the documentation necessary for submission (e.g., building floor plans). For each program and project type, the team sorted applications by the number of form items to identify which programs required the least information and application attachments.

After sorting, the team selected key measures to more closely examine each utility's project-specific applications. This analysis focused on measures that would require the more complex Focus on Energy application pathways requiring supplemental application materials and included the following project types and supplemental documents:

- Interior occupancy sensors (supplemental data sheet)
- LED lighting power density (new construction interior lighting workbook)

- Kit and fixture retrofits, non-one-for-one replacement (comprehensive lighting solutions workbook)
- Supplemental LED grow lights for greenhouses (horticultural lighting workbook)
- Custom project (business custom workbook)

The evaluation team reviewed all selected measures to track the required project information, measure information, documents or attachments, and any other notable features. Instead of documenting all nine utilities' applications and requirements for each selected measure, the team compared the most streamlined application in length and required documents to Focus on Energy's requirements. To select the most streamlined application, the analysis included a qualitative assessment, counting form items, and also considered both the navigability of the application and type of information requested. The team found that some applications were more user-friendly and that some of the project or measure information could be more or less time-consuming to collect than others. This provided additional context for understanding the application experience beyond the quantity of information requested.

Lastly, the evaluation team conducted in-depth interviews with Focus on Energy advisors as part of the CY 2024 nonresidential portfolio evaluation. When appropriate, findings from those interviews are referenced in this memo as supporting material.

Prescriptive Measures

Trade allies and energy advisors largely expressed positive views of the application process for the prescriptive measures in the business lighting catalog, especially with the addition of deemed measures in recent years. As a result, these measures were not a focus of this benchmarking analysis. As one energy advisor stated: "I think when we moved downlight to a dollar amount for downlights instead of the watts reduced; that's one of the best things we could have done. With our prescriptive [measures], we're going to hit high on some for savings or low on others. If we can hit the average, let's just find the happy medium for deemed savings. Give them a dollar amount for [the] fixture and make it as easy as possible. Simple is better. That was a great move with our lighting catalog."

Lighting Application by Measure Type

Interior Occupancy Sensors

The interior occupancy sensor measure requires a supplemental data sheet (Table B) in addition to the standard application in the business lighting catalog. The supplemental data sheet provides "watts controlled" information to confirm installed equipment. Among the program applications included in the study, the team selected Duke Energy as the most streamlined project application.[1] While the Focus on Energy and Duke Energy applications require similar project items, the Focus on Energy application

[1] Duke Energy Smart $aver Business Lighting Application https://www.duke-energy.com/-/media/pdfs/for-your-business/incentives/2024/2024-nc-sc-lighting-application.pdf?rev=e4d6e5d53bb246c1bafeb09a8930b2c8

requires significantly more detailed information on measures. Both applications also had similar document requirements, with both requesting a minimum of three attachments (see Table 1).

Table 1. Interior Occupancy Sensor Project and Measure Information

Focus on Energy 16 project items, 16 measure items, 3 required docs	Duke Energy[2] 15 project items, 7 measure items, 3 required docs
Tax ID number, Company name, Address, Contact name, Job site business name, Electric utility, Electric account number, Job site customer contact, Phone, Email, Trade ally name, Phone, Email, Trade ally company, Address, Project completion date *Present but not required for lighting projects:* Gas utility, Gas account number	Tax ID number, Company name, Address, Contact name, Duke Energy account number, Phone, Email, Job site address, Equipment vendor/contractor/architect/engineer company name, Vendor contact, Phone, Address, Email, Payment mailing address, Date installed
(Standard App): • Incentive code • Manufacturer name • Model Number • Unit Measure • Quantity • Incentive per unit • Requested incentive • Incentive total (Required Supplemental Data Sheet Table B) • Location • Incentive code • Fixture description • Wattage Per Fixture • Quantity • Total Watts Controlled • Incentive Rate ($/watt • reduced) • Total Incentive	• Lamp make and model number (one field) • Control/sensor make and model number (one field) • Sum of watts controlled • Annual hours of operation • Cost per unit • Total incentive • Project type (checkbox)
Standard Incentive Application Supplemental Data Sheet Invoices per measure	Standard Incentive Application W-9 Invoices per measure

As shown in Table 2, Focus on Energy's standard application requires a few measure items, such as the requested incentive per unit and incentive code, that are also required in the supplemental data sheet.

[2] Duke Energy Smart $aver Business Lighting Application https://www.duke-energy.com/-/media/pdfs/for-your-business/incentives/2024/2024-nc-sc-lighting-application.pdf?rev=e4d6e5d53bb246c1bafeb09a8930b2c8

Table 2. Interior Occupancy Sensor, Comparison of Measure Information

Application Item	Focus on Energy		Duke Energy
	Standard Application	Supplemental Data Sheet	
Project completion date	X		X
Project type			(Checkbox)
Incentive code - Light	X		
Incentive code - Sensor	X	X	
Manufacturer name - Light	X		X
Manufacturer name - Sensor	X		X
Model number - Light	X		X
Model number - Sensor	X		X
Unit measure	X		(Pre-Filled)
Quantity	X	X	
Incentive per unit	X		(Pre-Filled)
Requested incentive (per measure)	X	X	X
Incentive total (all measures)	X		
Location		X	
Fixture description		X	
Wattage per fixture		X	
Total Watts controlled		X	X
Incentive rate ($/watt reduced)		X	(Pre-Filled)
Cost per unit			X
Annual hours of operation			X

Figure 1. Interior Occupancy Sensor, Side by Side

Focus on Energy

section 7

INCENTIVE PRODUCT INFORMATION

Refer to:

- **Applicable incentive catalog at focusonenergy.com/catalogs** for incentive codes, incentive per unit, and product eligibility requirements.
- **focusonenergy.com/qpls** for qualified products lists.
- **Your invoice** for Manufacturer and Model Number.
- **Business Incentive Product Information Sheet at focusonenergy.com/catalogs** if additional lines are needed.

PROJECT COMPLETION DATE: / /

INCENTIVE CODE	MANUFACTURER NAME	MODEL #	UNIT MEASURE	# OF UNITS (A)	INCENTIVE PER UNIT ($)	REQUESTED INCENTIVE (A X B)
(Example) L3111	STARK LIGHTING	LEDSV2F	Fixture	10	$ 20.00	$ 200.00
					$	$
					$	$
					$	$
					$	$
					$	$
					$	$
					$	$
					$	$

Manufacturer Specifications Attached (if applicable): Yes ○ — Subtotal from Incentive Product Information Sheet (if applicable) $

Itemized Invoice(s) Attached: Yes ○ — INCENTIVE TOTAL* $

B WORKSHEET FOR WATTS CONTROLLED MEASURES — PAGES 29-30

INCENTIVE CODE: L3406, L5061, L5062, L4812, L5063, L5064

LOCATION	INCENTIVE CODE	FIXTURE DESCRIPTION	(A) WATTAGE PER FIXTURE	(B) QUANTITY OF FIXTURES	(C) TOTAL WATTS CONTROLLED (A X B)	(D) INCENTIVE RATE ($/WATT CONTROLLED)	TOTAL INCENTIVE** (C X D)
(Example) School	L3406	45W LED 2x4 Troffer	45	75	3,375W	$0.10	$337.50

1. Excerpt of Table B from Focus Supplemental Data Sheet, required for Occupancy Sensor measure

Duke Energy

4. Prescriptive Measures for Controls And Sensors

Select One	Measure Description	Space Type	Rebate per watt controlled	Enter Quantity Watts Controlled	Total Rebate Before Cap
☐	Daylighting Control with Occupancy Sensors	Interior	$.15/watt controlled		
☐	Occupancy Sensors	Interior	$.10/watt controlled		
☐	Remote Mounted Daylight Sensor	Interior	$.10/watt controlled		
☐	Switch or Fixture Mounted Daylight Sensor	Interior	$.10/watt controlled		
☐	Switching Controls for Multi-level lighting	Interior	$.10/watt controlled		
☐	Time Clocks Internal Lighting	Interior	$.03/watt controlled		
☐	Photocells	Exterior	$.06/watt controlled		
☐	Photocells with Time Clocks	Exterior	$.10/watt controlled		
☐	Time Clocks External Lighting	Exterior	$.03/watt controlled		

Enter Equipment Make/Model and additional required information:

Lamp Make & Model Number	Control/Sensor Make/Model Number (matches spec sheet)	Project Type	Annual Hours of Operation	Equipment Cost per Unit (matches invoice) excluding labor	Date Installed and Operable (mm/yy)
		☐ New Existing ☐ New Construction ☐ Retrofit			
		☐ New Existing ☐ New Construction ☐ Retrofit			

While the supplemental data sheet is the briefest of the nonstandard lighting incentive applications (pictured in Figure 1), one energy advisor suggested removing it as a requirement for interior occupancy sensors and similar measures, saying, "For the majority of the lighting measures, I think we could eliminate the need for the SDS," as these measures required more assistance from energy advisors. The data sheet requirement also creates another application form that project stakeholders (customer, trade ally, or energy advisor) need to track.

New Construction Lighting Power Density

Focus's new construction lighting power density (LPD) measure requires both the standard application and the new construction interior lighting workbook, which is a separate Microsoft Excel spreadsheet. The required project items are roughly the same between Consumers Energy[3] (the selected comparison program administrator) and Focus on Energy, but the measure information is significantly more detailed in the Focus on Energy application. Though Consumers Energy requires less measure information than Focus on Energy, their document requirements are more taxing and require items such as a floor plan, schedule, and W-9. Both applications require or recommend the COMcheck form (see Table 3). A COMcheck form is a standardized document produced using U.S. Department of Energy's web or desktop software that verifies if new commercial or high-rise residential buildings, additions, or renovations, including lighting projects, comply with the IECC and ASHRAE Standard 90.1, as well as several state-specific codes. The lighting installer, engineer, designer, or program trade ally may create a COMcheck form, depending on project size.

[3] Consumers Energy Incentive Application November 2024 https://webtools.dnv.com/projects/Portals/3/Rebate%20Application.pdf?ver=cqHWL80tKmCHIpl42NJgIw%3d%3d

Table 3. LPD Project and Measure Information

Focus on Energy 26 project items, 12 measure items, 4 required docs	Consumers Energy[4] 26 project items, 4 measure items, 6 required docs
Standard App: Tax ID Number, Company Name, Address, Contact Name, Job Site Business Name, Electric Utility, Electric Account Number, Gas Utility, Gas Account Number, Job Site Customer Contact, Phone, Email, Trade Ally Name, Phone, Email, Trade Ally Company, Address, Project Completion Date. NC Interior Lighting (LPD) Workbook: Customer, Trade Ally/Installer, Contact Name, Email, Phone, Project Description, Completion Date, Facility Hours	Company Name, Contact, Title, Address, Phone, Email, CE Natural Gas Account Number, CE Electric Account Number, EIN/Tax ID, Site Address, Completion Date, Company Name Of Contractor/TA/Designer, Name, Title, Phone, Email, Address, Rebate Processor Name, Email, Total Project Cost, Actual Completion Date, Company Name, Project #
(Standard App): • Incentive Code • Manufacturer Name • Model Number • Unit Measure • Quantity • Incentive Per Unit • Requested Incentive • Incentive Total (NC Interior Lighting (LPD) Workbook): • Annual Hours of Use • Total sq ft/Area (for each area) • Allowed Watts/sq ft/Area • New System Installed Watts/Area	• Description Of Facility Space • Occupied Area (sq ft) • Total Allowed Watts • Total Proposed Watts
Standard Incentive Application NC Interior Lighting Workbook COMcheck (recommended) Invoices	Standard Incentive Application COMcheck Floor Plans Schedules Spec Sheets W-9

One factor contributing to the complexity of the Focus on Energy application is the requirement of the standard application (which includes eight measure items) on top of the new construction interior lighting workbook (which includes four measure items). Without the standard application, the measure information in the interior lighting workbook would be comparable to Consumers Energy's application. Table 4 summarizes the application requirements between Consumers Energy and Focus on Energy, and Figure 2 provides a visual comparison of the two program applications.

