1 Maximum Offer Calculator Guidance Document

1 Update Log

This update log tracks revisions made to the calculator guidance document over time to ensure transparency and accurate record keeping. The calculator has its own update log on a separate tab of the workbook.

V1	05/01/2025	Initial Calculator and Guidance Document development
V2	10/30/2025	Addition of smaller cooperatives, municipal utilities, and “Other” option
V3	11/10/2025	Addition of change log, updated utility tariff information
V4	01/28/2026	Updated utility tariff information, adjusted loan interest formula (monthly compounding, instead of annual)

1 Purpose and Overview

This guidance document supports consistent and transparent use of the updated Maryland Solar Access Program (MSAP) Maximum Offer Calculator. The guidance provides instructions for how to calculate and verify consumer benefits, including step-by-step examples, sample calculations, and validation procedures for MEA reviewers and contractors.

The calculator determines whether proposed Power Purchase Agreements (PPAs), leases, loans, or purchases meet the minimum consumer benefit requirements under the Maryland Solar Access Program. The calculator enables consistent application of the Maryland Energy Administration’s (MEA) consumer protection policies across all participating utilities.

The updated version of the calculator expands coverage from the four major Maryland utilities to include all 13 electric utilities statewide, as well as an “Other” option that allows users to input a custom utility rate. This ensures equitable and accurate benefit evaluation across all service territories, including smaller cooperatives and municipal utilities. A sample customer utility bill is included at the end to show the inputs for an avoidable rate.

This tool does not evaluate every potential customer’s projected savings. To ensure perfect passthrough of the rebate, these calculations would need to occur per system using the real system size, financing plan and terms, and the customer’s real rate plan. All major Maryland investor-owned, municipal, and cooperative utilities are covered in the tool, but additional utilities such as other outside suppliers could be evaluated in using the “Other” option in the tool. This tool also only evaluates the Residential “R” Standard Offer Service (SOS) rate, and it’s possible that residential customers could be on other rate plans such as time-of-use plans. For a true financial analysis, a customer’s true rate plan would need to be reviewed on an individual basis, but additional review times make this approach less desirable. The “Other” option could be used for customer-specific rate plans. An incentive based on kWh production that’s dependent on each customer’s specific utility rates would be more precise.

Different utilities across Maryland revise their electric tariffs at varying intervals—some every two to four months, others seasonally, annually, or only as needed based on regulatory or market changes. To maintain accuracy and ensure that customer benefit calculations remain aligned with current utility rates, it is recommended that the MSAP Maximum Offer Calculator be updated at least twice per year. Semi-annual updates will capture seasonal fluctuations in electricity pricing, reflect any newly published rate schedules or surcharges, and help ensure that all program analyses and compliance reviews are based on the most current and representative tariff data available.

1 Step-by-Step User Instructions

The following guidance explains how to use the updated calculator to verify compliance with MSAP minimum benefit requirements. The calculator is organized by contract type (PPA, Lease, Loan, Purchase) and applies the same overall logic to all scenarios.

Color Key
Gray cells: Fixed static values; not to be edited.

Yellow cells: User input values (assumptions or site-specific data).
Blue cells: Calculator output values (results used for compliance review).

Step 1: Identify if the Solar Agreement is a Lease, Loan, Purchase, or PPA

Review the contract and identify the contract type. Select the corresponding tab in the calculator.

Step 2: Review Static Assumed Values

The following static assumptions apply across all scenarios and are not to be edited in this iteration of the calculator:

- Net Present Value (NPV) Discount Rate: 4.75%
- Annual PV Degradation Rate: 0.50%
- Expected System Lifespan (Maximum): 25 years
- Standard Escalator: 3.00%

These values are consistent with statewide program assumptions and ensure that financial comparisons between agreement types are standardized.

2 Step 3: Enter Contract Inputs
In **Box 5,** select the customer's electric utility from the dropdown list. The updated calculator now includes all 13 Maryland utilities:

1. Pepco
2. BGE
3. Delmarva Power
4. Potomac Edison
5. Berlin Municipal Electric Plant
6. Easton Utilities Commission
7. City of Hagerstown Light Department
8. Thurmont Municipal Light Company
9. Williamsport Municipal Electric Light System
10. A&N Electric Cooperative
11. Choptank Electric Cooperative Inc
12. Somerset Rural Electric Cooperative
13. Southern Maryland Electric Cooperative, Inc.

In addition, a the "Other" option allows users to input a custom retail electric rate ($/kWh) for customers served by unaffiliated cooperatives or municipal providers. Selecting a utility automatically populates the Maximum Offer PPA Rate in **Box 6** based on the residential Standard Offer Service (SOS) rates. If selecting "Other", input the custom electric utility rate into the new yellow box that appears adjacent to Box 6.

Enter the values the **remaining boxes in the input section** as appropriate, as shown in Table 1 through Table 4, as applicable to the agreement type. To calculate system costs, sum up the material and installation costs before the addition of any tax credits or incentives. Input any non-solar costs into the corresponding cell (i.e.roofing, trenching, batteries, tree trimming, EV chargers etc.). PPA Rates, First-Year Projected Total PV Generation, lease escalators, loan terms, and MEA grants come from contract information.

PPA

Table 1 PPA Minimum Benefit Calculator Inputs

7	First-Year Projected Total PV Generation [kWh/yr]	Enter the system's expected Year 1 production as it appears in the contract.
8	Grant Authorization	Select "Yes" if the MSAP grant is paid to the contractor and passed through to the customer via lower rates.
9	PPA rate (as appears on the contract) [$/kWh]	Enter the first-year customer PPA rate or monthly payment.
10	Total System Cost (as appears on the contract or disclosure) [$]	Enter the full installed system cost before incentives.
11	Non-solar costs incorporated into the PPA rate (enter $0 if PPA rate is reflective of solar-related costs only) [$]	Enter any costs unrelated to solar (i.e.roofing, trenching, batteries, tree trimming, EV chargers etc.).

