

Mass Solar Loan

Program Manual

Version 1.0

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IMPORTANT NOTICES:

- A homeowner or System Owner is not eligible to participate in the Mass Solar Loan program (“Program”), if the System Owner has received an “authorization to interconnect” letter for the Qualified Project from a public or private utility provider before a Program Loan has been closed with a participating Lender, and a Loan Support Application has been APPROVED in the Application Portal. Any solar installation work done prior to a Loan Closing with a participating Lender and Loan Support Application approval by MassCEC is done at the System Owner’s own risk.
- If the solar PV project has already received a rebate through the Commonwealth Solar II rebate program, or received a rebate as part of previous Solarize Mass programs (and more particularly through the: (i) 2011 program in the following jurisdictions: Harvard, Hatfield, Scituate, Winchester; or (ii) 2012 program in the following jurisdictions: Acton, Arlington, Boston, Hopkinton, Melrose, Mendon, Millbury, Sutton, Montague, Newburyport, Palmer, Pittsfield, Lenox, Shirley, Wayland, Lincoln, Sudbury; or (iii) 2013 Round 1 program in the following jurisdictions: Bourne, Brookline, Carlisle, Chelmsford, Lee, Medford, Medway, Newton, Northampton, Williamstown; or (iv) 2013 Round 2 program in the following jurisdictions: Adams, Amherst, Andover, Great Barrington, Egremont, Lexington, Bedford, Needham, Salem, Swampscott, Watertown, Wellfleet, Williamsburg, Whately, Chesterfield), the System Owner is **NOT** eligible to participate in the Program for the same solar PV project. Projects participating in Solarize Mass that have NOT received a rebate are eligible to participate in this Program.
- “Do-it-yourself” projects are not eligible to participate in the Program. This Program is only available for solar PV projects completed by professional, licensed contractors.
- All solar PV projects require that a Massachusetts licensed electrician perform all electrical work associated with each project.
- Only lending institutions that have signed the *Financing Program Agreement* (Attachment A), are eligible to originate loans under the Mass Solar Loan program.

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Attachments to this Program Manual are available as separate documents. Refer to Section 7 of this Program Manual for a complete list of Attachments.

1. INTRODUCTION

About this Program Manual

This Program Manual for the Mass Solar Loan program (“Program”) contains the terms and conditions of the Program and is intended to be used by System Owners, solar PV project installers (“Solar Installers”), and participating lending institutions (“Lenders”). The Program Manual describes the Mass Solar Loan application process, available Program Loan Support incentives, the Loan Support Payment process for participating Lenders, and Program definitions and requirements. This Program Manual may be updated from time to time to reflect current Program Loans offered and other changes required under the Program.

Program Overview and Background

Since 2008, the solar electric industry in Massachusetts has grown into a robust economic sector with more than 1,400 businesses and 12,000 workers. As of 2015, solar power projects in the Commonwealth of Massachusetts provide enough power to supply to more than 100,000 homes.

Building off this success, the Program connects Massachusetts residents and property owners who want to purchase solar electric systems with Lenders that can offer low-interest financing for solar PV projects. The \$30 million Program is a partnership between the Massachusetts Department of Energy Resources (“DOER”) and the Massachusetts Clean Energy Center (“MassCEC”) and works with Lenders to expand borrowing options for Massachusetts residents and property owners installing solar PV projects on their homes or participating in Community Shared Solar (“CSS”) projects (hereinafter collectively “System Owners”). The Program expands access to low-interest financing by providing loan support for Massachusetts residents with moderate incomes. The Program facilitates attractive solar loans for System Owners by mitigating Lender risk via Interest Rate Buy-Downs (“IRBD”), Income Based Loan Support (“IBLS”), and a Loan Loss Reserve (“LLR”). The Program will utilize \$30 million of Alternative Compliance Payments (“ACP”) received by DOER under the Massachusetts Renewable Portfolio Standard (“RPS”).¹

In 2013, DOER commissioned a study to evaluate the benefits of homeowner’s direct-ownership of solar projects versus third-party ownership. This analysis indicated that financial benefits to System Owners (as well as to the Massachusetts economy) are significantly greater when the homeowner or MA resident owns the project rather than contracts for a third-party owned project.² The Program will continue to develop the Massachusetts solar market while providing more residents and property owners with the ability to own their solar PV project and achieve the cost savings and environmental benefits of this clean, renewable energy source.

General Information

Massachusetts Residents and Property Owners

The Program will allow Massachusetts System Owners to obtain low-interest loans to purchase and install solar electric systems. Loans may also be available for System Owners interested in purchasing part of a CSS project (“Member-System Owner”), which involves a group of people each contributing to a portion of a larger solar system.

Potential System Owners should familiarize themselves with solar electricity and then work with an experienced Solar Installer who will guide them through the Mass Solar Loan application process. Loan offerings will vary by Lender, and System Owners will be subject to the Lender’s normal loan qualification process to determine if they are eligible for a loan. Additional information regarding eligibility criteria is available in Section 3 of this Program Manual.³

¹ More information about the RPS program can be found [here](#).

² The study can be found at: [Comparative Regional Economic Impacts of Solar Ownership/Financing Alternatives](#)

³ More information about solar electricity and the Mass Solar Loan Program can be found on www.masssolarloan.com.

Lenders

The Program provides participating Lenders with opportunities to develop new business and the ability to gain experience providing loans for residential solar PV projects. It is anticipated that all Lenders participating in the Program will provide more than \$130 million in consumer solar loans in the aggregate over the life of the Program.

Lending to System Owners for a solar PV project is unlike a typical consumer loan since solar PV projects can generate significant direct financial benefits for System Owners through reduced electricity consumption, federal and state tax incentives, and state-level solar production incentives. The financial benefits of direct ownership can enable System Owners to effectively repay the loan in a timely manner.

Lenders will not be responsible for determining eligibility of System Owners for the Program. MassCEC will determine System Owner eligibility but Lenders will be expected to co-operate with MassCEC in the process of making eligibility determinations. Loan underwriting will be the responsibility of participating Lenders.

Lenders interested in participating in the Program should contact MassCEC at solarloan@masscec.com. Lenders will be required to sign a *Financing Program Agreement* (Attachment A) in order to participate in the Program and to become a Qualified Lender.

Solar Installers

The Program provides an opportunity for Solar Installers to assist their residential customers in securing low interest consumer financing for a solar PV project.

Program Administrators

The Massachusetts Department of Energy Resources (DOER)

The Massachusetts Department of Energy Resources (DOER) develops and implements policies and programs aimed at ensuring the adequacy, security, diversity, and cost-effectiveness of the Commonwealth's energy supply within the context of creating a cleaner energy future. To that end, DOER strives to:

- Ensure deployment of all cost-effective energy efficiency
- Maximize development of clean energy resources
- Create and implement energy strategies to assure reliable supplies and improve the cost of clean energy relative to fossil-fuel based generation
- Support Massachusetts' clean energy companies and spur Massachusetts' clean energy employment
- DOER is an agency of the Executive Office of Energy and Environmental Affairs ("EEA")

Within the Program, DOER shall oversee MassCEC's duties as the central administrator and makes the final decision regarding any proposed Program modifications.

Massachusetts Clean Energy Center (MassCEC)

Created by the Green Jobs Act of 2008, the Massachusetts Clean Energy Center (MassCEC) is dedicated to accelerating the success of clean energy technologies, companies and projects in the Commonwealth—while creating high-quality jobs and long-term economic growth for the people of Massachusetts. Since its inception in 2009, MassCEC has helped develop clean energy, supported municipal clean energy projects and invested in residential and commercial renewable energy installations and helped facilitate the overall creation of a robust marketplace for innovative clean technology companies and service providers.