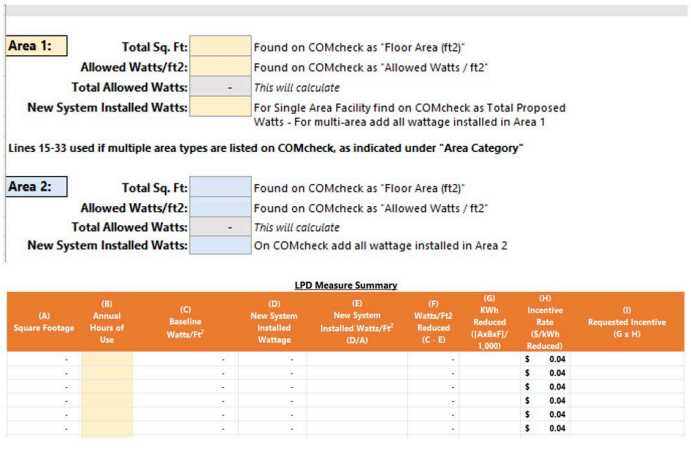
[4] Consumers Energy Incentive Application November 2024 https://webtools.dnv.com/projects/Portals/3/Rebate%20Application.pdf?ver=cqHWL80tKmCHIpl42NJgIw%3d%3d

Table 4. LPD, Comparison of Measure Information

Application Item		Focus on Energy		Consumers Energy
		Standard Application	Interior Lighting Workbook	
Completion Date		X		X
Incentive Code		X		
Unit Measure		X		
# of Units		X		
Incentives Per Unit		X		
Requested Incentive		X		X
Total Project Cost				X
		(For Each Space Type)		
Description of Space			Included in COMcheck	X
Transferred from COMcheck Report	Annual Hours of Use		X	
	Square Footage		X	X
	Allowed Watts/sq ft		X	X
	New System Installed Watts		X	X

Figure 2. LPD, Side by Side

Focus NC Interior Lighting Workbook



Area 1:	Total Sq. Ft:	Found on COMcheck as "Floor Area (ft2)"
	Allowed Watts/ft2:	Found on COMcheck as "Allowed Watts / ft2"
	Total Allowed Watts:	- This will calculate
	New System Installed Watts:	For Single Area Facility find on COMcheck as Total Proposed Watts - For multi-area add all wattage installed in Area 1

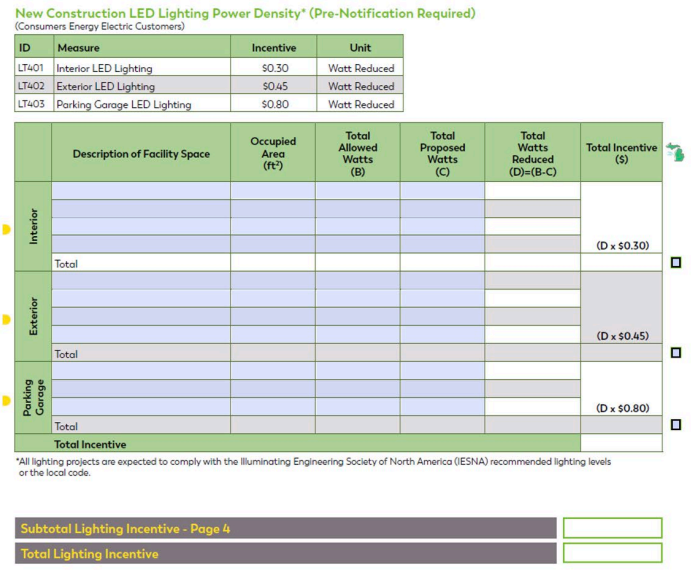
Lines 15-33 used if multiple area types are listed on COMcheck, as indicated under "Area Category"

Area 2:	Total Sq. Ft:	Found on COMcheck as "Floor Area (ft2)"
	Allowed Watts/ft2:	Found on COMcheck as "Allowed Watts / ft2"
	Total Allowed Watts:	- This will calculate
	New System Installed Watts:	On COMcheck add all wattage installed in Area 2

LPD Measure Summary

(A) Square Footage	(B) Annual Hours of Use	(C) Baseline Watts/Ft²	(D) New System Installed Wattage	(E) New System Installed Watts/Ft² (D/A)	(F) Watts/Ft2 Reduced (C - E)	(G) KWh Reduced ([AxBxF]/1,000)	(H) Incentive Rate ($/kWh Reduced)	(I) Requested Incentive (G x H)
-		-	-		-		$ 0.04	
-		-	-		-		$ 0.04	
-		-	-		-		$ 0.04	
-		-	-		-		$ 0.04	
-		-	-		-		$ 0.04	
-		-	-		-		$ 0.04	

Consumers Energy



New Construction LED Lighting Power Density* (Pre-Notification Required)
(Consumers Energy Electric Customers)

ID	Measure	Incentive	Unit
LT401	Interior LED Lighting	$0.30	Watt Reduced
LT402	Exterior LED Lighting	$0.45	Watt Reduced
LT403	Parking Garage LED Lighting	$0.80	Watt Reduced

	Description of Facility Space	Occupied Area (ft²)	Total Allowed Watts (B)	Total Proposed Watts (C)	Total Watts Reduced (D)=(B-C)	Total Incentive ($)
Interior						
						(D x $0.30)
	Total					
Exterior						
						(D x $0.45)
	Total					
Parking Garage						
						(D x $0.80)
	Total					
	Total Incentive					

*All lighting projects are expected to comply with the Illuminating Engineering Society of North America (IESNA) recommended lighting levels or the local code.

Subtotal Lighting Incentive - Page 4	
Total Lighting Incentive	

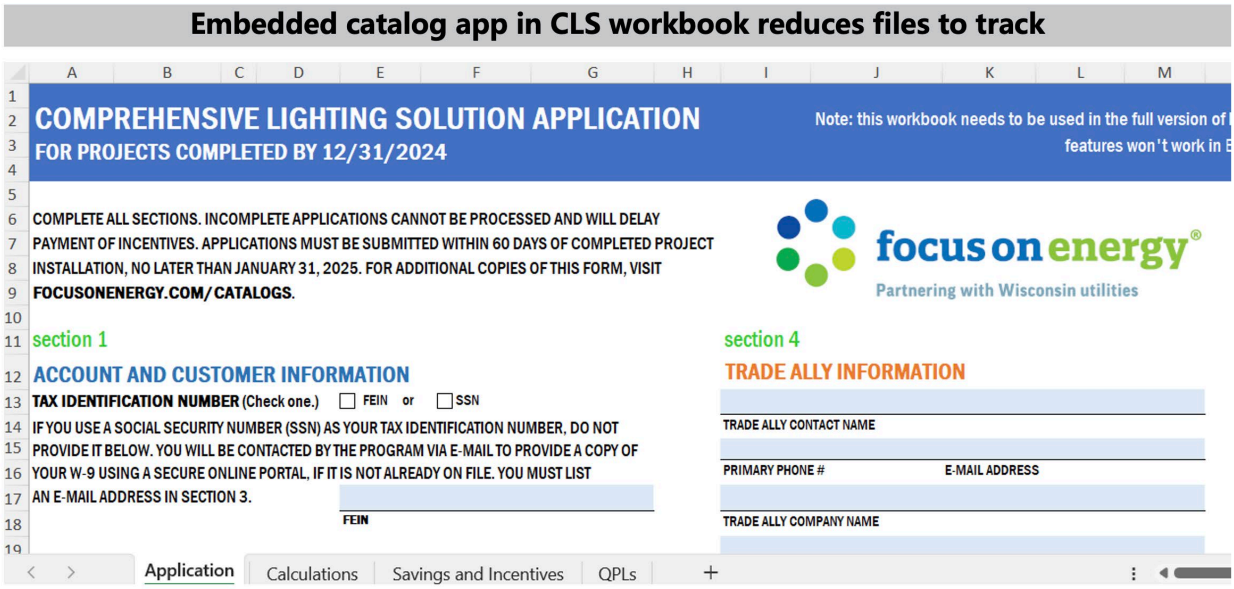
One interviewed energy advisor proposed that Focus on Energy remove the COMcheck recommendation in LPD measures, saying: "I'd like to see the COMcheck because it gives me an idea, but to have that be a requirement… I don't know if it's needed with how we go about the project. [I've] never had one line up perfectly with LPD or invoices." Two energy advisors reported that the COMcheck

rarely matched with the final project and that removing it could streamline applications. In other utility incentive programs, lighting applications commonly recommend COMcheck forms.

Kit and Fixture Retrofits

For fixture or kit retrofit lighting projects that are not one-for-one replacements or that add connected controls, Focus on Energy requires the comprehensive lighting solutions (CLS) workbook (one-for-one replacement and upgrades can typically utilize the prescriptive incentive form). In contrast to other Focus on Energy measures, retrofit kit projects using the CLS workbook do not require the attachment of the standard application as a separate document. Instead, the CLS workbook can stand alone, as the standard application is embedded in a tab of the workbook (Figure 3). This differs from LPD, where applicants must prepare the standard application PDF and new construction interior lighting workbook separately.