3 Lease

Table 2 Lease Minimum Benefit Calculator Inputs

7	First-Year Projected Total PV Generation [kWh/yr]	Enter the system's expected Year 1 production.
8	Grant Authorization	Select "Yes" if the MSAP grant is paid to the contractor and passed through to the customer via lower rates.
9	Total System Cost (as appears on the contract or disclosure) [$]	Enter the full installed system cost before incentives.
10	Non-solar costs incorporated into the lease rate (enter $0 if lease rate is reflective of solar-related costs only) [$]	Enter any costs unrelated to solar (i.e.roofing, trenching, batteries, tree trimming, EV chargers etc.).
11	Lease Escalator [%/yr]	Enter the annual escalation rate (typically 0–3%).
12	First-year monthly lease rate (as appears on the contract) [$/mo]	Enter the first-year customer rate or monthly payment.

Loan

Table 3 Loan Minimum Benefit Calculator Inputs

7	First-Year Projected Total PV Generation [kWh/yr]	Enter the system's expected Year 1 production.
8	Loan Term [years]	Enter the loan term; capped at 25 years.
9	Loan Interest Rate (as appears on the contract) [%]	Enter the loan interest rate as stated in the contract.
10	Total System Cost (as appears on the contract) [$]	Enter the full installed system cost before incentives.
11	Non-solar costs (enter $0 if all costs are solar-related) [$]	Enter any costs unrelated to solar (i.e.roofing, trenching, batteries, tree trimming, EV chargers etc.).
12	MEA grant amount to the resident (enter $0 if the grant is authorized to the contractor instead) [$]	Enter the grant amount applied directly to the customer (if applicable).

Purchase

Table 4 Purchase Minimum Benefit Calculator Inputs

7	First-Year Projected Total PV Generation [kWh/yr]	Enter the system's expected Year 1 production as it appears in the contract.
8	Total System Cost (as appears on the contract, or internally valued) [$]	Enter the full installed system cost before incentives.
9	Non-solar costs (enter $0 if all costs are solar-related) [$]	Enter any costs unrelated to solar (i.e.roofing, trenching, batteries, tree trimming, EV chargers etc.).
10	MEA Grant [$]	Enter the grant amount applied directly to the customer (if applicable).

Step 4: Review Outputs and Compliance with Maximum Offer Status
After inputs are entered, the calculator automatically determines:

1. The portion of the customer payment or cost attributable to solar-only components (excluding non-solar costs).
2. The maximum allowable offer based on the selected utility's avoidable rate.
3. Whether the system design meets or does not meet MSAP program requirements.

If the customer's effective rate, payment, or cost exceeds the calculated Maximum Offer threshold, the system does not comply with MSAP's minimum benefit policy and does not qualify for MSAP incentives.

3 Methodology

Calculating the Avoidable Rate

The “avoidable rate” represents the rate ($/kWh) a customer would otherwise pay for electricity if they were not generating solar power. It reflects all supply, distribution, and surcharge components of the utility’s residential rate. Each participating utility’s avoidable rate is pre-loaded into the calculator and updated periodically using published rate schedules. Users selecting “Other” must input the current average all-in residential rate for the applicable service provider.

Determining the Percentage Below the Avoidable Rate

The calculator evaluates how far below the avoidable rate a customer’s proposed PPA or lease price is, both with and without the MSAP rebate. Using estimated PPA rates derived from market payback periods, the tool identifies the highest rate that still meets the required 20% or 30% savings threshold. This ensures the customer realizes at least a minimum guaranteed savings compared to what they would pay to the utility without solar.

Interpreting Results

The results show how proposed customer offers compare against the maximum allowable rates or payments derived from each utility’s avoidable rate. This enables both contractors and MEA reviewers to confirm rebate pass-through and ensure equitable consumer protection across all Maryland utilities.

How Avoidable Rate Differences Affect Results

Utility rates vary across Maryland, and thus, the allowable solar offer differs by territory. A single statewide PPA rate could create inequitable customer benefits, so the calculator uses utility-specific avoidable rates to determine compliant offers. The “Other” utility option supports analysis of additional service territories, such as rural co-ops, municipal utilities, retail suppliers not listed among the 13 utilities, or cases in which the customer has a non-standard utility rate, such as a blended time-of-use rate[1] (averaged across hours).

3 Reference Values

Table 5 lists the current avoidable rate for each utility, corresponding maximum offer with and without escalators. These rates are determined using available tariff information for each utility, collected from utility websites or direct engagement with the utility.

Table 5 Utility Avoidable Rates

Pepco	0.231	0.185	0.162
BGE	0.213	0.170	0.149
Delmarva Power	0.226	0.181	0.158
Potomac Edison	0.160	0.128	0.112
Southern Maryland Electric Cooperative, Inc.	0.186	0.149	0.130
Berlin Municipal Electric Plant	0.133	0.106	0.093
Easton Utilities Commission	0.144	0.115	0.101
City of Hagerstown Light Department	0.137	0.110	0.096
Thurmont Municipal Light Company	0.124	0.099	0.087
Williamsport Municipal Electric Light System	0.123	0.098	0.086
A&N Electric Cooperative	0.112	0.090	0.078
Choptank Electric Cooperative Inc	0.166	0.133	0.116

[1] A time-of-use (TOU) electric rate is a pricing structure in which the cost of electricity varies depending on the time of day, day of the week, or season. Under a TOU rate, customers pay higher prices during peak demand periods and lower prices during off-peak hours, encouraging energy use when the grid is less strained.

Somerset Rural Electric Cooperative	0.199	0.159	0.139

Different utilities update their electric tariffs at varying frequencies, ranging from two-four months, seasonally, annually, or only on an "as-needed" basis. The calculator should be updated at least twice annually to address seasonal changes in electric tariffs. The date of last calculator refresh, electric tariff effective date, and update frequency is shown in Table 6.