MassCEC serves as the central administrator and fiscal agent of the Program, and will implement the loan support incentives for approved solar PV projects. MassCEC will also provide technical oversight and management of the Program, and will collect project and financial information related to solar PV projects and associated loans.

Questions and Answers

Questions concerning this Program Manual should be emailed to solarloan@masscec.com. All inquiries should be submitted well in advance of a System Owner's and Solar Installer's project deadlines and reference the Mass Solar Loan Program Manual. MassCEC will post a list of frequently asked questions on the website: www.masssolarloan.com. System Owners, Solar Installers, and Lenders are encouraged to visit the website prior to submitting a question. Only answers posted on the website should be treated as MassCEC's official response to any question.

2. KEY DEFINITIONS

PROGRAM PARTICIPANT DEFINITIONS	
CSS	A Community Shared Solar project.
Lender or Qualified Lender	<p>The lending institution that has signed the <i>Financing Program Agreement</i> (Attachment A), is approved by MassCEC to provide loans to System Owners, and is eligible to receive Program Loan Support as part of the Program.</p> <p>A Lender may be a bank, credit union, or other lending entity who offers and provides loans with terms that meet the Program Loan eligibility requirements outlined in Section 3, and must meet the following criteria to participate in the Program:</p> <p><i>Such Lender shall be a depository institution as defined by the Board of Governors of the Federal Reserve System per Section 19(b)(1)(A)(i)-(vi) of the Federal Reserve Act (12 USC 461).</i></p> <p>A Lender shall apply to MassCEC for Program Loan Support by submitting a Loan Support Application via the Application Portal, and ensure that the Program Loan is closed with the System Owner within one business day of submitting the Loan Support Application to the Application Portal. If the loan does not close within one business day of Program Loan Support submittal, Lender is required to notify MassCEC immediately so that the Program Loan Support funds may be released.</p> <p>The Lender will always be the recipient of the Program Loan Support on behalf of a System Owner.</p>
Member-System Owner	For CSS projects, the System Owner will be referred to as the Member-System Owner, which is any Massachusetts resident or property owner that receives a portion of the electricity generated through a CSS project via virtual net metering (or receives some other financial benefit from the system). The Member-System Owner must have a contractual ownership interest in the CSS project. All other requirements and benefits, including applicable loan support, that apply to System Owners in this Program Manual will also apply to all Member-System Owners.
Solar Installer(s)	The Solar Installer is the person or entity that prepares and submits the Technical Application and Project Completion information on behalf of the System Owner into the Application Portal and meets the Solar Installer eligibility criteria set forth below in this Program Manual.
System Owner	A Massachusetts resident or property owner that will be the owner of the solar PV project that is applying for Program Loan Support as part of the Program and meets the System Owner eligibility criteria set forth in this Program Manual.
System Owner Entity	For CSS projects, a parent company or parent organization and all of its subsidiaries are considered a single System Owner Entity. The System Owner Entity may be separate from the Member-System Owner.
Subcontractor	For the purposes of the Application Portal, a Subcontractor who is responsible for the

	electrical portion of the installation or is responsible for the any other aspect of the installation work of the project in conjunction with Solar Installer. The Technical Application must list all Subcontractors engaged for each project, if applicable.
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PROJECT DEFINITIONS	
Eligible Property	An Eligible Property shall include (i) a property with a residential utility rate code and (ii) a property without a residential rate code only if such property owner seeks qualification from MassCEC as an Eligible Property. A homeowner may seek qualification under subsection (ii) by providing a justification for the non-residential utility rate code and providing a residential property designation filed in the local assessor’s office. For CSS projects this refers to the property to which the net metering credits are being allocated.
Installation Period	A period of one (1) year from the date MassCEC grants its approval of the Loan Support Application.
Project Cost (Anticipated and Final)	<p>Anticipated Project Cost – Anticipated Project Cost is the estimated total cost as identified in the Turnkey Contract between the System Owner and the Solar Installer that reflects the cost for installation and associated project costs per the <i>Minimum Technical Requirements</i> (Attachment C).</p> <p>Final Project Cost – Final Project Cost is the actual total cost incurred through the completion of the Qualified Project.</p>
Project Capacity (Anticipated and Final)	<p>Anticipated Project Capacity – Anticipated Project Capacity is the proposed total capacity (DC) as identified in the Turnkey Contract between the System Owner and the Solar Installer that reflects the capacity for installation per the <i>Minimum Technical Requirements</i> (Attachment C).</p> <p>Final Project Capacity – Final Project Capacity is the actual total capacity (DC) of the completed Qualified Project.</p>
Qualified Project	The solar photovoltaic (PV) project installed on the System Owner’s property, (or any Member-System owner’s portion of a larger CSS project as described in Section 3 of this Program Manual) that (i) meets the current technical eligibility requirements listed in the <i>Minimum Technical Requirements</i> (Attachment C) and (ii) is grid-tied within a Massachusetts electric distribution company. This includes investor owned utilities and municipal light plant territories in which a municipal department is responsible for the transmission and supply of electricity to customers for a particular municipality. A Qualified Project shall be described in terms of the total project capacity (kilowatts in direct current at standard test conditions ⁴) being installed. If project capacity is to be installed on multiple buildings (or in combination with a ground-mounted system) the total capacity tied to any single electric meter will be considered one project. One Qualified Project per meter will be eligible to participate in the Program at one time, except if the project meets the exemptions outlined in the Behind the Meter Requirements set forth below.
Turnkey Contract	The required Turnkey Contract between the Solar Installer and System Owner that identifies a project manager, and includes services for Technical Application preparation, equipment procurement and installation, site preparation, permitting and interconnection support, Project Completion paperwork, training, operations and maintenance, and compliance with all applicable state laws, local laws, and Program requirements, including, without limitation, the <i>Minimum Technical Requirements</i> (Attachment C). The Turnkey Contract shall include a budget that identifies key project components and a timeline (with a corresponding payment schedule)

⁴ All references to project capacity in watts or kilowatts in this document will be in direct current at standard test conditions.

	for installation of the project. Turnkey service must include responsibility for the Solar Installer to meet all Program requirements, securing required permits and engineering stamps, installation of the project, scheduling and participation in all required inspections, and provide warranty services as required. The Turnkey Contract shall be contingent upon the System Owner qualifying for a Program Loan and is required to be in place prior to the Solar Installer submitting a Technical Application for the Qualified Project.
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LOAN DEFINITIONS							
Class A Program Loan	A Program Loan provided to a System Owner with a FICO score of 720 and above.						
Class B Program Loan	A Program Loan provided to a System Owner with a FICO score between 681 and 719.						
Class C Program Loan	A Program Loan provided to a System Owner with a FICO score of 680 and below.						
Credit Score Category	<p>The FICO score of a System Owner that determines the level of Loan Loss Reserve support that MassCEC will provide to the Lender. In the event that FICO scores from multiple credit reporting agencies classify System Owners in different Credit Score Categories, the lowest FICO score shall determine the applicable Credit Score Category.</p> <p>FICO scores will be designated to the following classes:</p> <table border="1" style="width: 100%;"> <tr> <td>CLASS A LOANS</td> <td>720 and Above</td> </tr> <tr> <td>CLASS B LOANS</td> <td>Between 681-719</td> </tr> <tr> <td>CLASS C LOANS</td> <td>680 and Below</td> </tr> </table>	CLASS A LOANS	720 and Above	CLASS B LOANS	Between 681-719	CLASS C LOANS	680 and Below
CLASS A LOANS	720 and Above						
CLASS B LOANS	Between 681-719						
CLASS C LOANS	680 and Below						
Eligible Losses	Unrecovered losses on a Program Loan that are 120 days past due, and which the Lender has exercised commercially reasonable efforts to collect or has attempted to bring the Program Loan current in a manner consistent with its practices for other similar loans that are not Program Loans, as certified by Lender.						
Financing Program	The Financing Program shall mean the Program as defined in the Preamble to this Agreement.						
Gross Loan Interest Rate	The interest rate set by the lender for Program Loans. This Gross Loan Rate shall not exceed WSJ Prime + 2.75%.						
Income Based Loan Support (IBLS)	<p>IBLS is an additional incentive that System Owners may qualify for depending on their household income, as determined by their most recent tax filing with the Internal Revenue Service (“<u>IRS</u>”).</p> <p>IBLS Funds – The total funding amount MassCEC has allocated to providing IBLS for the benefit of all participating Lenders on a first-come first-serve basis, for those System Owners applying for a loan that have qualified for IBLS. MassCEC has initially designated \$10,000,000 for IBLS Funds.</p> <p>IBLS Incentive Rate – A specified percentage of the Program Loan Amount to be paid by MassCEC for the benefit of a System Owner which is based on a System Owner’s annual income. The annual income criteria are designated as either a Category 1 or Category 2 bracket under the Program, as more particularly described below.</p> <p>IBLS Category – The IBLS income level designation to qualify for IBLS incentive rate financing may be either a Category 1 or a Category 2. <u>Category 1</u> refers to those System Owners with a household income of less than or equal to 100% of the Massachusetts median household</p>						