Figure 3. Standard Application Insert in CLS Workbook



Once again, the team selected Duke Energy's application approach[5] as the simplest approach to retrofit kits among other benchmarked utilities, with Focus on Energy's application requiring more measure information (e.g., footcandles). As shown in Table 5, Duke requests two-thirds of Focus on Energy's project information and roughly half of Focus on Energy's measure information. Note that Duke Energy usually requires preapproval forms for custom measures; however, there are exceptions made for

[5] Duke Energy Smart $aver Business Lighting Application https://www.duke-energy.com/-/media/pdfs/for-your-business/incentives/2024/2024-nc-sc-lighting-application.pdf?rev=e4d6e5d53bb246c1bafeb09a8930b2c8

lighting projects with less than 700,000 kWh savings, which do not require the submittal of a custom application for preapproval.[6]

Table 5. Retrofit Kit Project and Measure Information

Focus on Energy 19 project items, 15 measure items, 2 required docs	Duke Energy 13 project items, 7 measure items, 3 required docs
Tax ID number, Company name, Address, Contact name, Job site business name, Electric utility, Electric account number, Gas utility, Gas account number, Job site customer contact, Phone, Email, Trade ally name, phone, email, Trade ally company, Address, Customer name, Facility name	Company name, Contact name, Phone, Email, Duke Energy account number, Job site address, Equipment vendor/contractor/architect/engineer company name, Contact name, Phone, Address, Email, Payment mailing address, Tax ID number for payee
• Location • Existing Lighting Category (dropdown) • Existing Lighting Fixture (dropdown) • Quantity • Proposed Lighting Fixture (dropdown) • Proposed Quantity • Prescriptive Incentive Code • Unit Code • Sector (Dropdown) • Existing footcandles • Proposed footcandles • Completion date (This All Populates 3 Additional Drop Downs/Prefills to Select in Savings and Incentives Tab)	• Quantity • Total Rebate Before Cap • Lamp Make and Model Number (one field) (Control Make/Model Number (if applicable)) • Annual Hours of Operation • Equipment Cost Per Unit • Date Installed
Comprehensive Lighting Workbook DesignLights (DLC) Qualified Products List (QPL)	Standard Incentive Application W-9 Invoices per measure

The Duke Energy application forgoes extensive information on baseline fixtures (e.g., baseline fixture, quantity, and wattage) and also requires less details like footcandles measurements (See Table 6.) The workbook comparison is shown in Figure 4. The Duke Energy application requires the Standard Incentive Application, customer W-9, and invoices per measure, whereas the Focus application requires just the CLS workbook and QPL specification sheets.

[6] Duke Smart $aver® Custom Overview https://www.duke-energy.com/-/media/pdfs/for-your-business/incentives/ss-custom-overview.pdf?rev=c95d78399f02471587de19165d041eb5

Table 6. Retrofit Kit, Comparison of Measure Information

Application Item	Focus on Energy	Duke
	Comprehensive Lighting Solution Workbook	
Location	X	
Existing lighting category	X (dropdown)	
Existing lighting fixture	X (dropdown)	
Quantity	X	
Proposed lighting fixture	X (dropdown)	X (Make model)
Proposed quantity	X	X
Prescriptive incentive code	X	
Unit code	X	X (Make number)
Sector	X (dropdown)	
Existing footcandles		
Proposed footcandles		
Completion date		X
Total rebate		X
Hours of operation		X
Equipment cost per unit		X

Figure 4. Retrofit Kit Data Collection Workbooks, Side by Side

Focus CLS Work-book

EXISTING LIGHTING									PROPOSED LIGHTING			
Line #	Location	Existing Lighting Category	Existing Lighting Fixture/Lamp	Description / Notes	Existing QTY	Default Input Watts	Manual Input Watts	Existing Annual Hours	Proposed Lighting Category	Proposed Lighting Fixture/Lamp	Description / Notes	Proposed QTY
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

			ADDITIONAL INPUTS			LIGHTING ENERGY USE				TOTAL ENERGY SAVINGS AND INCENTIVE					COSTS		Notes & Supporting Docs
Default Input Watts	Manual Input Watts	Proposed Annual Hours	Interior or Exterior?	On NLC Controls?	Qualifies for Prescriptive	Existing Peak kW	Existing kWh	Proposed Peak kW	Proposed kWh	Watts Reduced	Peak kW Savings	Annual kWh Savings	Qualifies for Code	Prescriptive Incentive Code	Unit Cost	Total Cost	
				No												$ -	
				No												$ -	
				No												$ -	
				No												$ -	
				No												$ -	
				No												$ -	
				No												$ -	
				No												$ -	
				No												$ -	
				No												$ -	
																$ -	

Duke Measure Table

1.a. Interior LED Panels

Select One	Measure Description	Fixture Control Type	Rebate per fixture		Enter Quantity	Total Rebate Before Cap
			Fixture with LLLC	Fixture without LLLC		
☐	LED Panels 1x4	☐ With LLLC ☐ Without LLLC	$35/fixture	$27.50/fixture		
☐	LED Panels 2x4	☐ With LLLC ☐ Without LLLC	$60/fixture	$44/fixture		
☐	LED Panels 2x2	☐ With LLLC ☐ Without LLLC	$35/fixture	$22/fixture		

Enter Equipment Make/Model and additional required information:

Lamp Make & Model Number	Make/Model Number (matches spec sheet)	Project Type	Existing Fixture Type (retrofit kits)	Annual Hours of Operation	Equipment Cost per Unit (matches invoice) excluding labor	Date Installed and Operable (mm/yy)
		☐ Replace Failed ☐ Replace Early ☐ New Existing ☐ New Construction				
		☐ Replace Failed ☐ Replace Early ☐ New Existing ☐ New Construction				

- LED luminaire must be listed on DLC v5.0 or newer, category Indoor and general application luminaires. The LED luminaire must be listed in the appropriate primary use category 1x4, 2x4, or 2x2.
- LED retrofit kits must be listed on DLC. Incentives will be based off the existing fixture in lieu of primary use category on DLC.

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During an interview, an energy advisor suggested considering whether CLS items warrant a separate pathway from the custom workbook pathway. The energy advisor suggested that measures requiring the CLS workbook could be incorporated into the general custom pathway rather than branching off into its own workbook, stating: “[I’d like it] if there was a way to have networked lighting controls as its own

standalone thing and get rid of the CLS workbook… because everything in there can be done as a custom [project], and why have two competing things?"

One potential benefit of this change is that it would simplify the application process for the customer applicant by reducing the number of decisions they need to make, such as selecting the appropriate workbook or application.

Supplemental Greenhouse Grow Light

Horticultural lighting measures are listed in the 2024 agribusiness catalog, while other lighting measures are listed in the business lighting catalog. The full application is the horticultural lighting workbook, which does not require the standard application seen in business lighting incentives.

The evaluation team selected Puget Sound Energy[7,8] as the program comparison for the grow light measure. Both Puget Sound Energy and Focus on Energy applications require a similar number of project items and attachments in total. However, the Focus on Energy application requests the layout plans for the baseline and energy-efficient LED, which may be more time-consuming to provide (see Table 7).

[7] Puget Sound Energy Horticultural Lighting Calculator https://www.pse.com/-/media/PDFs/REBATES/Horticulture/2024-PSE-Horticultural-LTG-Calculator.xlsx?rev=46989aae19e247d8a4d6200c16c713b3&modified=20240115164758&hash=881614BDC215EF9AB7A0FEA5D5BEB40D

[8] Puget Sound Energy Energy-efficient Custom Grant Application https://www.pse.com/-/media/PDFs/REBATES/4524_BEMRetrofitApplication.pdf?rev=8ad86778a234481f9cee7b234cf5b304&modified=20241113193954&hash=875406FF76722B60D468E9850D04957F

Table 7. Grow Light Project and Measure Information

Focus on Energy 17 project items, 21 measure items, 3 required docs	Puget Sound Energy[9,10] 22 project items, 11 measure items, 4 required docs
Tax ID number, Company name, Address, Contact name, Job site business name, Electric utility, Electric account number, Gas utility, Gas account number, Job site customer contact, Phone, Email, Trade ally name, phone, email, Trade ally company, Address	Name, PSE account number, Contact, Email, Form, Project name, Address, Start date, End date, Estimated cost, Facility sq ft, Energy savings in kWh/yr, Project description, TA business, TA contact, Email, Form, Check name, Tax ID, Payee contact, Email, Address
Baseline Fixture Description • Quantity • Wattage • Annual Operating Hours • Project Cost Proposed Fixture Description • Quantity • Wattage • Use of Controls (dropdown) • Control Type • Lighting Control Savings Factor (must show calculation) • Light Solution (dropdown) • Building Type (dropdown) Then Copy into Tab (from Calculations Tab) 8 Additional Items: Estimated Completion Date, Baseline Annual Electrical Usage Without Automated Controls, Proposed Annual Usage With Automated Controls, Baseline Electrical Demand, Proposed Electrical Demand, Cost Of Electricity, Project Cost For Baseline, Project Cost For Energy Efficient Design	Proposed Fixture Description • Location • Canopy Type (dropdown) • Quantity • Canopy Area • Proposed LED Make • LED µmol/J • LED Peak Watts • LED Average Watts • Proposed LED Cost • Annual Hours • Select Baseline
Horticultural Lighting Workbook 1 Baseline LED Layout Design PDF 1 Energy-Efficient LED Layout Design PDF Spec sheet or QPL PDF per measure	Horticultural lighting calculator Grant application DLC QPL Spec sheets

At the measure level, the PSE application forgoes extensive information on baseline fixtures (e.g., baseline fixture, quantity, and wattage), though it requests more information than Focus on Energy's application on the specific LED wattage variance, like peak and average watts. Focus on Energy has additional questions and form items, but many are simple dropdown selections. As shown in Table 8,

[9] Puget Sound Energy Horticultural Lighting Calculator https://www.pse.com/-/media/PDFs/REBATES/Horticulture/2024-PSE-Horticultural-LTG-Calculator.xlsx?rev=46989aae19e247d8a4d6200c16c713b3&modified=20240115164758&hash=881614BDC215EF9AB7A0FEA5D5BEB40D

[10] Puget Sound Energy Energy-efficient Custom Grant Application https://www.pse.com/-/media/PDFs/REBATES/4524_BEMRetrofitApplication.pdf?rev=8ad86778a234481f9cee7b234cf5b304&modified=20241113193954&hash=875406FF76722B60D468E9850D04957F

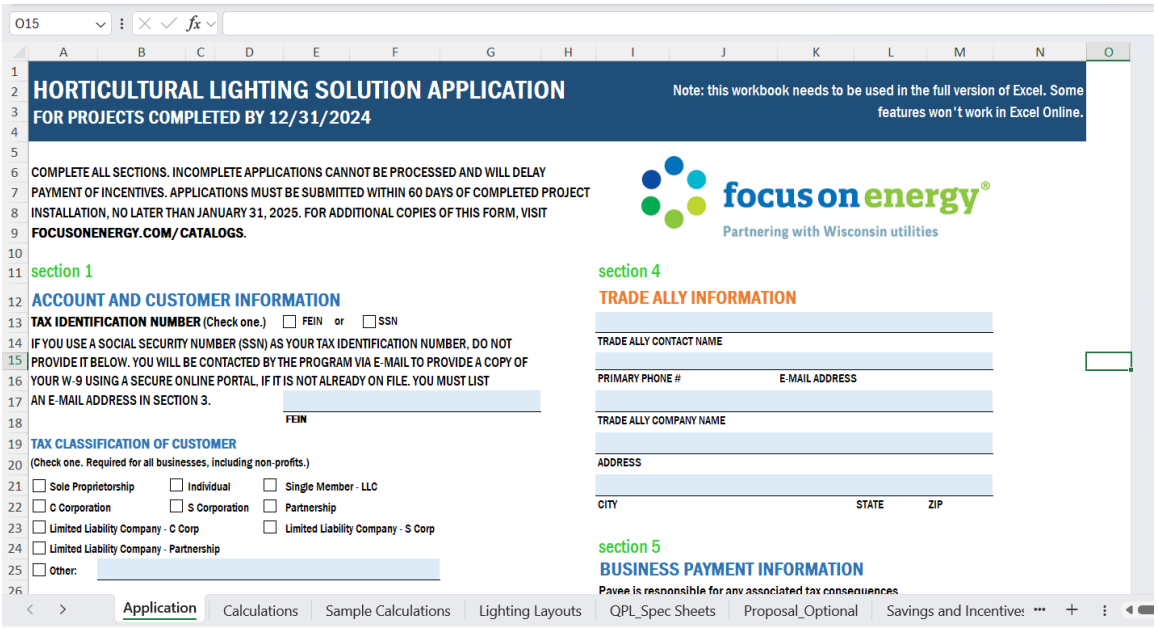
Puget Sound Energy asks for around the same amount of lighting information, though there are less form items around baseline equipment.