Table 6 Calculator & Tariff Update Schedule

				Source
Pepco	01/28/2026	10/01/2025	Seasonal (Oct-May, Jun-Sep)	https://www.pepco.com/my-account/my-dashboard/rates-tariffs/maryland/current-tariffs https://www.pepco.com/my-account/my-service/customer-choice-md/price-to-compare
BGE	01/28/2026	12/01/2025	Between two and four months (Oct-Nov, Dec-Feb, Mar-May, Jun-Sep)	https://www.bge.com/my-account/my-dashboard/rates-tariffs/electric-service/electric-rates-information
Delmarva Power	01/28/2026	10/01/2025	Seasonal (Oct-May, Jun-Sep)	https://www.delmarva.com/my-account/my-dashboard/rates-tariffs/maryland/current-tariffs
Potomac Edison	01/28/2026	01/01/2026	Seasonal (Oct-May, Jun-Sep)	https://www.firstenergycorp.com/customer_choice/maryland/maryland_tariffs.html
Southern Maryland Electric Cooperative, Inc.	01/28/2026	01/01/2026	Seasonal (Oct-Apr, May-Sep)	https://www.smeco.coop/my-account/general-information/rates-fees/ https://www.smeco.coop/wp-content/uploads/SCHEDULE-R.pdf
Berlin Municipal Electric Plant[2]	01/28/2026	11/28/2012	Updated as needed. The most recent info (non-tariff) is from 09/2024.	https://berlinmd.gov/department/electric/ https://berlinmd.gov/berlin-electric-utility-customer-information-guide/
Easton Utilities Commission[3]	01/28/2026	01/01/2026	Biannual from published tariff. Monthly energy charges for January were unpublished, confirmed via phone.	https://eastonutilities.com/wp-content/info/electric-tariff.pdf

[2] Most recent Power Cost Adjustment (PCA) is from 9/2024, using 2022 average residential rates (without line-item breakouts).
[3] No generation/energy supply costs provided (changes month to month), only distribution rates. No formal historical supply cost data available.

				Source
City of Hagerstown Light Department	01/28/2026	02/01/2025	Annual	https://www.hagerstownmd.org/DocumentCenter/View/5379/HLD-Tariff?bidId= https://www.hagerstownmd.org/DocumentCenter/View/6703/RPT_PPCA-12_Month?bidId=
Thurmont Municipal Light Company	01/28/2026	04/01/2020	Updated as needed.	https://thurmont.com/DocumentCenter/View/1576/Final---Electric-Service-Tariff---CLN---2020-04-03 https://thurmont.com/2332/Electric-Department
Williamsport Municipal Electric Light System[4]	01/28/2026	05/01/2025	Updated as needed.	https://williamsportmd.gov/community/utilities/
A&N Electric Cooperative	01/28/2026	01/01/2026	Annual	https://www.anec.com/wp-content/uploads/ANEC-A-1-Residential.pdf https://www.anec.com/your-account/anec-rates/
Choptank Electric Cooperative Inc	01/28/2026	01/01/2026	Updated as needed.	https://www.choptankelectric.coop/sites/default/files/03.01.2025%20Choptank%20Electric%20Tariff%20and%20Terms%20and%20Conditions.pdf https://choptankelectric.coop/rates
Somerset Rural Electric Cooperative	01/28/2026	01/01/2026	Updated as needed.	https://www.somersetrec.com/current-rates

Sample Calculations

The following examples illustrate how the calculator is applied for each solar agreement type. Each example follows the same four-step structure to confirm program compliance.

PPA EXAMPLE CALCULATION

Example Scenario: A solar developer is designing a combined rooftop solar and EV charging package for a residence in the Delmarva Power service territory. The PV system would be sized for 8 kW DC and is expected to produce 11,157 kWh in the first year. The market cost of the solar components, site design, and installation is $21,422, and $2,885 for the EV charger. The developer plans to claim the 30% federal investment tax credit (ITC) for the solar portion of the package and also apply for the MSAP grant. They believe they can offer the customer a 25-year PPA for the combined package, starting at $0.183/kWh and escalating by 3.0% each year. They would then use the maximum offer calculator to determine whether this system design is eligible to receive the MSAP grant.

Step 1: Identify if the Solar Agreement is a Lease, Loan, Purchase, or PPA

Once the developer has the maximum offer calculator open, they select the tab corresponding to the contract type – in this case, the developer chooses PPA.

Step 2: Reviewing Static Assumed Values

[4] PCA data and updated rate projections taken from town-hall meeting held in 2025 to forecast 2026 rates.

In the calculator, the developer first navigates to the PPA tab. The first table in the calculator provides fixed static values that act as baselines for all project inputs. Box 1 represents the Net Present value discount rate, which is used to determine the present value of the project's cash flows in future years (i.e., future payments and energy cost savings are discounted to the current year as savings and payments in future years are worth less than savings and payments today). Box 2 assumes that the production of a PV System will reduce by 0.50% each year due to natural wear and tear. Box 3 sets a 25-year PPA length, with a 3% annual escalator in the PPA $/kWh rate in Box 4.

	Static Assumed Values	
1	System Owner NPV Discount Rate [%]	4.75%
2	System Annual Degradation Rate [%]	0.50%
3	PPA and Lease Term, System Lifespan (25-Year Maximum) [yrs]	25
4	PPA Escalator [%/yr]	3.00%

Step 3: Entering Contract inputs

Box 5: Select the customer's utility territory (Delmarva Power) from the drop-down list.

Box 6: Automatically populated with the current maximum-offered PPA Rate for Delmarva Power, published by MSAP.

Box 7: Input the expected total first-year production from their PV System design (11,157 kWh).

Box 8: Confirms that the grant funding would go to the developer, who then would pass through savings to the customer by providing a reduced PPA rate. As the developer in this scenario plans to claim the ITC and the grant as the system owner, they select "Yes" from the drop-down.

Box 9: Input the starting PPA rate they plan to offer to the residence for the combined package ($0.183/kWh).

	PPA Inputs	
5	Customer Utility Service Territory	Delmarva Power
6	Maximum-Offer: First Year PPA Rate with escalator [$/kWh]	$ 0.158
7	First-Year Projected Total PV Generation [kWh/yr]	11,157
8	The MEA grant is authorized to the contractor, in addition to other federal and state incentives, allowing the contractor to provide a discounted PPA rate to the resident	Yes
9	PPA rate (as appears on the contract) [$/kWh]	$ 0.183

Box 10: Calculate the total system cost to enter. Sum up the material and installation costs of the PV solar system and EV charger:

$21,422 + $2,885 = $24,307 for the total system cost.