	<p>income, as designated by the current U.S. Census. <u>Category 2</u> refers to those System Owners with (i) a household income of greater than 100% of Massachusetts median household income as designated by the current U.S. Census, <u>and</u> (ii) less than or equal to 120% of the Massachusetts median household income as designated by the U.S. Census.</p> <p><u>IBLS Reserved Funds</u> – The amount of IBLS funding that a Lender reserves at the time of Program Loan closing. For each Program Loan, a Loan Support Application will need to be submitted into the Application Portal to reserve the funds. The amount is based on the IBLS Incentive Rate (according to the IBLS Category) and the specified percentage of the Program Loan Amount. Under no circumstances can the IBLS Reserved Funds exceed the Anticipated Project Cost or Program Loan Amount.</p> <p><u>IBLS Payment</u> – The IBLS Payment is the amount of IBLS funding that MassCEC pays to the Lender after Project Completion Approval and is based on the lesser of Program Loan Amount or Final Project Cost. Under no circumstances shall the IBLS Payment exceed the IBLS Reserved Funds or Program Loan Amount. The IBLS Payment will reduce the amount of the Program Loan Principal payments payable by the System Owner to the Lender and such payments will be paid by MassCEC to the Lender for the benefit of the System Owner. An IBLS Payment is only available if (i) the System Owner satisfies the qualification criteria set forth in Section 4 below, (ii) the Qualified Project meets Project Completion requirements, and (iii) MassCEC approves the completion paperwork submitted to the Application Portal.</p>									
<p><i>Income Based Loan Support Category and Incentive Rate</i></p>	<p>The IBLS is based on the Massachusetts median household income as defined by the current US Census Bureau 5-year estimate.</p> <table border="1" data-bbox="358 894 1406 1087"> <thead> <tr> <th>Category</th> <th>Income Bracket (% of MA Median Household Income)</th> <th>IBLS Incentive Rate (% of Program Loan or System Cost)</th> </tr> </thead> <tbody> <tr> <td>IBLS Category 1</td> <td>≤ 100%</td> <td>30%</td> </tr> <tr> <td>IBLS Category 2</td> <td>> 100% and ≤ 120%</td> <td>20%</td> </tr> </tbody> </table>	Category	Income Bracket (% of MA Median Household Income)	IBLS Incentive Rate (% of Program Loan or System Cost)	IBLS Category 1	≤ 100%	30%	IBLS Category 2	> 100% and ≤ 120%	20%
Category	Income Bracket (% of MA Median Household Income)	IBLS Incentive Rate (% of Program Loan or System Cost)								
IBLS Category 1	≤ 100%	30%								
IBLS Category 2	> 100% and ≤ 120%	20%								
<p><i>Interest Rate Buy-Down (IRBD)</i></p>	<p>The portion of the Program Loan interest payments that MassCEC will “buy down” and pay directly to the Lender are interest rate buy down (“<u>IRBD</u>”) payments.</p> <p>The IRBD will be calculated as the difference between the net present value of the principal and interest payments the System Owner will pay to the Lender after the application of the IRBD subsidy and the net present value of the total payment which the Lender would have received for the loan before the application of the IRBD subsidy.</p> <p><u>IRBD Rate</u> – The maximum rate of the interest rate reduction applied to the Gross Loan Interest Rate as a result of the IRBD subsidy.</p> <p><u>IRBD Funds Available</u> – The total funding amount MassCEC has allocated to providing IRBD for Program Loans for the benefit of all participating Lenders on a first-come first-serve basis. MassCEC has initially designated \$9,000,000 for IRBD Funds.</p> <p><u>IRBD Reserved Funds</u> – The IRBD amount that a Lender reserves based on estimated amounts after a Loan Support Application has been submitted into the Application Portal to reserve funds and in a final amount after the Program Loan has closed. Total IRBD Reserved Funds for each Program Loan is based on the Program Loan Amount and cannot exceed the Anticipated Project Cost.</p> <p><u>IRBD Payments</u> – The IRBD payments shall be made by MassCEC in two disbursements:</p> <ul style="list-style-type: none"> (i) First IRBD Disbursement: The first payment shall be paid upfront at the loan closing between Lender and the System Owner. (ii) Second IRBD Disbursement: The remaining amount of the IRBD will be paid by MassCEC to Lender at Project Completion Approval. The System Owner shall be responsible for paying the remaining interest payments to the Lender over the 									

	<p>term of the Program Loan.</p> <p>The amount of the IRBD disbursements shall be based on the lesser of (i) the total Program Loan Amount or (ii) the Final Project Cost (assuming the Loan terms submitted in the Loan Support Application have not changed). Under no circumstance shall the IRBD Payment exceed the IRBD Reserved Funds. A Lender may choose to adjust a Program Loan to meet the Final Project Cost (or percentage of that cost requested to be financed through a loan), but is not required to.</p>
Lending Period	<p>The period of time that the Lender may provide Program Loans to System Owners commencing on the Effective Date of the <i>Financing Program Agreement</i> and ending on the first to occur of (i) December 31, 2018, (ii) the date when Program Funding is fully reserved for and MassCEC has notified Lender that the Program has closed, or (iii) such later date as Lender and MassCEC may mutually agree to in writing.</p>
Loan Agreement	<p>The loan agreement between the System Owner and the Lender that sets forth the terms and conditions of the Program Loan.</p>
Loan Close Date	<p>The date on which the Lender and System Owner close the Program Loan.</p>
Loan Loss Reserve (LLR)	<p>The Loan Loss Reserve (LLR) shall be the amount MassCEC will set aside in the Reserve Account for the benefit of each Lender to cover Eligible Losses on Program Loans based on the System Owner’s qualifying FICO scores (as set forth under the Credit Score Categories in Section 2-entitled Loan Definitions of this Program Manual) and governed by the <i>Financing Program Agreement</i> (Attachment A) and the Loan Loss Reserve Procedure attached to the <i>Financing Program Agreement</i> as Exhibit B. MassCEC will conditionally reserve an amount for the LLR at the time the Loan Support Application is filed with a true-up and final allocation of the required reserve made by MassCEC upon MassCEC’s approval of the Loan Support Application.</p> <p>Loan Loss Reserved Funds: The funds reserved for Loan Losses in the Reserve Account.</p>
Maintenance Period	<p>The period of time that commences upon the later of (i) the Monthly or Annual Reporting due date associated with the last Program Loan, whereby the Reserve Account remains open or (ii) such later date as Lender and MassCEC may mutually agree to in writing.</p>
Program Loan	<p>The loan provided by the Lender to the System Owner receiving Program Loan Support under the Program.</p>
Program Loan Amount	<p>The dollar amount of the Program Loan to be provided by a Lender to the System Owner as indicated at the time of the filing of the Loan Support Application. The total Program Loan Amount cannot exceed the Anticipated Project Cost. A Lender may choose to adjust a Program Loan to meet the Final Project Cost (or percentage of that cost requested to be financed through a loan), but is not required to.</p>
Program Loan Principal	<p>The principal balance and amount borrowed by the System Owner from the Lender.</p>
Program Loan Support	<p>Loan support from MassCEC paid directly to the Lender under the Program in the form of, as applicable, an IRBD, IBLs, and Loan Loss Reserves (“LLR”).</p>
Reserve Account	<p>The Reserve Account shall be the account holding all Loan Loss Reserved Funds for the benefit of each and all Lenders and shall be governed and administered by the <i>Financing Program Agreement</i> (Attachment A) and the Loan Loss Reserve Procedure attached to the Financing Program Agreement as Exhibit B.</p> <p>Lender’s Reserve Account shall be designated in MassCEC’s accounting records as “Restricted Cash” or such similar term for the benefit of each Lender. Separate Reserve Accounts shall be established for the benefit of each participating Lender and all of the Reserve Accounts shall be designated as Restricted Cash on MassCEC’s books.</p>
System Owner Interest Rate	<p>The interest rate, if any, to be paid by the System Owner for Program Loans. The System Owner Interest Rate shall be calculated as the Gross Loan Rate minus the IRBD Rate unless the Gross Loan Rate minus the IRBD Rate is less than zero (0), in which case the System Owner Interest</p>