Table 8. Grow Light, Comparison of Measure Information

Application Item	Focus on Energy Horticultural Lighting Workbook	PSE
Baseline fixture quantity	X	
Baseline fixture wattage	X	
Annual operating hours	X	X
Project cost	X	
Proposed fixture quantity	X	X
Proposed fixture wattage	X	
Proposed LED make		X
Proposed LED cost		X
Use of controls	X (dropdown)	
Control type	X	
Lighting control savings factor	X (must show calculation)	
Light solution	X (dropdown)	
Location		X
Canopy type		X (dropdown)
Canopy area		X
LED µmol/j		X
LED peak watts		X
LED average watts		X
Select baseline (e.g., HPS/MH grow light systems)		X (dropdown)

As shown in Figure 5, the horticultural workbook has the horticultural standard application embedded into the first tab of the workbook. As with the CLS workbook, this reduces the number of independent files that applicants must collect.

Figure 5. Horticultural Workbook Application



In the horticultural workbook, there is a calculator tab (Sample Calculations) to populate outputs like annual kWh usage. These outputs are requested in another tab (Savings and Incentives). However, the calculator table output is not linked to the Savings and Incentives tab, despite both being in the horticultural workbook. The applicant is directed to "paste or link values" instead (see Figure 6).

Figure 6. Horticultural Workbook Calculations Tab

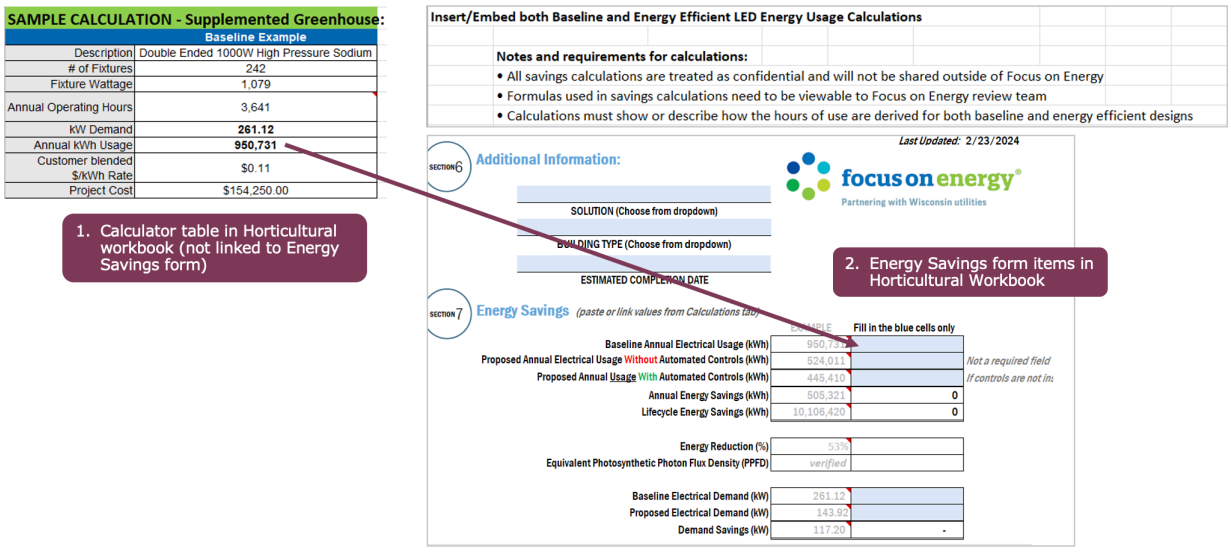
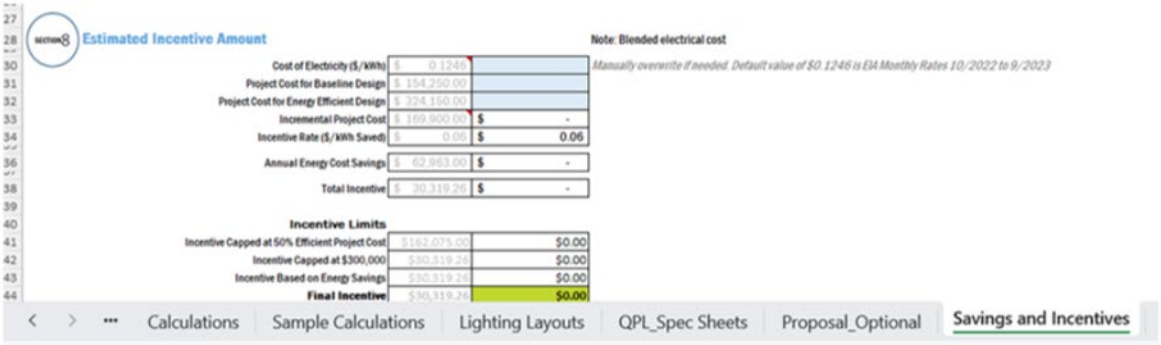
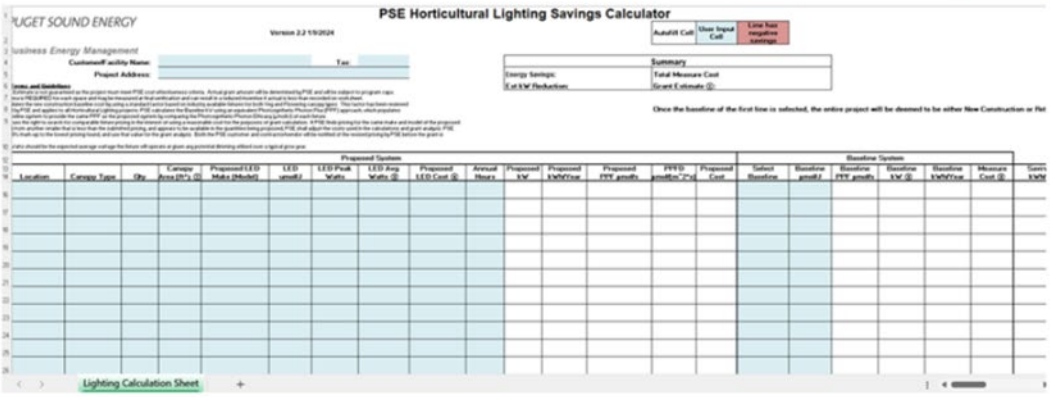


Figure 7. Horticultural Workbooks, Side by Side

Focus Horticultural Workbook



PSE Horticultural Calculator



Custom New Construction Lighting Projects

Focus on Energy custom incentive projects require the use of the custom workbook. Dominion Energy's Virginia Targeted Sector Programs[11] (the selected comparison program administrator) provide incentives for hotel, healthcare and lodging custom projects, and also utilizes a custom workbook. Both Dominion Energy's[12] and Focus on Energy's custom workbooks are in Excel spreadsheets and request a significant amount of project information for custom projects. To receive pre-approval for the project, Focus on Energy applicants must submit a pre-approval form, which is essentially the lighting catalog standard application. Dominion Energy custom projects require pre-approval as well, and the process requires the submittal of the custom workbook and an on-site inspection prior to installation.[13,14] The initial Focus on Energy customer pre-approval application accounts for 20 project items (see Table 9), and the custom workbook has 37 project form entries. An additional 15 items of the custom projects' general information are assigned to the energy advisor, such as the impact statement project summary and how assistance overcame barriers. These items appear to be more time-consuming than other project details and may require at least a paragraph of text, if not more. Not all fields are required for lighting applications, such as the Process Flow Diagram, but they are not necessarily indicated as optional within the application. Dominion Energy has 38 project items directed at the customer compared to the 57 total entries requested by Focus on Energy.

[11] Dominion Energy Virginia Targeted Sectors Programs https://www.dominionenergy.com/virginia/save-energy/targeted-sector-programs

[12] Dominion Energy Virginia Custom Application https://dominionenergyincentives.capturesportal.com/wp-content/uploads/2023/04/Dominion-Energy-Custom-Incentive-Application.xlsx

[13] Dominion Energy Virginia Program Terms and Conditions: Hotel and Lodging https://dominionenergyincentives.capturesportal.com/wp-content/uploads/2023/04/Dominion-Energy-Program-Terms-and-Conditions_Hotel-and-Lodging.pdf

[14] Dominion Energy Virginia Program Terms and Conditions: Healthcare https://dominionenergyincentives.capturesportal.com/wp-content/uploads/2023/04/Dominion-Energy-Program-Terms-and-Conditions_Healthcare.pdf

Table 9. Custom Lighting Project Information

Focus on Energy 72 project items (20 from initial customer custom application)	Dominion Energy 38 project items
Pre-approval Application: Application Name, Tax ID Number, Company Name, Address, Contact Name, Job Site Business Name, Electric Utility, Electric Account Number, Job Site Customer Contact, Phone, Email, Trade Ally Name, Phone, Email, Trade Ally Company, Address, Project Start Date, Project Completion Date, Facility Type (Checkbox), Brief Project Description. **Custom Workbook**: Overall Project Description, Baseline Conditions, Proposed Conditions, Process Flow Diagram, Program (dropdown), Customer Incentive Type (dropdown), Offering (dropdown), Sector (dropdown), Energy Advisor (dropdown), Application Received Date, Application ID, Customer FEIN, Customer Account Name, Customer Address, Contact Name, Phone, Email, Project Type, New Construction Project (Y/N), Site Address (if different than Customer Address), Electric Utility, Electric Utility Account Number, Gas Utility Info or Exclusion, Property Usage, Trade Ally Name, Trade Ally Address, Project Probability, Estimated Completion, Payee, Payment Address, Estimated Total Project Cost, Estimated Incremental Cost, Cost Source, Cost Explanation, Description of Savings Calculations Method, Savings Equation for Baseline Conditions, Savings Equation for Proposed Conditions. *Energy Advisor Only*: Impact Statement Project Summary, Explanation of Involvement, Project Barriers (checkboxes), Type of Assistance (dropdown), Customer Staff Given Assistance, Date of Assistance, How Assistance Overcame Barriers, Customer Contacts Worked With, Customer Contact Title, Company, Phone, List of Potential Future Actions Resulting from Involvement, Signature, Title, Date.	Site Name, Service Address, Mailing Address (if different), Electric Account Number, Building Type (dropdown), Building Specification (dropdown), Cooling Type (dropdown), Space Heating Type (dropdown), Building Ownership (dropdown), Annual Operating Hours, Square Footage, Number of Floors, Year Built, Existing Water Heating Type (dropdown), Project Name, How Applicant Heard of Program, Installed Yet or Not Installed, Project Description, Estimated Start Date, Legal Company Name, Company Address (dropdown from prefilled), Contact Name, Title, Primary Phone, Email, Site Contact Same as Company Contact (dropdown), (If Site Contact is Not Company Contact: Site Contact Name, Title, Primary Phone, Email), TA Involvement (dropdown), TA/Contractor Company, Mailing Address, TA/Contractor Name, Title, Primary Phone, Email, Payee Type (dropdown), Tax Entity (dropdown), Federal Tax ID Number, Signature of Account Owner, Signer Title, Date of Signature

At the measure level, Dominion and Focus on Energy ask for comparable amounts of information, a close comparison of 16 required items from Focus and 13 for Dominion (see Table 10). Focus on Energy asks for more project costs information within the Est Project Costs tab in the custom workbook, including an explanation of costs per measure. It requests detailed measure cost information, asking for: "A breakdown of the costs is required, into the following cost categories, whenever possible; costs should include taxes and fees: Engineering/design and permits; Procurement by customer; Contractor procurement, construction/installation, startup; Demolition/disposal." Labor costs are excluded from the breakdown. In comparison, Dominion requests measure costs broken into two categories, labor costs and material costs, with no cost information requested on categories like permits and demolition.