Note that this value is before the inclusion of the ITC, grant, or other incentives and rebates. The developer will include this total system cost on the MSAP customer disclosure form, but may not always include it on the PPA contract itself.

Box 11: Determine what package costs, if any, are not required to enable the installation of the rooftop solar system. As the EV charger is not necessary for the solar, the developer allocates the EV charger costs as non-solar ($2,885) and enters the value in **Box 11**. Additional MSAP guidance[5] is available to assist in calculating solar and non-solar costs.

10	Total System Cost (as appears on the contract or disclosure) [$]	$ 24,307
11	Non-solar costs incorporated into the PPA rate (enter $0 if PPA rate is reflective of solar-related costs only) [$]	$ 2,885

Step 4: Review Outputs and Compliance with Maximum Offer Status

Box 12 then calculates the proportion of the vendor PPA rate (entered in Box 9) that represents only the solar costs of the design, excluding non-solar costs (in this scenario, the EV charger). Solar costs are subject to the MSAP minimum benefits policy. **Box 12's** output is the rate used to check if a system design meets MSAP requirements. For this design, the **Box 12** rate was $0.161/kWh.

[5] MSAP Contractor Guidance on Costs to Include

Box 13 is the maximum offer rate. The rate from **Box 12** must be equal to or lower than the **rate in Box 13** to meet program compliance. As the agreement type is a PPA, no additional calculations are required, and the value is the same as the **Box 6** maximum offer rate.

For this design, the **Box 12** PPA rate to compare ($0.161/kWh) is above the **Box 13** maximum offer rate ($0.158/kWh). Therefore, the current contract terms and system design do not provide the minimum customer savings required to receive the MSAP grant. The system design or the agreement terms will need to be adjusted to qualify for the grant.

12	**PPA rate subject to MEA's minimum benefits policy** (for comparison with Maximum Offer) **[$/kWh]**	$	**0.161**
13	**Maximum Offer: First-Year PPA Rate subject to MEA's policy [$/kWh]**	$	**0.158**

14	**The system design does not meet MEA program requirements.**

LEASE EXAMPLE CALCULATION

Example Scenario: A solar contractor is designing a rooftop solar lease for a residence in the Pepco service territory. The PV system is expected to produce 15,000 kWh in the first year. The total system cost, including all materials, labor, and installation, is $47,000, of which $5,000 represents non-solar costs (e.g., roofing, trenching, batteries, tree trimming, EV chargers etc.). The contractor plans to receive both the MEA grant and any applicable federal incentives and pass those savings through to the customer by offering a discounted lease payment. The proposed agreement is a 25-year solar lease with a 2.99% annual escalator and a first-year monthly lease payment of $155.75.

Step 1: Identify if the Solar Agreement is a Lease, Loan, Purchase, or PPA

Once the developer has the maximum offer calculator open, they select the tab corresponding to the contract type – in this case, the developer chooses Lease.

Step 2: Reviewing Static Assumed Values

In the calculator, the contractor first navigates to the Lease tab. The first table provides the static assumed values that apply across all scenarios:

	Static Assumed Values	
1	System Owner NPV Discount Rate [%]	4.75%
2	Annual Degradation Rate [%]	0.50%
3	Lease Term, System Lifespan (25-Year Maximum) [yrs]	25
4	PPA Escalator [%/yr]	3.00%

Box 1: The Net Present Value (NPV) Discount Rate is 4.75%, representing the time value of money.

Box 2: The Annual Degradation Rate is 0.50%, accounting for gradual system performance decline over time.

Box 3: The lease term and system lifespan are set to 25 years, representing the maximum allowable period under MSAP.

Box 4: The standard PPA escalator (3.00%) is shown for consistency with other agreement types, but the lease-specific escalator is entered separately in the inputs.

These static assumptions ensure all calculations remain consistent across system types and utility territories.

Step 3: Entering Contract Inputs

Box 5: Select the customer's utility territory (Pepco) from the drop-down list.

Box 6: automatically populates with the current maximum-offer PPA rate ($0.162/kWh) for Pepco, published by MSAP.

Box 7: Input the expected total first-year PV system production (15,000 kWh).

Box 8: Confirm that the MEA grant is authorized to the contractor, who will apply it to reduce the customer's lease rate. As this project meets that criterion, "Yes" is selected.

Box 9: Input the total system cost ($47,000) into **Box 9**, representing all costs that appear in the disclosure or contract.

Box 10: Input the portion of costs unrelated to the solar system ($5,000)—for example, site work, roof repairs, or other customer-requested upgrades.

Box 11: Input the lease escalator at 2.99% per year.

Box 12: Input the first-year monthly lease rate ($155.75) as stated in the contract.

	Lease Inputs	
5	Customer Utility Service Territory	Pepco
6	Maximum-Offer: First Year Lease Rate with escalator [$/kWh]	$ 0.162
7	First-Year Projected Total PV Generation [kWh/yr]	15,000
8	The MEA grant is authorized to the contractor, in addition to other federal and state incentives, allowing the contractor to provide a discounted lease rate to the resident	Yes
9	Total System Cost (as appears on the contract or disclosure) [$]	$ 47,000
10	Non-solar costs incorporated into the lease rate (enter $0 if lease rate is reflective of solar-related costs only)	$ 5,000
11	Lease Escalator [%/yr]	2.99%
12	First-year monthly lease rate (as appears on the contract)	$ 155.75

These entries capture the key system and financial characteristics necessary for determining compliance with MSAP's minimum benefit policy.