	Rates will be zero (0).
Wind-Down Period	The period of time between the date of termination notice provided pursuant to the terms of the particular Lender's <i>Financing Program Agreement (Attachment A)</i> and the effective date of such termination as specified in a notice from MassCEC to each participating Lender, provided in no event shall such wind-down period be less than the 30 day notice period as required.

PROCESS DEFINITIONS	
Application Portal	MassCEC's web-based solar PV project Technical Application intake and management system.
Loan Support Application	The application submitted by the Lender at the time of Program Loan closing. This application will reserve the Program Loan Support associated with a specific Program Loan. Lenders will search for a Qualified Project in the Application Portal, based on the Project ID, in order to submit the Loan Support Application. Once a Loan Support Application has been submitted into the Application Portal, it establishes the Loan Support request into a queue for review by MassCEC. The Lender must ensure that the Program Loan is closed with the System Owner within one business day of submitting the Loan Support Application to the Application Portal. Upon submission of this application, the Program Loan Support is conditionally reserved by MassCEC based on the request, pending MassCEC's approval of the Loan Support Application. If the Loan Support Application is approved, MassCEC will reserve the particular Program Loan Support for the Program Loan.
Loan Support Application Approval	Upon receipt of the required Loan information including submission of all relevant documentation, MassCEC will issue approve the Loan Support Application and will reserve the Program Loan Support associated with the Qualified Project.
Project Completion	When a Qualified Project that has been installed and interconnected to the utility's network consistent with all Loan Program requirements, including submission of all relevant documentation to MassCEC.
Project Completion Approval	Upon receipt and review of the required Project Completion information, MassCEC will issue a Project Completion Approval indicating the confirmed final project specifications and Program Loan Support to be remitted in the next monthly payment.
Project Identification (ID)	Each Qualified Project will be provided with a unique project identification number that will be utilized by the Solar Installer and Lender to submit the required documentation for the Project and corresponding Program Loan. The Project ID will be necessary for the Lender when submitting a Loan Support Application and by the Solar Installer at the Project Completion phase.
Queue	The reservation in the Application Portal of the Loan Support Application, associated with an applicable Program Loan Support for a Program Loan, for the benefit of a Lender.
Technical Application	The application submitted by the Solar Installer on behalf of the System Owner into MassCEC's Application Portal, which will determine whether the solar PV project is qualified for the Program. The Solar Installer and the System Owner must agree to the terms and conditions of the Program in order to submit a Technical Application.
Technical Confirmation	Upon receipt of all the required information, and agreement by the Installer and System Owner to the terms and conditions of the Program, MassCEC will issue a Technical Confirmation, which will indicate a unique ID number. Depending on the Technical Application, a Technical Confirmation will either be automatically generated or will require additional documentation submitted by the Solar Installer. The Technical Application may require more detailed review by MassCEC before a Technical Confirmation is provided. The Technical Confirmation and the unique project identification number MUST be provided to a participating Lender when applying for a Program Loan.

3. ELIGIBILITY

Set forth below is detailed information on Program eligibility for System Owners, Solar Installers, and Lenders.

System Owner Eligibility Requirements

Eligible System Owners must be (i) Massachusetts residential property owners or residents, and (ii) intend to finance the purchase of a solar PV project on their property or a share in a CSS project. All System Owners must be charged under a residential rate classification by their local utility. The solar PV project must be grid-tied within a Massachusetts electric distribution company, which includes investor owned utilities and municipal light plant territories in which a municipal department is responsible for the transmission and supply of electricity to customers for that respective municipality.

System Owners are not eligible to receive financing for projects that previously received rebates through either the MassCEC Commonwealth Solar II rebate program or a rebate through the Solarize Mass program (and more particularly through the: (i) 2011 program in the following jurisdictions: Harvard, Hatfield, Scituate, Winchester; or (ii) 2012 program in the following jurisdictions: Acton, Arlington, Boston, Hopkinton, Melrose, Mendon, Millbury, Sutton, Montague, Newburyport, Palmer, Pittsfield, Lenox, Shirley, Wayland, Lincoln, Sudbury; or (iii) 2013 Round 1 program in the following jurisdictions: Bourne, Brookline, Carlisle, Chelmsford, Lee, Medford, Medway, Newton, Northampton, Williamstown; or (iv) 2013 Round 2 program in the following jurisdictions: Adams, Amherst, Andover, Great Barrington, Egremont, Lexington, Bedford, Needham, Salem, Swampscott, Watertown, Wellfleet, Williamsburg, Whately, Chesterfield).

System Owners are eligible to apply for financing for a new project or an addition to an existing project that is properly metered to receive Solar Renewable Energy Certificates (“SREC’s”) (see Add-On Projects section below for more information). System Owners participating in Solarize Mass that have not received or been approved for a rebate are eligible to participate in the Program. Third party ownership projects (both Leases and Power Purchase Agreements) will not be eligible to participate. The System Owner is only eligible for one project per electric meter at any one time. Any previous projects must have reached completed status with respect to the Program.

Energy Audit Requirement

Energy efficiency is an important method to reduce energy consumption and increase the financial benefit of installing solar PV. In order to participate in the Program, System Owners who live in an investor owned utility territory must demonstrate by self-attestation that they have had a Mass Save energy audit in the past 5 years, or have one scheduled. For more information on Mass Save go to: <http://www.masssave.com/>. Customers living in a municipal light plant territory must demonstrate by self-attestation that they have had a residential energy audit in the past 5 years, or have one scheduled. For more information on residential energy audits, contact your local municipal light plant.

Other System Owner Eligibility Requirements

In addition to satisfying the Energy Audit Requirement, the System Owner must also meet the following requirements in order to participate in the Program:

1) Satisfy Underwriting criteria for a consumer loan.

The System Owner must satisfy the Lender’s underwriting criteria in order for the Lender to approve and for the System Owner to be eligible to receive any Program Loan Support.

2) If a System Owner is applying to the Lender for a loan for multiple Qualified Projects, they may be eligible to receive an IRBD on each Program Loan, but a System Owner is not eligible to receive IBLS for more than one Qualified Project.

3) The System Owner of the Qualified Project must be the consumer of the electricity generated by the proposed project, except as set forth below:

- A building owner can be the System Owner of the Qualified Project where a tenant is responsible for the electricity bill.
- CSS projects providing Member-System Owners with net metering credits or that compensate Member-System Owners by other methods approved by the Program (see section below on CSS projects).