Table 10. Custom Lighting Measure Information Install

Focus on Energy 16 measure items, 6 required docs		Dominion Energy 13 measure items, 7 required docs
• Measure Name • Measure Type (dropdown) • Measure Group (dropdown) • MMID & Measure Description • Claim Only (dropdown) • Ramp-up Plan required (dropdown) • Installation Reason/Project type (dropdown) • (NC Only) Incremental Cost • Measure Cost	• Baseline Peak kW • Baseline First Year kWh • Proposed Peak kW • Proposed First Year kWh • Measure Total Project Cost • Measure Incremental Cost • Source of Cost Information • Explanation of Costs (e.g., procurement)	• Install Location • Type (dropdown) • Measure Type (dropdown) • Manufacturer • Model • Baseline Equipment Detail • Baseline Energy Usage in kWh • Baseline Power Usage kW • Proposed Equipment Detail • Proposed Energy Usage in kWh • Proposed Power Usage kW • Material Cost of Measure Total • Labor Cost of Measure Total
Business Custom Workbook Scope of Work PDF Application Form Spec Sheets Historical Utility Data Documentation (in many cases) Proposal for Qualifying Upgrades		Application Workbook Scope of Work W-9 Spec Sheets Utility Bill DLC QPL Photo of original fixtures

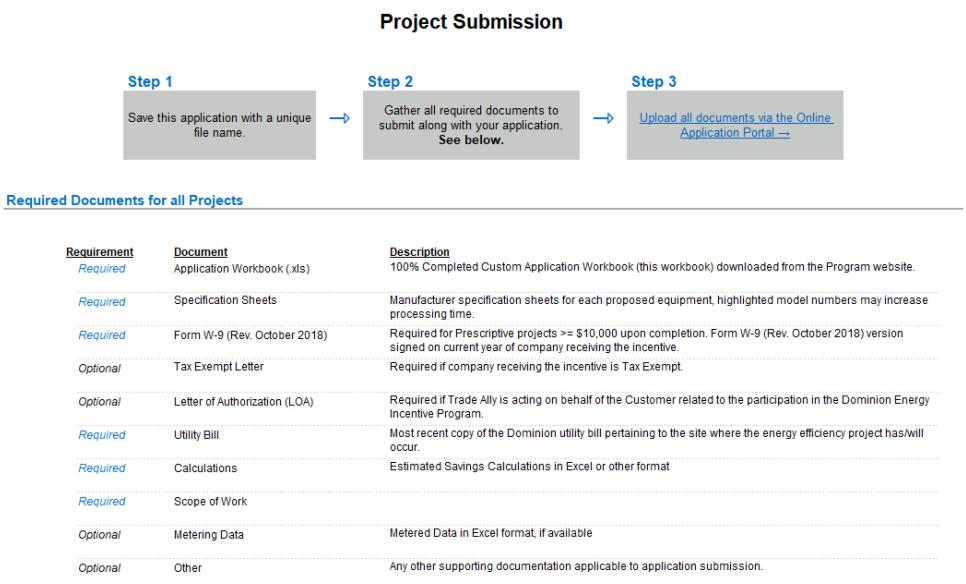
Focus on Energy and Dominion Energy have comparable, sizable documentation requirements. Dominion Energy requests photographs of existing lamps with wattage displayed, which is a significant attachment to the application.

Table 11. Custom, Comparison of Measure Information

Application Item	Focus on Energy	Dominion Energy
Install Location		X
Baseline Equipment Description		X
Measure Name	X	X (Manufacturer and Model)
Measure Type	X (dropdown)	X (dropdown)
Measure Group	X (dropdown)	
Proposed Equipment Description	X	X (Equipment Detail)
Installation Reason/Type	X	X
Ramp-up Plan	X (dropdown)	
Claim Only	X (dropdown)	
Measure Cost	X	
Baseline Peak kW	X	X
Baseline First Year kWh	X	X
Proposed Peak kW	X	X
Proposed First Year kWh	X	X
Measure Total Project Cost	X	X
Measure Incremental Cost	X	
Source of Cost Information	X	
Explanation of Costs	X	
Labor Cost of Measure		X

Dominion Energy has an Online Application Portal for customers to submit their custom applications. After customers complete Dominion Energy's custom workbook, the customer uploads the spreadsheet and all supporting documentation into Dominion's Online Application Portal. The workbook has a Submissions Instructions tab at the end of the workbook that lists the required documents for the custom application. While the required documents include typical items like the project scope of work, there is no note about additional forms or form items within the portal (Figure 8). We took this to mean that all user input required for the custom application is captured within the custom workbook; however, we cannot confirm this without a Dominion Energy account.

Figure 8: Dominion Energy Project Submission Requirements



Project Submission

Step 1
Save this application with a unique file name.

Step 2
Gather all required documents to submit along with your application. **See below.**

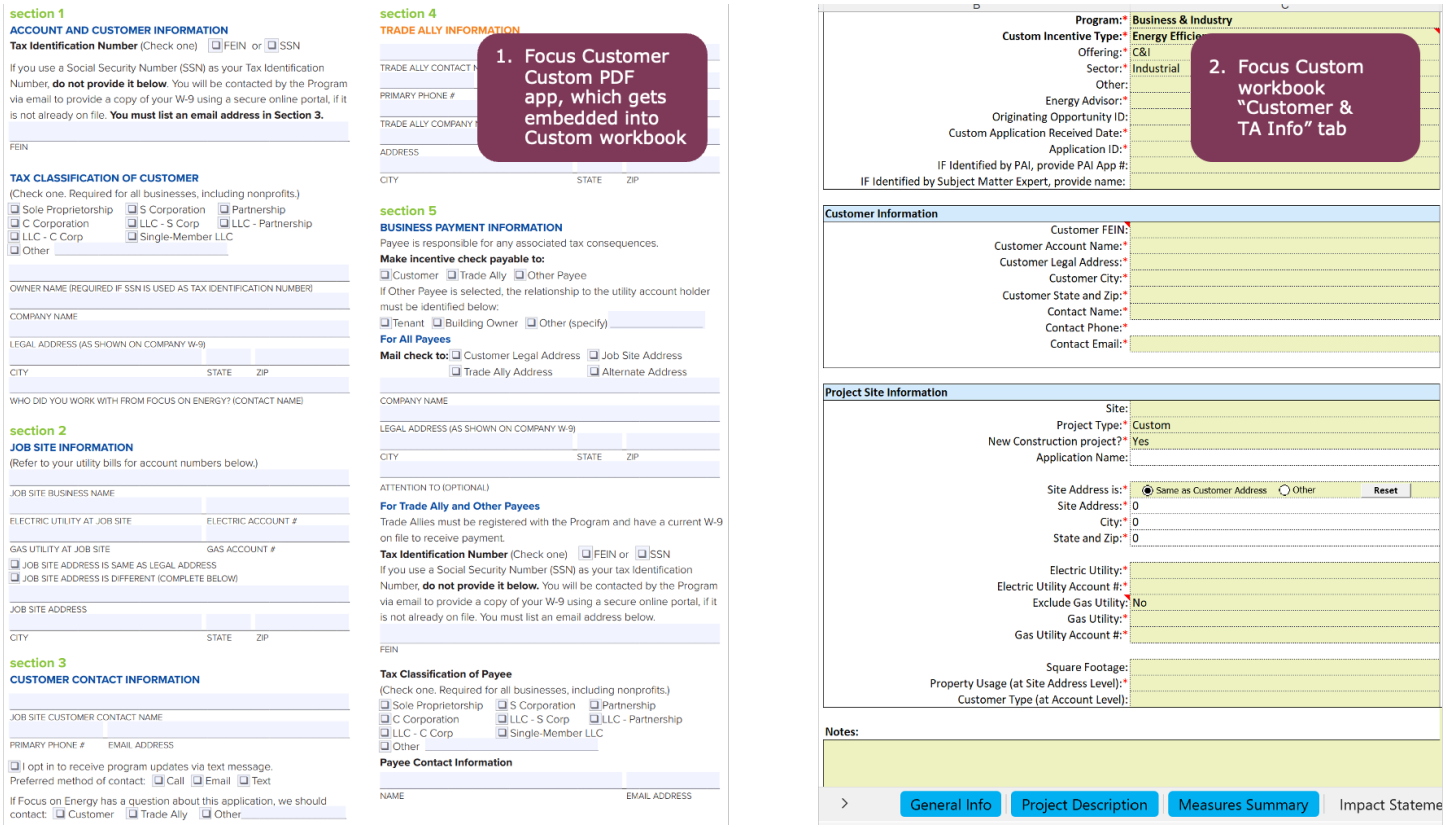
Step 3
Upload all documents via the Online Application Portal →

Required Documents for all Projects

Requirement	Document	Description
Required	Application Workbook (.xls)	100% Completed Custom Application Workbook (this workbook) downloaded from the Program website.
Required	Specification Sheets	Manufacturer specification sheets for each proposed equipment, highlighted model numbers may increase processing time.
Required	Form W-9 (Rev. October 2018)	Required for Prescriptive projects >= $10,000 upon completion. Form W-9 (Rev. October 2018) version signed on current year of company receiving the incentive.
Optional	Tax Exempt Letter	Required if company receiving the incentive is Tax Exempt.
Optional	Letter of Authorization (LOA)	Required if Trade Ally is acting on behalf of the Customer related to the participation in the Dominion Energy Incentive Program.
Required	Utility Bill	Most recent copy of the Dominion utility bill pertaining to the site where the energy efficiency project has/will occur.
Required	Calculations	Estimated Savings Calculations in Excel or other format
Required	Scope of Work	
Optional	Metering Data	Metered Data in Excel format, if available
Optional	Other	Any other supporting documentation applicable to application submission.