To verify that the system design meets MSAP requirements, the calculator isolates the portion of the customer's lease payment associated strictly with solar costs.
The solar-only share of the total project cost is calculated by removing the non-solar costs from the total system cost:

$$47{,}000-5{,}000=42{,}000$$

The calculator then proportionally applies this ratio to the lease payment to determine the solar portion of the monthly lease rate subject to MSAP's minimum benefits policy:

$$42{,}000/47{,}000=0.8936$$

$$155.75\times0.8936=139.18$$

As shown in **Box 13**, the "first-year monthly lease rate subject to MEA's minimum benefits policy" is $139.18/month. This value represents only the solar portion of the lease payment and is the number used for compliance testing.

Step 4: Review Outputs and Compliance with Maximum Offer Status

The **Box 14** value represents the maximum allowable first-month lease payment ($191.85/month) that still complies with MSAP's minimum benefit policy for customers in the Pepco service territory.

The contractor then compares the solar portion of the actual lease payment ($139.18) against the program's maximum allowable payment ($191.85).

Because $139.18 is less than $191.85, the proposed system design and lease terms meet MSAP program requirements. This means the customer will receive the minimum guaranteed savings compared to their utility avoidable rate, and the project qualifies for the MSAP grant.

13	**First-year monthly lease rate subject to MEA's minimum benefits policy** (for comparison with Maximum Offer) **[$/mo]**	$ **139.18**
14	**Maximum Offer: First-Month Lease Payment subject to MEA's policy [$/mo]**	$ **191.85**
15	**The system design meets MEA program requirements.**	

LOAN SAMPLE CALCULATION

Example Scenario: A homeowner located outside the 13 main Maryland utility territories is financing a residential rooftop solar system through a 25-year loan. The customer's utility is categorized as Other, which allows the user to enter a custom retail electric rate of $0.125/kWh. This input automatically generates a Maximum-Offer First-Year PPA Rate of $0.088/kWh in the calculator. The PV system is expected to produce 9,000 kWh in the first year. The total system cost is $40,000, which includes $5,000 in non-solar costs. The resident will receive a $5,500 MSAP grant. The loan has a 4.00% interest rate and a 25-year term.

Step 1: Identify if the Solar Agreement is a Lease, Loan, Purchase, or PPA

Once the user has the maximum offer calculator open, they select the tab corresponding to the contract type – in this case, the user chooses Loan.

Step 2: Reviewing Static Assumed Values

In the Loan tab, the calculator begins with the same baseline assumptions that apply across all system financing scenarios.

	Static Assumed Values	
1	System Owner NPV Discount Rate [%]	4.75%
2	Annual Degradation Rate [%]	0.50%
3	Lease Term, System Lifespan (25-Year Maximum) [yrs]	25
4	PPA Escalator [%/yr]	3.00%

Box 1 sets the Net Present Value (NPV) Discount Rate to 4.75%, reflecting that money today is worth more than in the future.

Box 2 assumes an Annual Degradation Rate of 0.50%, capturing the gradual decline in PV system performance over time.

Box 3 specifies a 25-year system lifespan and loan term limit, representing the standard MSAP analysis period.

Box 4 lists a standard 3.00% annual escalator reference to ensure consistency across PPA and lease comparisons.

These fixed assumptions ensure uniformity across all financial mechanisms evaluated under MSAP.

Step 3: Entering Contract Inputs

Box 5: Select "Other" as the customer's utility service territory, enabling manual entry of a custom retail rate.

Box 6: Automatically populates the Maximum-Offer PPA Rate ($0.088/kWh), based on the entered custom utility rate of $0.125/kWh.

Box 7: Input the system's first-year projected PV generation (9,000 kWh).

Box 8: Input the loan term (25 years), and in Box 9, the loan interest rate (4.00%).

Box 10: Input the total system cost ($40,000) as shown in the customer contract or disclosure.

Box 11: Input the non-solar costs ($5,000), (e.g..roofing, trenching, batteries, tree trimming, EV chargers etc.).

Box 12: Input the MEA grant amount to the resident ($5,500).

	Loan Inputs			Input Custom Utility Electric Rate Below ($/kWh)
5	Customer Utility Service Territory	Other		
6	Maximum-Offer: First Year Loan Rate with escalator [$/kWh]	$	0.088	0.125
7	First-Year Projected Total PV Generation [kWh/yr]		9,000	
8	Loan Term (25-Year Maximum) [yrs]		25	
9	Loan Interest Rate (as appears on the contract) [%]		4.00%	
10	Total System Cost (as appears on the contract) [$]	$	40,000	
11	Non-solar costs (enter $0 if all costs are solar-related) [$]	$	5,000	
12	MEA grant amount to the resident (enter $0 if the grant is authorized to the contractor instead) [$]	$	5,500	

These values define the financial inputs required to assess program compliance.

The calculator determines the portion of the customer's loan principal attributable solely to solar costs after excluding non-solar components and applying direct customer incentives (MSAP grant and federal ITC).

The formula applied in **Box 13** is:

$$\text{Loan Principal Subject to Policy} = 40{,}000 - 5{,}000 - 5{,}500 = 29{,}500$$

Thus, **Box 13** = $29,500, representing the amount of the loan that is subject to MSAP's minimum benefits compliance check.

Step 4: Review Outputs and Compliance with Maximum Offer Status

Box 14 lists the Maximum-Offer Loan Principal ($15,811)—the highest allowable solar loan amount permitted under MSAP to still provide the required customer benefit.

Box 15 shows the Maximum-Offer Loan Payment ($83.46/month)—the corresponding maximum monthly payment threshold.

The calculator compares the customer's actual solar-related loan principal ($29,500) against the program's limit ($15,811). Because the actual amount exceeds the allowable value, the financing arrangement fails to meet MSAP's minimum benefits requirement.

Box 17 therefore indicates that the system design does not meet MEA program requirements.

13	**Total Loan Principal subject to MEA's minimum benefits policy** (for comparison with Maximum Offer) **[$]**	$	29,500
14	**Maximum Offer: Loan Principal subject to MEA's policy [$]**	$	15,811
15	**Maximum Offer: Loan Payment subject to MEA's policy [$/mo]**		$83.46
16	**The system design does not meet MEA program requirements.**		

PURCHASE SAMPLE CALCULATION
Example Scenario: A homeowner in the Williamsport Municipal Electric Light System service territory plans to purchase a small residential solar system outright. The PV system is expected to produce 5,000 kWh in its first year. The total system cost listed on the contract is $15,000, which includes $1,750 in non-solar costs. The customer is not receiving an MEA grant. The system design and contract terms will be evaluated using the MSAP Maximum Offer Calculator to confirm whether the purchase meets the minimum benefit policy.