- 4) For Qualified Projects attached to a building or structure, the System Owner must be the sole owner of that building or structure, or be authorized by the owner(s) to make the necessary modifications to the building to install the proposed project.

Eligible Properties

Property Requirements

In order to be eligible under the Program, the property must have a residential utility rate code for the relevant electricity account and the facility must have a residential end-use. If the facility has a residential end use, but the residential rate code is not available, a residential property designation filed in the local assessor's office along with an explanation for the reason there is no residential rate code for the property will also be sufficient.

Eligible Properties include single-family homes, individual condominiums, and townhomes with the homeowner association's written approval. Duplexes and multi-family buildings of 2-3 units (if the same individual(s) owns all the units and occupies at least one of them) are also eligible.

Residential solar PV projects that fall into the following categories will be considered "commercial" and are not eligible to participate in the Program:

- Residential property where the System Owner will lease the solar PV project or purchase electricity from a solar third-party agent or company.
- Systems connecting to the common areas (stairwells, hallways, exterior lighting, clubhouses, etc.) of residential multi-family buildings or complexes (4 or more units) will be considered commercial unless established as a CSS project.
- Residential multi-family buildings with four or more residential units sharing the same utility electricity account unless established as a CSS project.
- Residential Property with a corporate or Limited Liability Company ("LLC") structure unless established as a CSS project or the LLC structure is purely for purposes of owning a Residential Property and the members of the LLC live in the Residential Property or the Lender must have sufficient comfort that the Property is a Residential Property and has no business purpose.

MassCEC, at its sole discretion, will determine whether a property meets the Residential Property designation for purposes of participating in the Program.

Project Location

The Qualified Project must be located in Massachusetts within the service territory of an electric provider. The building or facility utilizing the power generated by the Qualified Project must be grid-connected to a Massachusetts electric distribution company, including Massachusetts investor owned utilities such as Eversource (formerly NStar and WMECO), National Grid, Unitil, and municipal light plant territories, where a municipal department is responsible for the transmission and supply of electricity to customers for that respective municipality.

Property Held in Trust or as an LLC

In instances where the owner of a Residential Property is held in the name of a trust or an LLC, these properties are eligible for the Program as long as they are residential properties and the System Owner is eligible for a consumer loan. With respect to the LLC, the members of the LLC must live in the Residential Property or the Lender must have sufficient comfort that the Property is a Residential Property and has no business purpose.

Condominium or Townhouse Properties

For Qualified Projects in which there are multiple owners of a building or structure, the System Owner pursuing an individually owned system must be able to provide proof that they are authorized by the owner(s) to make the necessary modifications to the building to install the proposed project. At the time of Technical Application, the System Owner will attest that they have taken this step prior to application. MassCEC may also elect to request a letter of support from the trustees of a condominium association, or

other applicable documentation. An alternative ownership structure for condominium or townhouse residents may be participation in a CSS project as described below.

CSS Projects

CSS Projects as defined in the CSS Projects section below are also eligible.

Solar Installer Eligibility

The Solar Installer must be a professional contractor licensed to conduct business in Massachusetts. Any electrical work performed on the installation must be conducted by an electrician holding a valid and current license in Massachusetts. Homeowners or “do-it-yourselfers” are not eligible to be a Solar Installer as part of the Program unless they are Massachusetts licensed electricians completing an installation on their own homes. MassCEC reserves the right to determine Solar Installer eligibility to participate in the Program.

It is recommended, but not required, that Solar Installers and/or Subcontractors obtain North American Board of Certified Energy Practitioners (“NABCEP”) PV Installer certification, if they have not already done so. For more information: <http://www.nabcep.org/>

Entities providing services directly to MassCEC through a Services Agreement under the Mass Solar Loan Program are not eligible to participate in the Program as a Solar Installer.

The Solar Installer is responsible for submitting the Technical Application and Project Completion for the System Owner’s Qualified Project. The Solar Installer is the primary entity responsible for the project installation, and may or may not have a Subcontractor for all or part of the installation. The installation must be completed within one year of the Lender Support Application Approval.

For purposes of the Program, a Solar Installer will be considered to have either Expedited Solar Installer status or Non-Expedited Solar Installer status as each is described below.

Expedited Status

Solar Installers who have successfully completed the *Crawl Before You Walk Policy* (Attachment D) may participate in the Program as Expedited Solar Installers. Expedited Solar Installers will be granted password access to the online Application Portal, which will allow faster processing of Technical Applications and Project Completion documentation. The Application Portal will manage the intake process for Expedited Solar Installers, as electronically submitted Technical Applications are given a unique Project ID upon submission.

Invitation to be an Expedited Solar Installer is solely at the discretion of MassCEC and will be based upon a demonstrated ability to submit accurate and high-quality paperwork and successfully complete projects. To maintain the Expedited Solar Installer status, firms will be expected to maintain high-quality paperwork, and to abide by all code and Program standards.

Expedited Solar Installers who participated in the Commonwealth Solar II rebate program will be automatically eligible to participate in the Program, and will not be required to complete the *Crawl Before You Walk Policy* (Attachment D). All previously approved Expedited Solar Installers will, however, need to request Expedited Status under the Program in order to receive password access to the online Application Portal and be able to process Qualified Projects.

The designation of the Expedited Solar Installer status does not constitute an endorsement or representation by MassCEC as to the competency, efficiency or qualifications of any person or entity receiving such status.

MassCEC reserves the right to change a Solar Installer’s status from an Expedited Solar Installer to a Non-Expedited Solar Installer if MassCEC determines, in its sole discretion, that the Solar Installer does not satisfy the standards required under the Expedited Status.

Maintaining Expedited Status

Expedited Solar Installers shall be subject to random inspections at any time for any reason at MassCEC’s discretion. Expedited Solar Installers in violation of Program terms and conditions, failing to satisfactorily install Qualified Projects or in any other way proving problematic for the Program may lose their Expedited Solar Installer status. If non-compliance issues continue, the Solar Installer may also be removed from participating in the Program at the discretion of MassCEC.

Non-Expedited Status

First-time Solar Installers admitted to the Program are automatically considered to have Non-Expedited Solar Installer status. Non-Expedited Solar Installers are subject to MassCEC's *Crawl Before You Walk Policy* (Attachment D). All Non-Expedited Solar Installers are only eligible to initially submit **one** Technical Application before completion of the *Crawl Before you Walk Policy (Attachment D)*. Upon completion of the *Crawl Before You Walk Policy (Attachment D)*, the Non-Expedited Solar Installer will be eligible for Expedited Solar Installer status, and will subsequently be allowed to submit additional Qualified Projects in the Application Portal.

Solar Installers interested in applying under the Non-Expedited Solar Installer Status should contact MassCEC at solarloan@masscec.com prior to submitting a Technical Application.

The MassCEC selects specific completed projects for Quality Assurance (QA) field inspection following a sampling protocol. Inspection frequency is primarily based on the status of the Solar Installer and Subcontractor within the Program and results of any previous inspections. MassCEC intends to base inspection frequency on the Subcontractor of record; specifically the personnel directly responsible for system installation and workmanship. Non-expedited installers will initially be subjected to up to 100% inspection rate until proving that system installations are following program guidelines, and meeting technical requirements.

The purpose of the QA Field Inspection is to provide MassCEC with an opportunity to evaluate the accuracy of design paperwork and to verify that the PV system was installed according to all Mass Solar Loan Program requirements.

MassCEC may select any completed project at any point in the future for field inspection based upon customer complaints, warranty related issues or a review of the work done by a Solar Installer or Subcontractor under review for workmanship issues. These inspections can be selected regardless of expedited, or on-expedited, installer status.