For Focus on Energy, the bulk of required project information (72 project items compared to Dominion's 38) comes from the overlap in the initial custom PDF application (essentially the standard application), which is required for project pre-approval, and the Customer and TA information tab in the custom workbook. The standard application for pre-approval and the Customer and TA information tab in the custom workbook request some of the same information, such as the customer account name, address, site information, and electric utility account numbers. The custom workbook asks for this information to be re-entered in the Customer and TA information tab but also requests that the energy advisor insert the pre-approval form in the standard application PDF in the tab (see Figure 9).

Figure 9. Custom Pre-Approval Form and Custom Workbook Customer & TA Info Tab



Beyond the project and measure information, there are some items unique to Focus on Energy's custom workbook that are uncommon or absent in other benchmarked customer applications, including the following (see Figure 10):

- A process flow diagram for the custom project (located in the Project Description tab in the custom workbook). If the participant has not developed one as part of their project management approach, this could be a significant additional task. The implementer indicated that this item is optional for most applicants/projects or the project must meet a savings or size minimum to require this, however this is not indicated in the workbook.
- An impact statement and related questions for energy advisors (sections 1-4 of Impact Statement tab in custom workbook). It may be worthwhile comparing these statements across

projects. If energy advisor roles are relatively consistent, it may not be necessary to collect these data at the project level. If this form item is optional for most applicants/projects or the project must meet a savings or size minimum to require this, it is not indicated.

- Detailed utility bill data (12 months of gas and electric data, totaling 60 cells to manually enter, in the Utility Data tab). According to the implementer, Focus staff typically receive utility data directly from the utility with the applicant's consent. After receiving utility information, Focus staff manually enter it into the customer's utility data table. If this form item is optional for most applicants/projects or the project must meet a savings or size minimum to require this, it is not indicated.

Figure 10. Unique Application Items

1. Process flow diagram

Process Flow and/or Energy Balance Diagrams	Directions
	- Whenever it is feasible to schematically or conceptually depict a proposed improvement, and the associated baseline conditions, a process flow diagram and/or energy balance diagram is to be provided for each Measure. - These diagrams can be hand-drawn with hand-lettered notes or captions, if preferred. - Place in the space to the left (or below if more room is needed).

2. Impact statement for EA

Impact Statement Questions

Section 1: Briefly explain how you (Energy Advisor) got involved with the customer and project. Also include any history between the customer and Focus on Energy.

Section 2: Briefly explain your understanding of the largest barriers preventing the project's implementation?

☐	Project payback was too long	☐	Lack of interest or support from company decision-makers
☐	Confidence in realizing estimated savings	☐	Competition for with other internal projects (funding and/or time)
☐	Unaware of the opportunity or possible solutions	☐	Business conditions were not suitable
☐	Unknown technology or process	☐	Project implementation costs were too high
☐	Lack of credibility/legitimacy, customer needs a 3rd party reference	☐	Insufficient internal staffing to manage and advance projects
☐	Permit barriers	☐	Lack of capital or access to financing
☐	Other - Please specify:		

Since barriers are often at various levels within a company, we encourage the advisors to be as specific as possible so the evaluator can contact various people within a company to understand the various barriers.

Section 3: Briefly explain what type of assistance you provided to the customer with regards to this project:

Type of Assistance	Customer Staff You Provided Assistance To	Month/Year Assistance Provided	Briefly describe how the assistance helped overcome these barriers

List all customer contacts that you worked with: name, title, and phone number. Think about who should be interviewed by evaluators to get an accurate understanding of your work on the project.

Name	Title	Company	Phone

Section 4: Document potential future actions resulting from your involvement on the project.
Note any "spillover" effects. This will help us show the longer term effects that we might influence through our one action.

Section 5: Customer Decision Factors *(Required for B&I Large Industrial, optional for all others)*
Indicate if any of the factors below played a role in the customer's decision-making for this project (Yes / Somewhat / No).

	Does the Company have a designated Energy Manager who was involved in this project ?
	Was this project part of a 1) regulatory mandate; 2) "green" goal; or 3) specified energy reduction goal ?
	Is this project the same or similar to a project previously implemented by your company ?
	Would you have undertaken this project in the near future even without assistance from Focus on Energy ?
	Would you consider this project or technology to be typical within your industry ?
	Are other project benefits more important than energy savings ?
	Other - Please specify:

Section 6: Customer Impact Statement *(Required for B&I Large Industrial and claim-only projects, otherwise not needed)*
Complete this statement: "Focus on Energy assistance was essential to this project because..."

3. Detailed utility bill data

Customer's Utility Data

Actual use data for the latest 12 months is required for any weather dependent projects or projects approaching the payback limits.
Consult technical team or program manager for guidance on additional situations where utility data should be obtained.

Month	Year	Electric			Natural Gas		
		kWh	Cost	$/kWh	Therms	Cost	$/Therm
January							
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							
	Total:	**0**	**$0.00**		**0**	**$0.00**	
	Average:						

The Focus on Energy workbook is large and lacks customer-facing instructions for applicants (e.g., a workbook instructional front page or tab). By comparison, the Dominion Energy custom workbook has a dedicated welcome and instructions page to guide applicants. The welcome page provides a program overview and states general program eligibility (Figure 11). The instructions page guides the applicant through the interface of the workbook, describes how to navigate through the document and describes what to do when reaching the end of the workbook (Figure 12).

Figure 11: Dominion Energy Workbook Welcome Tab

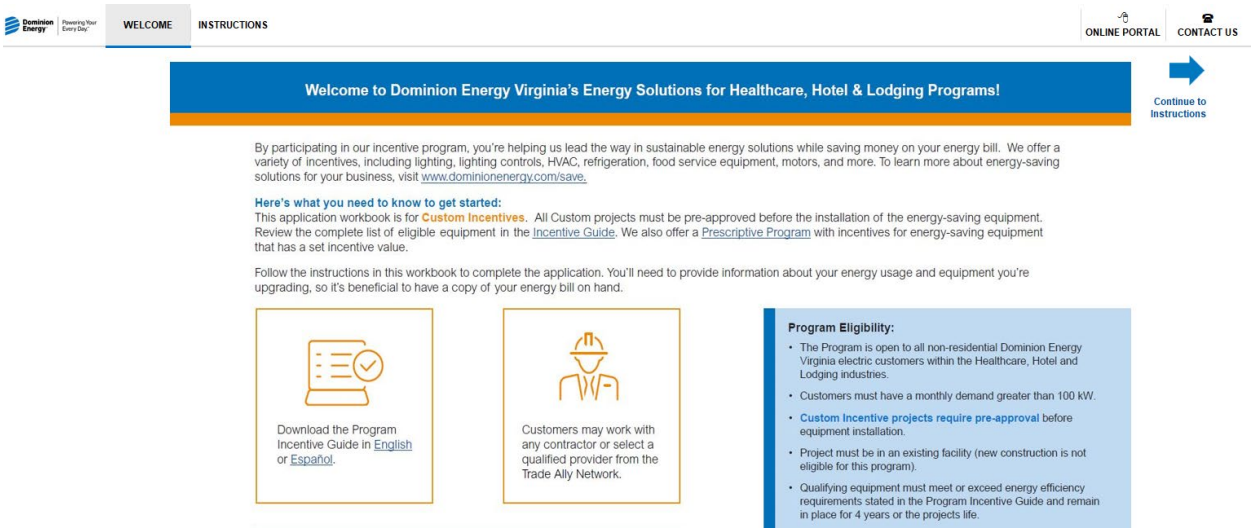
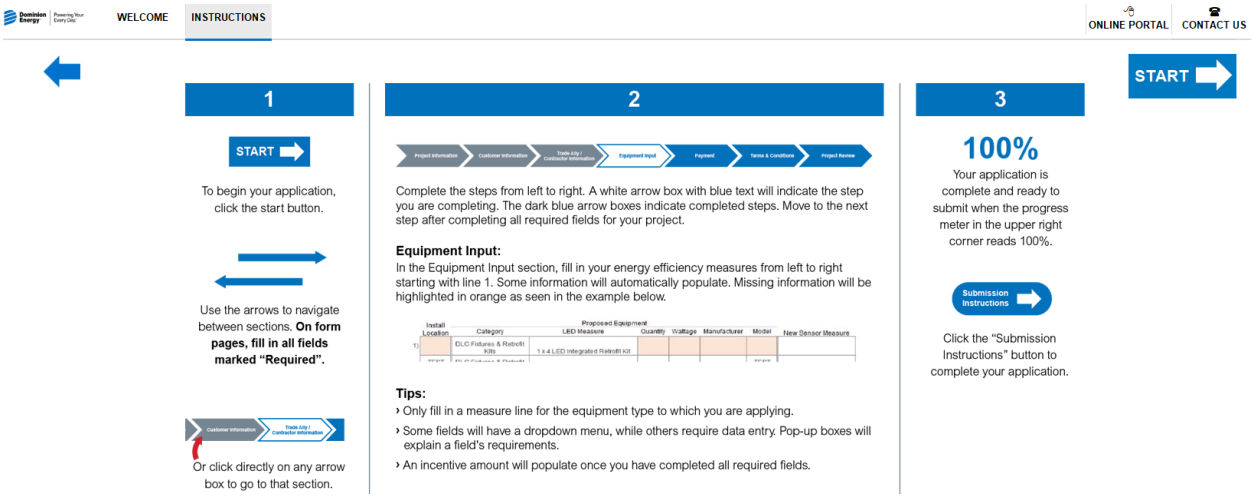


Figure 12: Dominion Energy Workbook Instructions Tab



In addition to the instructional language provided above, the application features a dynamic progress tracker that updates in real-time as applicants complete each section. Although the progress percentage displayed is approximate, the visible progress encourages completion.

Overall, the Focus on Energy workbook is large and colorful but provides little guidance throughout the document, on what colors mean. There are some color accents at the tab level, like the purple Design Incentive tab, presumably targeted at trade allies (see Figure 13). However there is not an overarching

legend to the tab colors. Dominion Energy's workbook avoids the tab based navigation and color coded tabs, creating a button interface navigation at the top of the workbook (Figure 14).