Step 1: Identify if the Solar Agreement is a Lease, Loan, Purchase, or PPA

Once the developer has the maximum offer calculator open, they select the tab corresponding to the contract type – in this case, the developer chooses System Purchase.

4 Step 2: Reviewing Static Assumed Values
When using the Purchase tab, the calculator begins with standard assumptions that ensure consistency across all program evaluations.

	Static Assumed Values	
1	System Owner NPV Discount Rate [%]	4.75%
2	Annual Degradation Rate [%]	0.50%
3	Lease Term, System Lifespan (25-Year Maximum) [yrs]	25
4	PPA Escalator [%/yr]	3.00%

Box 1 defines the Net Present Value (NPV) Discount Rate as 4.75%, accounting for the time value of money.

Box 2 applies a 0.50% Annual Degradation Rate to capture expected performance declines in PV generation.

Box 3 sets the maximum analysis period or system lifespan at 25 years.

Box 4 maintains a standard 3.00% annual escalator reference for comparability with other contract types.

These fixed assumptions serve as the baseline for evaluating system purchase offers under MSAP.

Step 3: Entering Contract inputs

Box 5: Select Williamsport Municipal Electric Light System from the dropdown utility list.

Box 6: Automatically populates with the Maximum-Offer First-Year PPA Rate ($0.086/kWh) applicable to that utility.

Box 7: Input the first-year PV generation (5,000 kWh).

Box 8: Input the total system cost from the purchase contract ($15,000).

Box 9: Input $1,750 in non-solar costs, representing components not required for solar installation (e.g.,roofing, trenching, batteries, tree trimming, EV chargers etc.).

Box 10 shows zero since the resident is not receiving a grant.

	System Purchase Inputs	
5	Customer Utility Service Territory	Williamsport Municipal Electric Light System
6	Maximum-Offer: First Year PPA Rate with escalator [$/kWh]	$ 0.086
7	First-Year Projected Total PV Generation [kWh/yr]	5,000
8	Total System Cost (as appears on the contract, or internally valued) [$]	$ 15,000
9	Non-solar costs (enter $0 if all costs are solar-related) [$]	$ 1,750
10	MEA grant amount to the resident (enter $0 if the grant is authorized to the contractor instead) [$]	$ -

These entries define all necessary inputs to calculate the system's cost subject to MSAP's minimum benefits policy.

The calculator determines the portion of the total system cost that represents the **solar-only cost** subject to MSAP's minimum benefit requirements.

The formula applied in **Box 11** is:

$$\text{Total Cost Subject to Policy} = 15{,}000 - 1{,}750 = 13{,}250$$

Thus, **Box 11** = $13,250, representing the solar portion of the system purchase cost evaluated for compliance.

Step 4: Review Outputs and Compliance with Maximum Offer Status

Box 12 displays the Maximum-Offer System Purchase Cost ($7,993)—the highest allowable system purchase price under MSAP for the Williamsport Municipal Electric Light System territory.

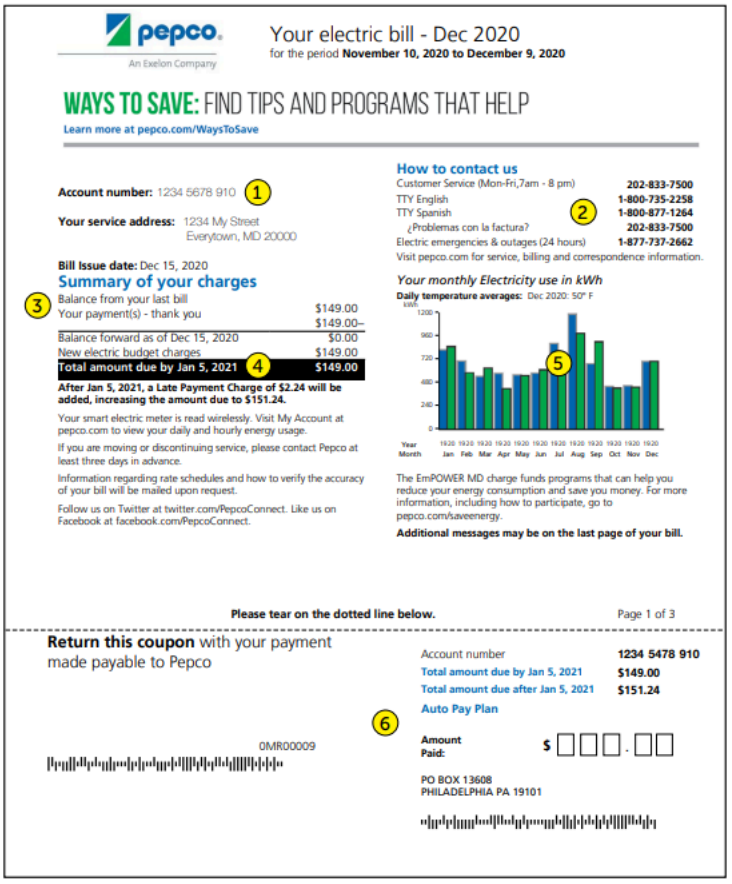
The calculator compares the total cost subject to policy ($13,250) against this maximum allowable value ($7,993). Because the actual purchase cost exceeds the maximum allowable limit, the design does not satisfy the MSAP minimum benefits standard.

Box 13 therefore indicates that the system design does not meet MEA program requirements.