Lender Eligibility

All Lenders who have fully completed and executed a *Financing Program Agreement* (Attachment A) in a form acceptable to MassCEC which is signed and accepted by MassCEC are considered Lenders in the Program and are eligible to apply for Program Loan Support. The complete list of criteria for Lenders to participate in the Program is set forth above in Section 2, entitled "*Key Definitions – Program Participant Definitions*" of this Program Manual.

Qualified Project Eligibility

Qualified Projects are located on an Eligible Property and shall meet all the Minimum Technical Requirements listed in Attachment C.

Project Cost

Qualified Projects must have a minimum project cost of \$3,000. The maximum project cost is \$60,000. The Project cost shall be the total system cost as listed in the executed Turnkey Contract. **Lenders are only required to offer Program Loans of up to \$35,000.** System Owners with proposed projects exceeding \$35,000 should consult with their Lender regarding how to finance project costs exceeding \$35,000.

Add-On Projects

Properties where an existing solar PV project received funding from a prior MassCEC incentive program are eligible to participate in the Mass Solar Loan Program for a new, separate Qualified Project (a so-called "Add-On" to the existing project).

If capacity is being added to a system that is generating SRECs under the SREC-I program, the additional capacity must be separately metered in order to generate SRECs under the SREC-II program. Failure to do so may make the system ineligible to participate in the SREC-II program.

An Add-On project will not be a Qualified Project under the following circumstances:

- If the System Owner has been approved for a separate Program Loan for the same Qualified Project (defined as all capacity being tied to a single electric meter at one time) and a Loan Support Application has been approved. If the original approved Program Loan for the Qualified Project does not proceed, MassCEC must be notified by both the Lender and System Owner. Upon clarification that Program Loan Support has not been disbursed, the original Loan Support Application will be forfeited and a subsequent Program Loan will be allowed for the project.

It is highly recommended that System Owners interested in Add-On Projects contact MassCEC at solarloan@masscec.com prior to submitting a Technical Application.

Projects That Received Prior Interconnection or Incentives

Solar PV projects that have already interconnected may not participate in the Program. Solar PV projects that are not yet connected but have been approved for a rebate through the MassCEC Commonwealth Solar II program or a rebate through the Solarize Mass program are also not eligible to participate under the Mass Solar Loan Program.

Properties where a solar PV project received a rebate from a MassCEC incentive program are eligible to participate in the Program for a new, separate project. See 'Add On' section above.

System Owners that are considering replacing an existing solar PV system that received funding from a prior MassCEC incentive program should review their original Participant's Agreement from that program to determine whether they would be in breach of their Terms and Conditions Agreement by removing the project before a specified period of time.

MassCEC reserves the right to determine if a project is eligible to apply as part of the Program and, if so, under what conditions.

Behind the Meter Requirement

The Qualified Project must be a "behind-the-meter" project. This means that the interconnection of the solar PV installation must be behind the utility billing meter. Projects may be eligible to net meter in accordance with the Massachusetts net metering regulations outlined in 220 CMR 18.00. If the project is a CSS project, the Member-System Owner must be the end recipient of the net metering credits. In addition, CSS projects must be behind a dedicated electric meter.

Due to a Massachusetts Department of Public Utility (DPU) provision, only one utility net meter may be allowed per parcel of land. In this instance, a site with multiple potential solar sites on a single parcel of land may only be eligible to request a single net meter for the entire parcel. For projects where this situation is in effect:

- Electricity from a solar PV project must be generated on the same parcel of land as the System Owner property.
- Electricity from a solar PV project must either tie into a dedicated meter, or into a common meter that is shared by all System Owner properties that are applying as part of the Program. Excess electricity generation must be allocated to each System Owner property in the appropriate net metering allocation.
- A copy of the Turnkey Contract and utility form Schedule Z must be submitted, demonstrating appropriate net metering allocation.
- All portions of the project must be tied to a System Owner utility account who is participating as part of the Program.

Interconnection Timing

The Qualified Project shall not be approved for interconnection by the utility prior to a Program Loan being closed by Lender and the Lender's Loan Support Application being approved by MassCEC. Any projects that receive authority to interconnect prior to this status will NOT be deemed to be a Qualified Project under the Program.

Participation in SREC-II or Subsequent Solar Incentive Program

Projects must demonstrate that they are Renewal Portfolio Standard ("RPS") Class I eligible and that they qualify under the Massachusetts RPS Solar Carve-Out II Program (SREC-II Program) or any successor program. Projects will have to attest at Project Completion that they have or plan to submit an application for the SREC-II program or any successor program. Additional details on SRECs and the RPS Solar Carve-Out are found on the DOER website at:

<http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/solar/rps-solar-carve-out-2/>.

CSS Projects

Residential electricity end-users participating in CSS Projects will be eligible to apply to the Program. To be eligible for the Program, the Member-System Owner's portion of the CSS project will be capped at 25 kW. For projects larger than 100 kW DC, the definition of CSS Generation Unit as contained in the RPS Class I regulation shall determine eligibility as a CSS Project under the Program. For projects of 100 kW DC or less, all participants must receive net metering credits or electricity from the project in amounts of 25 kW DC or less.

Interested System Owners or Solar Installers are required to contact MassCEC to discuss a potential CSS Project in advance of submitting Technical Applications to the Program.

NOTE: Technical Applications must be submitted in the Application Portal prior to the installation of the CSS Project.

Minimum requirements to qualify for a CSS project include, but are not limited to, the following:

- Participants must demonstrate a direct ownership stake in a solar project with a net metering off-take of 25 kW or less
- Participants must demonstrate a direct ownership in the CSS project through an LLC, cooperative, condo association, or other collaboration subject to MassCEC approval
- Technical specifications for ground mounted CSS Projects will be determined on a case-by-case basis and will be based on industry-standard best practices. Roof-mounted CSS Projects must meet Mass Solar Loan program technical eligibility criteria found in Attachment C
- The Lender participating in the CSS project must be qualified under the Program
- The project CSS participant need not be a homeowner, but must meet Lender underwriting criteria

Additional requirements may apply. MassCEC retains the sole discretion to determine whether threshold requirements are met and may require additional information.

Exception for Condominium Associations: The net metering requirement will be deemed to be met for a CSS Project at a condominium if the participating Member-System Owner associated with a condominium association receives the financial benefit (in some monetary form) equivalent to their ownership stake. The solar PV system must be located at the condominium site location. The project must be behind a dedicated meter.

Resources for Condominium Associations: The DOER "A Solar Guide for Condominium Owners and Associations in Massachusetts" is a useful resource for condominium associations, individual condominium unit owners and Solar Installers looking to work with these potential Member-System Owners in pursuing a CSS Project. This resource can be found on the Mass Solar Loan Program website at www.masssolarloan.com.

Loan Requirements

Lenders will be required to perform their own underwriting to determine System Owner eligibility for a Program Loan. Eligible Program Loans must meet the following requirements:

- Lender must offer a minimum Program Loan amount of \$3,000 and a maximum Program Loan amount of at least \$35,000, with the specific maximum amount to be determined by Lender in Lender's discretion.
- Loans may be either secured or unsecured.
- Lender may not offer a Program Loan greater than \$60,000, as this is the maximum eligible Project Cost under the Program.
- A Program Loan term of 120 months must be offered. Lender may offer Program Loans with shorter or longer terms, but one Program Loan with a term of 120 months must be offered by the Lender.
- The Gross Loan Interest Rate shall not exceed the Wall Street Journal ("WSJ") Prime + 2.75%. Lenders may offer rates below this maximum.
- Program Loans must be a fixed rate loan and shall be subject to repayment without premium or penalty.
- Each Program Loan shall be without recourse to any other credit enhancement, whether from a government, utility, or any other entity.
- Information provided to MassCEC with respect to a System Owner's FICO scores for each applicant, and whether the Lender granted a Program Loan to the System Owner shall be submitted to MassCEC on an anonymous basis for the purposes of compiling Program Loan data.