Figure 13. Custom Workbook Size and Colors

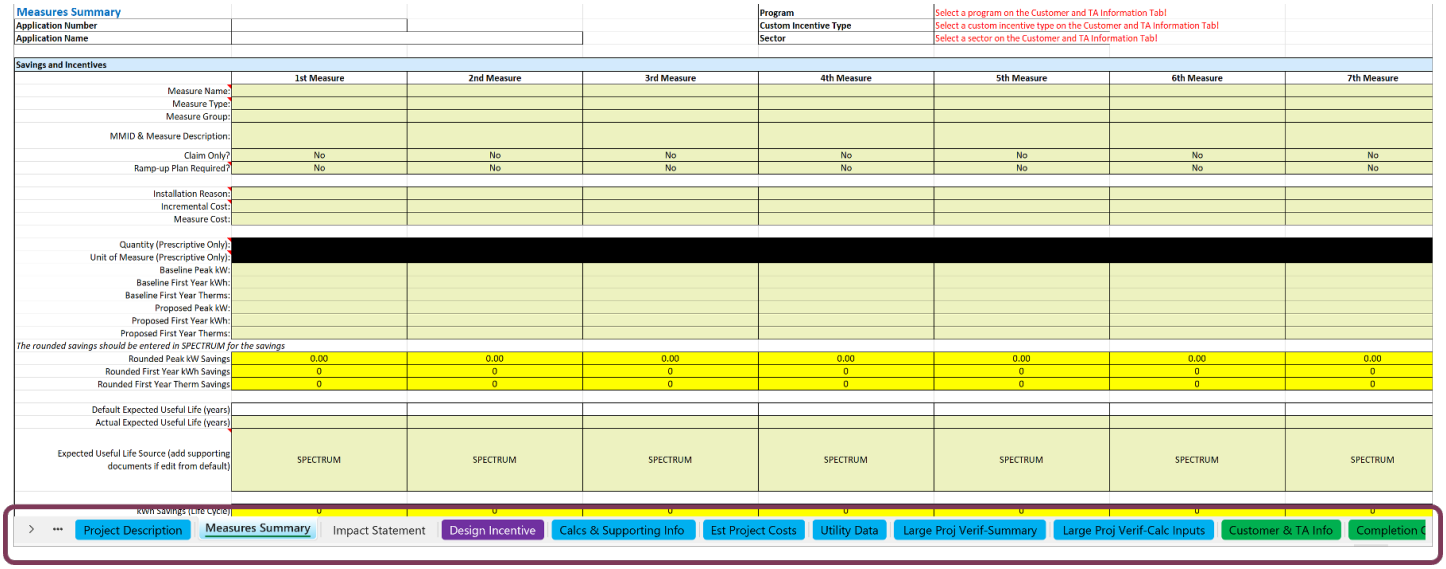
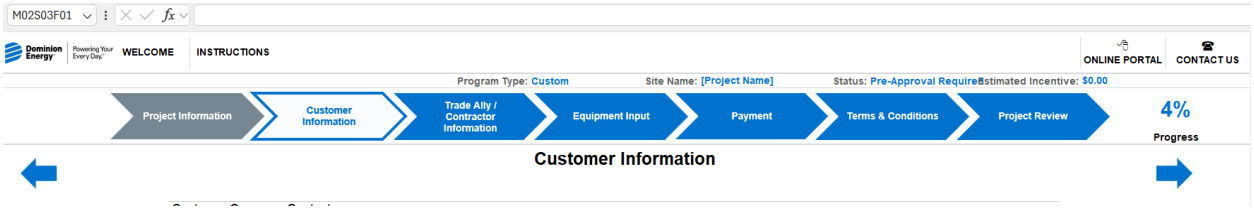
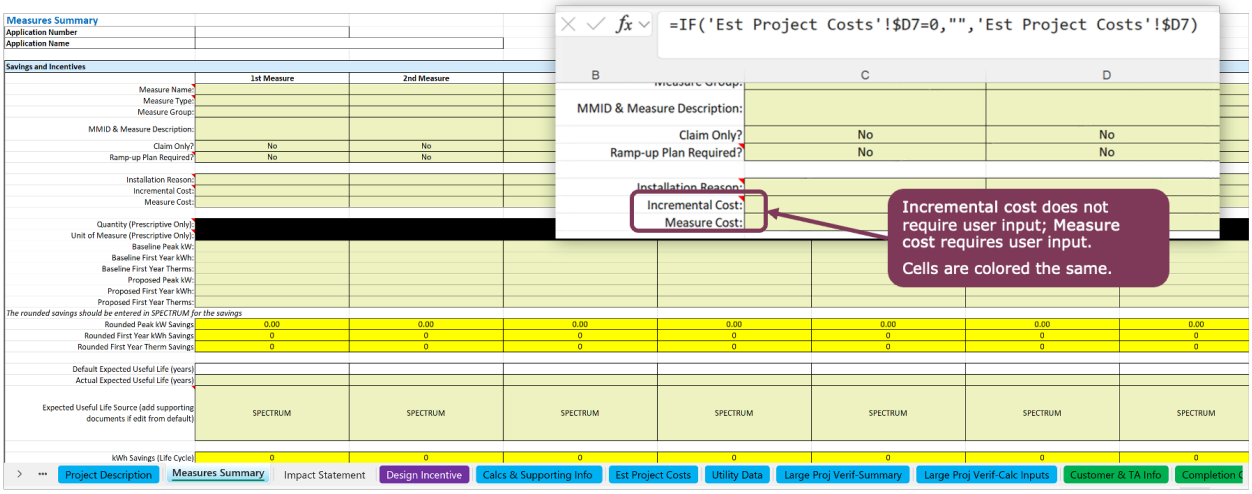


Figure 14: Dominion Energy Custom Workbook Navigation



Color could be more strategically used throughout the Focus on Energy workbook to guide applicants. For example, color could be purposively used to distinguish cells that require user input from cells that auto populate based on other inputs. We observed that in the Custom Workbook, the measure cost and incremental cost cells on the Measures Summary tab (see Figure 15) are the same color, although one cell is an applicant input (measure cost), while the other is an automatic calculation (incremental cost). By making the cells the same color, the document misses an opportunity to guide the applicant by distinguishing between the applicant and automatic input.

Figure 15. Color Coding in Custom Workbook



The document can also guide applicants to missing input items. The Dominion Energy custom workbook states in its embedded instructions that missing items within the Equipment Input tab will be colored orange (Figure 16).

Figure 16: Dominion Energy Missing Items Note in Instructions

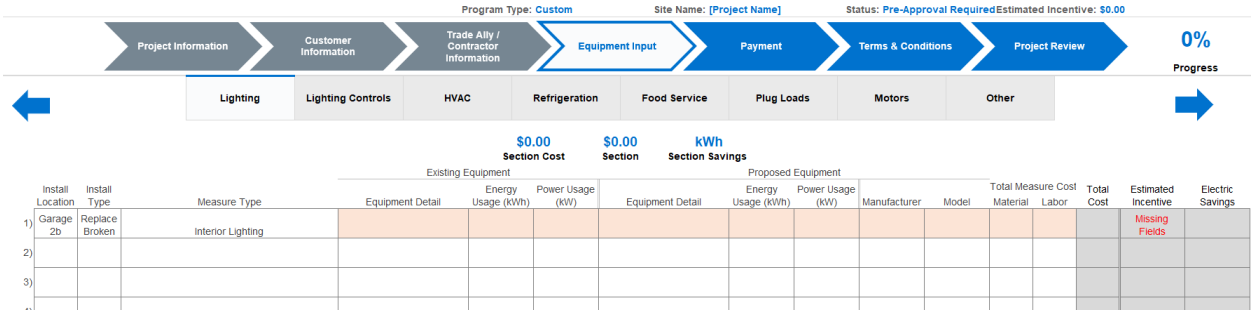
Equipment Input:

In the Equipment Input section, fill in your energy efficiency measures from left to right starting with line 1. Some information will automatically populate. Missing information will be highlighted in orange as seen in the example below.

	Install Location	Proposed Equipment Category	LED Measure	Quantity	Wattage	Manufacturer	Model	New Sensor Measure
1)		DLC Fixtures & Retrofit Kits	1 x 4 LED Integrated Retrofit Kit					

The Dominion custom workbook has a minimal color-coding scheme that distinguishes user input and generated outputs or calculations while also noting missing form items. This is done with only three colors: white for user input, orange for missing items, and gray for calculations/formulas (see Figure 17). Using color sparingly can draw applicants' attention to what matters most, and a limited color scheme reduces the applicant's work of associating multiple colors with different meanings.

Figure 17: Dominion Energy Color Scheme



Application Features

The analysis identified other lighting program features that are of interest to Focus on Energy. Table 12 lists the other benchmarked programs offering these features. Focus on Energy staff have expressed interest in developing an online application portal, and while some utilities are providing this, it is not yet the standard across programs.

Focus on Energy staff also had an interest in shifting some lighting measures to the midstream program. In some cases, benchmarked programs allowed participants to combine midstream lighting incentives with other offers, completing projects that included some measures receiving midstream incentives and other measures receiving downstream or custom incentives. However, these programs did not allow double-dipping (i.e., using two funding sources for the same measure)—only the ability to complete a project with multiple measures (e.g., midstream lighting and custom lighting). While nine programs were benchmarked for lighting applications, eleven were benchmarked for these other application features and midstream lighting offers.

Table 12. Programs with Other Application Features

Program Administrator	Midstream Lighting	Able to combine midstream and downstream lighting rebates within the same project	Online application?
Ameren	X	X	X
ComEd	X	X	X
Consumers	X	X	
Con Edison	X	X	
Dominion Energy	X	X	
Duke Energy	X	X	X
Energize CT (UI)	X		X
Energy Trust	X	X	
MassSave	X	X	
National Grid	X		
Puget Sound	X		

Recommendations

The evaluation team offers the following recommendations based on its findings from the benchmarking study.

1. **Introduce more autofill.** For example, it may be possible to update the standard application in the business lighting catalog so that entering an incentive code can auto-populate the "unit measure" (see Figure 18).

Figure 18. Standard Application

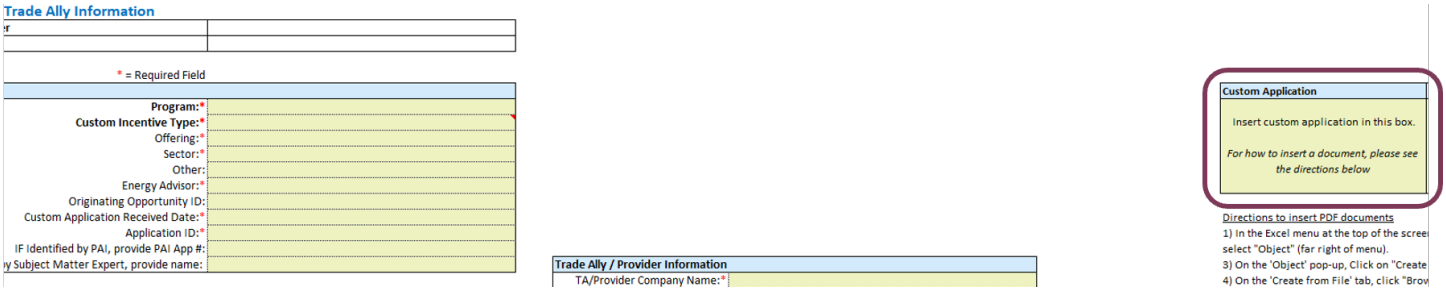


PROJECT COMPLETION DATE:

INCENTIVE CODE	MANUFACTURER NAME	MODEL #	UNIT MEASURE	# OF UNITS (A)	INCENTIVE PER UNIT (B)	REQUESTED INCENTIVE (A X B)
(Example) L3111	STARK LIGHTING	LEDSVZP	Fixture	10	$ 20.00	$ 200.00
L311				3	$ 20.00	$ 60.00
					$	$ 0.00

2. **Make more applications standalone so applicants have fewer documents to keep track of**. Some supplementary applications require both their workbook and the standard application.
   a. One change may be to adjust the new construction interior lighting workbook so it can be standalone, with an embedded standard application, like the CLS and horticulture workbooks.
   b. Watts-controlled prescriptive measures require a supplemental data sheet, such as an additional page in the incentive catalog (either Table A or Table B). Staff may review the information in the tables to decide whether the supplemental document is worth applicants' time.
   c. As custom workbooks require the custom application PDF insert, the fields about project information and trade allies in the custom workbook may not be necessary for energy advisors and customers to fill out (see Figure 19).