11	**Total Cost subject to MEA's minimum benefits policy** (for comparison with Maximum Offer) **[$]**	**$ 13,250**
12	**Maximum Offer: System Purchase Cost subject to MEA's policy [$]**	**$ 7,993**

13	**The system design does not meet MEA program requirements.**

4 Sample Bill



pepco
An Exelon Company

Your electric bill - Dec 2020
for the period **November 10, 2020 to December 9, 2020**

WAYS TO SAVE: FIND TIPS AND PROGRAMS THAT HELP
Learn more at pepco.com/WaysToSave

Account number: 1234 5678 910 (1)

Your service address: 1234 My Street
Everytown, MD 20000

Bill Issue date: Dec 15, 2020

Summary of your charges (3)

Balance from your last bill	$149.00
Your payment(s) - thank you	$149.00–
Balance forward as of Dec 15, 2020	$0.00
New electric budget charges	$149.00
Total amount due by Jan 5, 2021 (4)	**$149.00**

After Jan 5, 2021, a Late Payment Charge of $2.24 will be added, increasing the amount due to $151.24.

Your smart electric meter is read wirelessly. Visit My Account at pepco.com to view your daily and hourly energy usage.

If you are moving or discontinuing service, please contact Pepco at least three days in advance.

Information regarding rate schedules and how to verify the accuracy of your bill will be mailed upon request.

Follow us on Twitter at twitter.com/PepcoConnect. Like us on Facebook at facebook.com/PepcoConnect.

How to contact us (2)

Customer Service (Mon-Fri,7am - 8 pm)	202-833-7500
TTY English	1-800-735-2258
TTY Spanish	1-800-877-1264
¿Problemas con la factura?	202-833-7500
Electric emergencies & outages (24 hours)	1-877-737-2662

Visit pepco.com for service, billing and correspondence information.

Your monthly Electricity use in kWh (5)

Daily temperature averages: Dec 2020: 50° F

The EmPOWER MD charge funds programs that can help you reduce your energy consumption and save you money. For more information, including how to participate, go to pepco.com/saveenergy.

Additional messages may be on the last page of your bill.

Please tear on the dotted line below. Page 1 of 3

Return this coupon with your payment made payable to Pepco

0MR00009

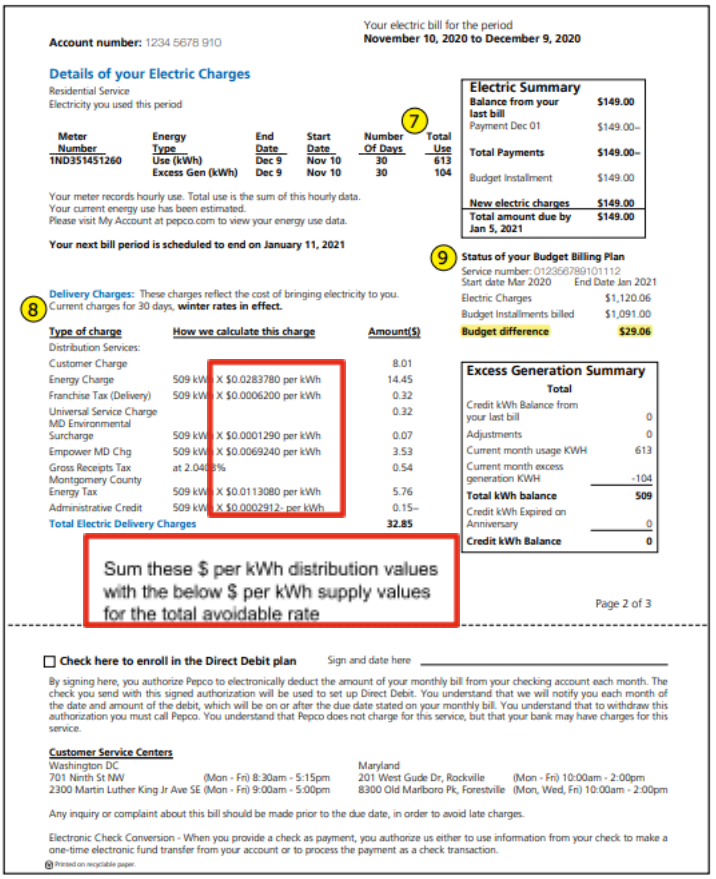
Account number	1234 5478 910
Total amount due by Jan 5, 2021	$149.00
Total amount due after Jan 5, 2021	$151.24

Auto Pay Plan (6)

Amount Paid: $ □□□.□□

PO BOX 13608
PHILADELPHIA PA 19101

1. **Account Number** – This is your Pepco Account Number which you will reference when contacting them.
2. **Contact Information** – Find key information here, such as phone numbers (for English and Spanish), hours of business, website address and other important information.
3. **Account Summary** – Your previous balance, payments and current charges are displayed here.
4. **Due Date**
5. **Usage History** – To help you better monitor your electricity consumption, this bar graph details your usage history over the past 12 months and compares it to your usage over the same months last year.
6. **Payment Stub** – Detach and return with your payment. This section includes your Account Number, Amount Due, Amount Paid and the Due Date.



Account number: 1234 5678 910

Your electric bill for the period
November 10, 2020 to December 9, 2020

Details of your Electric Charges

Residential Service
Electricity you used this period

Meter Number	Energy Type	End Date	Start Date	Number Of Days	Total Use
1ND351451260	Use (kWh)	Dec 9	Nov 10	30	613
	Excess Gen (kWh)	Dec 9	Nov 10	30	104

(7)

Your meter records hourly use. Total use is the sum of this hourly data.
Your current energy use has been estimated.
Please visit My Account at pepco.com to view your energy use data.