- Each System Owner must satisfy the Lender's underwriting criteria to qualify for a Program Loan.
- A Program Loan re-amortization, or other mechanism approved by MassCEC under the Program to reduce loan payments due to submission of a federal tax credit or other principal pay-down shall be available to the System Owner at no cost to System Owner on a one-time basis within the first 18 months of the Program Loan term.
- 35% of the Program Loan shall be disbursed upon the Program Loan closing between the System Owner and Lender. Until Project Completion is reached, the System Owner will only pay the Lender for the interest charged on the Program Loan amount disbursed to date. Upon Project Completion Approval, the Lender will disburse the remaining 65% of the Program Loan. All disbursements shall be paid via a two-party check from the Lender to the System Owner and Solar Installer.
- Program Loan closing costs are optional, but must not exceed \$500 per loan.

Optional Program Loan parameters include:

- The ability for a System Owner to transfer a Program Loan is at the discretion of Lender, if the transferee/new System Owner meets the Lender's credit requirements and the Lender consents.

4. PROGRAM LOAN SUPPORT

Lenders will use the Application Portal to reserve funding for Program Loan Support for each Program Loan. The following terms and conditions apply to Lenders for reserving Program Loan Support.

Interest Rate Buy Down (IRBD)

MassCEC will provide IRBD Payments to the Lender for Program Loans as described below and as detailed in the *Financing Program Agreement* (Attachment A). The IRBD Payments will be paid directly to the Lender in the First IRBD Disbursement after the initial 35% loan disbursement occurs and a Monthly Report has been submitted to MassCEC and in the Second IRBD Disbursement after the Project Completion Approval occurs and a Monthly Report has been submitted to MassCEC. The IRBD Payments will reduce the amount of interest that the System Owner is responsible for paying from the Gross Loan Interest Rate to the System Owner Interest Rate by an amount equivalent to the currently applicable IRBD Rate. The IRBD has the following parameters and requirements:

- 1) The Gross Loan Interest Rate cannot exceed WSJ Prime plus 2.75%.
- 2) The initial IRBD Rate will be three percent (3%). The System Owner Interest Rate shall be calculated as the Gross Loan Rate minus the IRBD Rate.
- 3) In no case shall the System Owner Interest Rate be less than zero percent (0%). In cases where the reduction of the Gross Loan Interest Rate by the IRBD Rate is less than zero percent (0%), the Customer Interest Rates shall be zero percent (0%).
- 4) MassCEC will set aside a total of Five Million Dollars (\$5,000,000) for IRBD support available to all participating Lenders on a first-come first-serve basis at the three percent IRBD Rate.
- 5) After the initial \$5,000,000 available for IRBD support is allocated and fully reserved, MassCEC reserves the right to provide additional IRBD support at a lower IRBD Rate to extend the life of the Program, and to smoothly transition the Program Loan market to phase out without MassCEC or other state support by the close of the Program.
- 6) The First IRBD Disbursement will be calculated as the difference between (i) the net present value of the expected payments at the Gross Loan Interest Rate on the disbursed 35% of the Program Loan over 12 months and (ii) the net present value of the expected payments at the System Owner Interest Rate on the disbursed 35% of the loan over 12 months. The Gross Loan Interest Rate will be used as the discounting factor for the net present value calculation.
- 7) The Second IRBD Disbursement will be calculated as the difference between (i) the net present value of the expected payments at the Gross Loan Interest Rate on the lesser of the Loan Amount or the Total Project Cost over the Loan Term and (ii) the net present value of the expected payments at the System Owner Interest Rate on the lesser of the Loan Amount or the Total Project Cost over the Loan Term. The Gross Loan Interest Rate will be used as the discounting factor for the net present value calculation. In the event that the actual interest only period described above was less than 12 months, the second IRBD disbursement will be reduced to account for the excess payment received by the Lender as part of the first IRBD disbursement.
- 8) The IRBD Reserved Funds will be based on the Program Loan Amount (before IBLs is applied, if applicable) and an assumed 12-month interest only period, but total IRBD Payments will be based on the lesser of the Program Loan Amount and Final

Project Cost as well as the actual interest only period. At no point can the IRBD Payment to the Lender exceed the IRBD Reserved Funds.

Funding and Process

MassCEC shall initially designate \$9 Million for IRBD support (of which a minimum of \$5 Million will be made available at the 3% IRBD Rate). The IRBD Funds will be available to Lenders for Program Loans until the funds have been fully expended. MassCEC may change the amount of available funding for IRBD support due to loan volume, available funds, or other factors in its sole discretion.

Income Based Loan Support

IBLS is available to eligible System Owners as an additional financial incentive. An IBLS Payment is a specified percentage equal to the lesser of (i) the Program Loan Amount or (ii) Final Project Cost, and shall be determined based on the System Owner’s income bracket. These brackets are divided between Category 1 and Category 2 for the Program (see table below).

Eligibility for IBLS is based on total household income, as determined by the System Owner’s federal income tax filing for the most recent tax return available, provided such tax return must be for a tax year within two years of the date of the Loan Application (Tax Return Form 1040 line 22) with the Internal Revenue Service (IRS). IBLS will be available to each household on a one-time basis even if the System Owner owns multiple properties or relocates to a new property. For example, if a System Owner owns two homes, IBLS is available to the System Owner for one Loan Application only and shall apply to only one property.

IBLS CATEGORIES

Category	Income Bracket (% of MA Median Household Income)	Current Household Income Criteria*	IBLS Incentive Rate (% of Program Loan or System Cost)†
IBLS Category 1	≤ 100%	≤ \$66,866	30%
IBLS Category 2	> 100% and ≤ 120%	> \$66,866 and ≤ \$80,240	20%

*Based on US Census Bureau 5-year estimates (2009-2013). Figures may be updated as new census data becomes available.

† The IBLS incentive structure may be subject to change prior to the launch of the Mass Solar Loan program.

System Owner Approval

Approval of a System Owner’s eligibility for IBLS will be determined at the Technical Application stage by MassCEC’s income verification consultant. A letter will be issued to the System Owner, and the Technical Confirmation will include information demonstrating whether or not that the System Owner qualifies for IBLS, and if so, at what level. Lenders should use this confirmation to determine whether to apply for IBLS Program Loan Support payments.

Funding and Process

IBLS funds will be paid to lenders after the Project Completion Approval occurs and a Monthly Report has been submitted to MassCEC. Lenders receiving IBLS funds on behalf of a System Owner shall use IBLS funds to reduce the total Program Loan Principal of the System Owner’s Program Loan.

MassCEC has initially designated **Ten Million Dollars (\$10,000,000)** to provide IBLS to Program Loans. The IBLS funds will be available to Lenders for Program Loans to qualified System Owners, until the IBLS funds have been fully reserved for Qualified Projects. MassCEC reserves the right to change the funding available for IBLS due to loan volume, available funds, or other factors.

IBLS Reserved Funds will be based on the Program Loan Amount, but IBLS Payment will be based on either the Final Project Cost or Program Loan Amount as determined at Project Completion, whichever is lower. At no point can the IBLS Payment to the Lender exceed the IBLS Reserved Funds for a Program Loan. A Lender may choose to adjust a Program Loan to meet the Final Project Cost (or percentage of that cost requested to be financed through a loan), but is not required to. If the Program Loan is not adjusted to account for the Final Project Cost if lower than the Anticipated Project Cost, Solar Installers/System Owners should not use the loan

principal for anything other than Eligible Project Costs. Program Loan Principal disbursed that is not used for Eligible Project Costs should be paid back to the Lender.