Figure 19. Required Application Insert on Customer and TA Tab in Custom Workbook



Trade Ally Information

* = Required Field

Program:*
Custom Incentive Type:*
Offering:*
Sector:*
Other:
Energy Advisor:*
Originating Opportunity ID:
Custom Application Received Date:*
Application ID:*
IF Identified by PAI, provide PAI App #:
Subject Matter Expert, provide name:

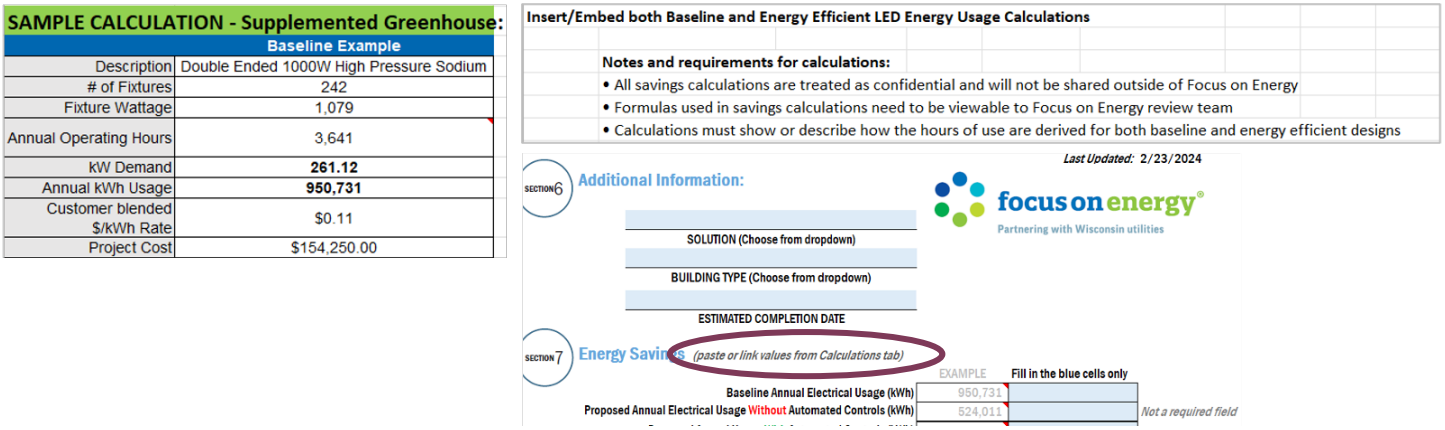
Trade Ally / Provider Information
TA/Provider Company Name:*

Custom Application
Insert custom application in this box.
For how to insert a document, please see the directions below

Directions to insert PDF documents
1) In the Excel menu at the top of the scree
select "Object" (far right of menu).
3) On the 'Object' pop-up, Click on "Create
4) On the 'Create from File' tab, click "Brov

3. **Link all data entry fields to forms requesting the same information when possible**. For example, the horticultural workbook calculator could be linked to the project savings information form (Figure 20).

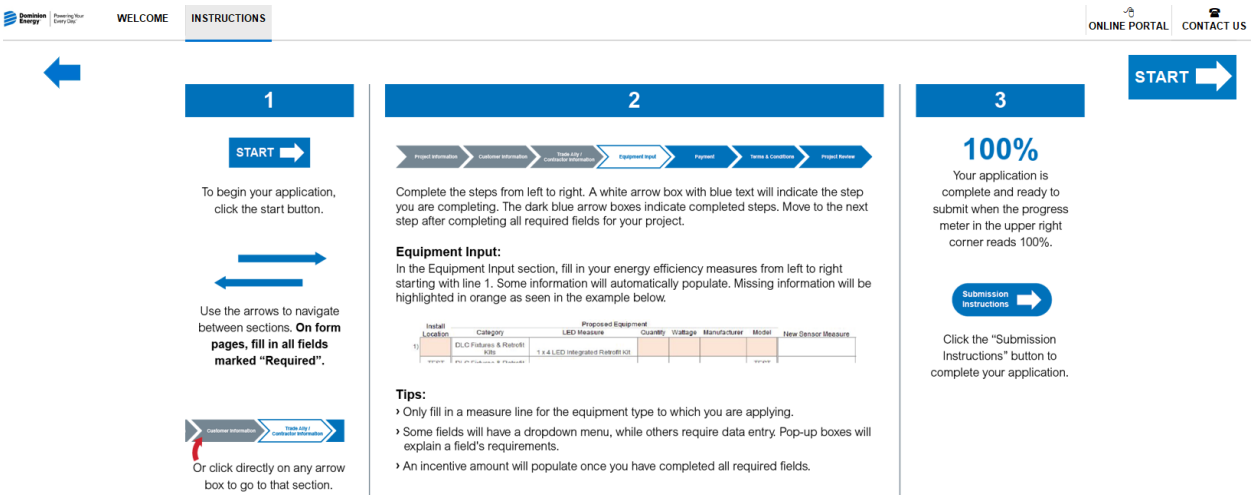
Figure 20. Opportunity to Link Calculator Output in Horticultural Workbook



SAMPLE CALCULATION - Supplemented Greenhouse:	
	Baseline Example
Description	Double Ended 1000W High Pressure Sodium
# of Fixtures	242
Fixture Wattage	1,079
Annual Operating Hours	3,641
kW Demand	**261.12**
Annual kWh Usage	**950,731**
Customer blended $/kWh Rate	$0.11
Project Cost	$154,250.00

4. **Consult usability best practices for documents to make applications easier to navigate**. For example, apply a different color to cells in the custom workbook with embedded formulas or other outputs than cells that require user input (a contrast color) and provide a legend.
   a. Simplify the color scheme in the custom workbook—consider the 60/30/10 rule (60% main color, 30% contrast, and 10% accents).
   b. Provide instructions and navigation information at the beginning of any lengthy workbook; this may mean separate instructions for customers (see Figure 21 as an example from another program).

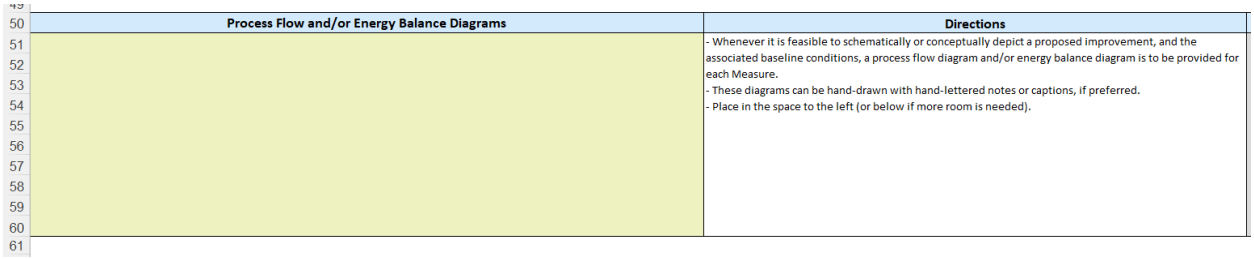
Figure 21 Dominion Energy Custom Workbook Instructions Tab



5. **Continue the trend of increasing the number of deemed measures for prescriptive measures and expand to appropriate catalog measures**.

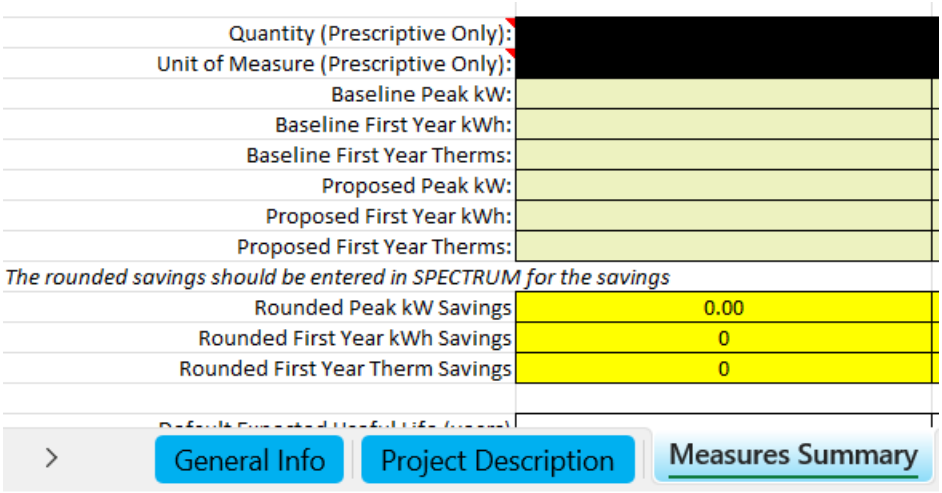
6. **Provide pre-filled and repeated project information when possible.** Much of the bulk in applications is project information, which is likely already available for repeat customers in some cases. Review if there is a way to import saved customer information, like customer address, and utility account numbers, into project applications to reduce the need for repetitive manual entry.
7. **Create a clear, documented distinction between required and optional form fields, especially within the Custom workbook. Clearly state any conditional project requirements for certain information forms as well, especially for form items that are only applicable for threshold projects**. Clarifying what's required of non energy advisor applicants encourages greater customer/applicant and trade ally independence when completing applications. Introducing visual indicators of optional fields can reduce perceptions of application workload to customers. Some options include marking required fields with an asterisk, labeling "optional" under optional field labels in lighter text, reducing contrast colors in optional fields, and providing pre-filled helper text in form areas describing scenarios where this information is necessary. For example, staff clarified the Process Flow form item in the Custom workbook is only applicable for some projects. Within the workbook, the item cell can state, "Required only for [use case], SKIP for [other scenarios] (Figure 22). Any conditional project requirements can be clearly described as well, especially for form items that are only applicable for threshold projects.

Figure 22: Opportunity for "Optional Item" Indicator in Process Flow Item in Custom Workbook



Similarly, Focus staff noted that the four items requested in the Measures Summary tab of Baseline First-Year kWh, Proposed Peak kW, and Proposed First-Year kWh are optional for lighting applications (Figure 23). There are no current indicators that this information is not required of applicants, and customers applying alone or with minimal assistance from an energy advisor may attempt to populate this information.

Figure 23: Opportunity for "Optional Item" Indicator in Baseline kW/kWh Details



8. **Reconsider what specific measure and project information is important and necessary**. As shown in the analysis above, for a number of measures (e.g., custom projects and horticultural grow lights), the Focus on Energy application process requires considerably more information than the comparison program administrators. Within the custom workbook, detailed cost explanations increase the amount of work to apply, especially for customers filling out the application. Energy advisors also suggested reconsidering measures that required additional information, such as the Supplemental Data Sheet and COMcheck forms. Consider what information tradeoffs can be made in the lighting applications to increase customer independence in completing them. Some information can validate savings claims but may come at the cost of overburdening the applicant.