Your next bill period is scheduled to end on January 11, 2021

Electric Summary

Balance from your last bill	**$149.00**
Payment Dec 01	$149.00–
Total Payments	**$149.00–**
Budget Installment	$149.00
New electric charges	**$149.00**
Total amount due by Jan 5, 2021	**$149.00**

(9) **Status of your Budget Billing Plan**
Service number: 012356789101112
Start date Mar 2020 End Date Jan 2021

Electric Charges	$1,120.06
Budget Installments billed	$1,091.00
Budget difference	**$29.06**

(8) **Delivery Charges:** These charges reflect the cost of bringing electricity to you.
Current charges for 30 days, **winter rates in effect.**

Type of charge	How we calculate this charge	Amount($)
Distribution Services:		
Customer Charge		8.01
Energy Charge	509 kWh X $0.0283780 per kWh	14.45
Franchise Tax (Delivery)	509 kWh X $0.0006200 per kWh	0.32
Universal Service Charge MD Environmental Surcharge	509 kWh X $0.0001290 per kWh	0.32
Empower MD Chg	509 kWh X $0.0069240 per kWh	0.07
Gross Receipts Tax Montgomery County Energy Tax	at 2.0483%	3.53
Administrative Credit	509 kWh X $0.0113080 per kWh	0.54
Total Electric Delivery Charges	509 kWh X $0.0002912- per kWh	5.76 0.15– **32.85**

Excess Generation Summary

	Total
Credit kWh Balance from your last bill	0
Adjustments	0
Current month usage KWH	613
Current month excess generation KWH	-104
Total kWh balance	**509**
Credit kWh Expired on Anniversary	0
Credit kWh Balance	**0**

Sum these $ per kWh distribution values with the below $ per kWh supply values for the total avoidable rate

Page 2 of 3

☐ **Check here to enroll in the Direct Debit plan** Sign and date here _____

By signing here, you authorize Pepco to electronically deduct the amount of your monthly bill from your checking account each month. The check you send with this signed authorization will be used to set up Direct Debit. You understand that we will notify you each month of the date and amount of the debit, which will be on or after the due date stated on your monthly bill. You understand that to withdraw this authorization you must call Pepco. You understand that Pepco does not charge for this service, but that your bank may have charges for this service.

Customer Service Centers

Washington DC
701 Ninth St NW (Mon - Fri) 8:30am - 5:15pm
2300 Martin Luther King Jr Ave SE (Mon - Fri) 9:00am - 5:00pm

Maryland
201 West Gude Dr, Rockville (Mon - Fri) 10:00am - 2:00pm
8300 Old Marlboro Pk, Forestville (Mon, Wed, Fri) 10:00am - 2:00pm

Any inquiry or complaint about this bill should be made prior to the due date, in order to avoid late charges.

Electronic Check Conversion - When you provide a check as payment, you authorize us either to use information from your check to make a one-time electronic fund transfer from your account or to process the payment as a check transaction.

Printed on recyclable paper.

7. **Usage Information** – Your electricity usage during the billing period. This also lets you know if your usage was based on an *actual* or *estimated* meter reading. (This bill shows an *estimated* meter reading.)
8. **Delivery Charges** – This is a break down of your energy distribution costs.
   a. **Customer Charge**: Charge for costs associated with having a distribution system (meter readings, billing, service line maintenance, and equipment.)
   b. **Energy Charge**: The amount charged for delivering the energy consumed.
   c. **Franchise Tax**: The franchise tax is applied to public service companies such as gas, electric, and telephone for the privilege of doing business in Maryland.
   d. **Universal Service Charge MD Environmental Surcharge**: A surcharge which established the Environmental Trust Fund to support the Power Plant Research Program. Funding for the program is provided through an electric environmental surcharge (EES) that is assessed on all electricity delivered in the State.
   e. **Empower MD Charge**: Programs include lighting and appliance rebates for homeowners, Home Performance with ENERGY STAR (including home energy assessments, and 50% rebates for energy improvements like insulation and air sealing).
   f. **Gross Receipts Tax Montgomery County Energy Tax**: Utilizing the current Public Service Commission assessment factor of 0.001937, which is effective July 1, 2018, and the Maryland Gross Receipts Tax rate of 2.0%, the adjusted MCFET factors will be $0.0972841 per therm for residential customers.
9. **Budget Billing Status** – Important: If you signed up for *Budget Billing*, keep an eye on this section. If you have a *Budget Difference* that is red or negative, your monthly bill may increase, or you may need to pay more at the end of the billing year.

Your electric bill for the period
November 10, 2020 to December 9, 2020

Account number: 1234 5678 910

Supply Charges: These charges reflect the cost of producing electricity for you. You can compare this part of your bill to offers from competitive suppliers. Your Price to Compare is 8.07 cents ($0.0807) per kWh. When shopping for electric suppliers, compare this price to those proposed by other suppliers. This price reflects the average annual amount a customer on this rate pays per kilowatt-hour for Electric Supply. For information on electric energy suppliers please visit mdelectricchoice.com.

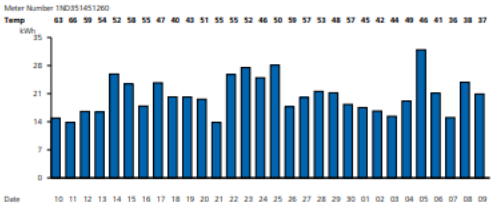
Billing Period: Nov 10, 2020 to Dec 9, 2020 (30 days)

Type of charge	How we calculate this charge	
Transmission Services:		
Energy Charge	509 kWh X $0.0179400 per kWh	
Gross Receipts Tax	at 2.0418%	
Generation Services:		
Energy Charge	509 kWh X $0.0651600 per kWh	33.17
Procurement Cost Adjustment	509 kWh X $0.0044500- per kWh	2.27–
Total Electric Supply Charges		**40.22**
Total Electric Charges - Residential Service		**73.07**

Sum these $ per kWh supply values with the above $ per kWh distribution values for the total avoidable rate

10

Your daily electricity use for this bill period. Visit My Account at pepco.com to see your hourly electricity use.



You can help a Pepco customer in need of assistance with their energy bills by contributing to the Good Neighbor Energy Fund. Simply pay exactly $1.00 over your Pepco bill amount and that dollar will be contributed to the Good Neighbor Energy Fund administered by a 501(c)3 non-profit organization in your community. Program contributions must be exactly $1.00 over the billed amount; amounts over $1.00 will not be identified as a program contribution and will result in a credit to your account. Pepco will match each donation by contributing a dollar to the fund, up to $100,000.

10. Supply Charge – This view shows the costs of producing the energy that you used. In the blue graph, you can see exactly how much you used each day of the month.

Electric Supply Charge + Electric Delivery Charge = Total Amount Billed