Loan Loss Reserve

MassCEC will designate a cash reserve for each participating Lender based on the Class of Program Loans closed as indicated below:

Loan Class	% of Program Loan Allocated to Loan Loss Reserve	Recovery of Outstanding Principal if Program Loan Defaults*
A	0%	0%
B	10%	80%
C	20%	90%

***Note, recovery of outstanding principal from a Program Loan default will only occur if there is adequate funding available in the Lender’s Loan Loss Reserve account.**

Upon each Lender’s first Program Loan closure and submittal of Loan Support Application information, MassCEC will set Lender’s Reserve Account at \$50,000. During the first year of participation, each Lender’s specific Loan Loss Reserve allocation shall not be adjusted below the beginning balance. After the first year, each Lender’s Loan Loss Reserve allocations may be adjusted at MassCEC’s sole discretion based on Program Loan recovery. If Lender has not issued any Qualified Project Program Loans, Lender’s Reserve Account balance may be reduced to zero. The Loan Loss Reserve Account shall be governed by the *Financing Program Agreement* (Attachment A) and the Loan Loss Reserve Procedure attached to the *Financing Program Agreement* as Exhibit B.

5. PROGRAM PROCESS FLOW

Entity	Mass Solar Loan Detailed Process Flow
System Owner	<p>Step 1: Interested System Owner identifies a Solar Installer</p> <p>System Owners should first become familiar with solar electricity, and then find an experienced Solar Installer to assist with the development of their Project. System Owners can find relevant information about Solar Installers participating in the Program at www.masssolarloan.com. If the System Owner is interested in proceeding with a project, and is looking for a low interest loan to finance the project, the Solar Installer will guide them through the Program process.</p>
System Owner and Installer	<p>Step 2: Determine project size, potential costs and if System Owner might qualify for Income Based Loan Support (IBLS)</p> <p>The Solar Installer should help the System Owner determine whether their site is feasible for a solar PV project, the Anticipated Project Cost, and if they are eligible to apply for IBLS under the Program. If the System Owner might qualify for IBLS, the Solar Installer should assist the System Owner in understanding the IBLS Categories and whether the System Owner will qualify.</p>
Installer	<p>Step 3: Solar Installer submits a Technical Application</p> <p>The Solar Installer is responsible for submitting a Technical Application (on behalf of themselves and the System Owner) into MassCEC's Application Portal for a proposed project. The System Owner shall assist the Solar Installer by providing support materials, reviewing and approving the Technical Application package, and signing the Technical Application. An executed Turnkey Contract must be in place between the Solar Installer and the System Owner before a Technical Application is submitted. The executed Turnkey Contract must include a clause clarifying that the Turnkey Installation Contract and subsequent work shall be contingent on Program Loan approval.</p> <p>Information included in the Technical Application shall include, but not be limited to, System Owner information, project location information, project design, equipment information, Anticipated Project Capacity, Anticipated Project Cost, a production estimate, and a shading analysis. The System Owner and the Solar Installer will sign and agree to the <i>Participant's Agreement</i> (Attachment E), including acknowledgement that submitting a Technical Application (and receiving a subsequent confirmation) will not guarantee receipt of a loan or subsequent loan support through the Program. A separate application must be submitted for each project.</p> <p>Once a Technical Application is submitted, the Application Portal will assign the application with a unique Project ID number.</p> <p>If the System Owner is interested in IBLS, this should be noted in the Technical Application and the Solar Installer should assist the System Owner in completing the Income Verification Application with MassCEC's income verification consultant by following the directions specified in the Technical Application. Applying with the income verification consultant involves the System Owner submitting a separate application. Technical Applications for System Owners applying for IBLS will be placed into a queue pending IBLS eligibility confirmation from the income verification consultant.</p> <p>For Solar Installers new to the Program, see more information on Non-Expedited Installer Status and the <i>Crawl Before You Walk Process</i> in Attachment D.</p> <p>MassCEC will forward all Loan Program communications electronically. It is the responsibility of the Solar Installer to enter an accurate email address for the System Owner into the Technical Application. If the System Owner does not have an email address, it is the sole responsibility of the Solar Installer to ensure System Owner receives all application-related communications, including but not limited to the Technical Application Confirmation and Project Completion Form.</p>

MassCEC	<p>Step 4: MassCEC Reviews and/or Spot Checks Technical Applications</p> <p>If a Technical Application is submitted and the project meets (based on the information provided) all of the Loan Program requirements, MassCEC will issue an automatic Technical Confirmation to the System Owner. The Technical Confirmation will be provided as an email, which the System Owner can provide to a Lender and apply for a loan.</p> <p>There are exceptions to the automatic confirmation process, and situations in which MassCEC will manually review a Technical Application before providing the Technical Confirmation:</p> <ol style="list-style-type: none"> 1) If project location does not have a residential utility rate code and instead is demonstrating residential status through local property assessment listing. 2) If the Technical Application has been randomly selected for manual review. 3) If the System Owner is applying for a loan for a CSS project or is part of a multi-unit building. 4) If the Technical Application is submitted with a wet signature (the E-signature option was not utilized). <p>Manual review of a Technical Application may take up to fourteen (14) business days to complete, if all information and documentation provided with the Technical Application is complete.</p> <p>MassCEC reserves the right to review any Technical Application for signatures, completeness and accuracy even after the Technical Confirmation has been issued. It is the responsibility of the Solar Installer to correct all errors or missing information discovered during this review.</p>
System Owner	<p>Step 5: System Owner takes Technical Application Confirmation to a Lender</p> <p>Once a System Owner has received a Technical Confirmation, they may apply for a loan with a Lender. The System Owner will be required to provide the Lender with a copy of the Technical Confirmation, along with an IBLS confirmation letter if applicable, prior to closing the loan.</p> <p>The System Owner should apply for a loan amount of less than or equal value to the Anticipated Project Cost as detailed in the Technical Application. If the project capacity or project cost changed after submittal of the Technical Application, the System Owner (and their Solar Installer) should contact MassCEC prior to closing a loan.</p> <p>System Owner may reach out to Lenders prior to signing a contract and submitting a Technical Application, however System Owner and the Lender cannot close a Program Loan prior to receiving a Technical Application Confirmation that indicates the project capacity and cost.</p> <p>Participating Lenders can be found at www.MassSolarLoan.com.</p>
Lender	<p>Step 6: Lender Undergoes Normal Underwriting Process to Review System Owner Qualification</p> <p>When a System Owner applies for a loan with a Lender, the Lender will confirm the project received a Technical Confirmation, and if the System Owner was approved to qualify for IBLS by the income verification consultant. The Lender will perform its own underwriting process on the System Owner’s loan request and determine whether the System Owner qualifies for a loan. Depending on the FICO score of the System Owner, the loan may also qualify for LLR Support for the Lender. If the System Owner qualifies for the loan, a closing will be scheduled by the Lender. Notification must be given to the System Owner regarding Program Loan approval within ten (10) business days. The Program Loan terms must conform to Program requirements, as set forth above in Section 3 entitled Eligibility – Loan Requirements.</p> <p>Once a Loan has been executed, the Lender must initially remit 35% of the Program Loan Principal in the form of a two-party check addressed to the System Owner and the Solar Installer. The remaining 65% of the Program Loan Principal will be disbursed at Project Completion.</p> <p>All parties should be aware that the amount associated with the LLR Reserved Funds (if applicable), IBLS Reserved Funds,</p>

	<p>and IRBD Reserved Funds are determined by the Program Loan Amount (before IBLs is applied, if applicable). After Project Completion, the amount allocated for the LLR Reserve is the same as the LLR Reserved Funds, but the IRBD Payment and IBLs Payment are based on the lesser of the Program Loan Amount or Final Project Cost. At no point can the amount allocated for the LLR Reserve, IRBD Payment, or IBLs Payment exceed the original funding that was reserved.</p>
Lender	<p>Step 7: Upon Closing of the Loan, Lender will Input Loan Information into the Application Portal and Request IRBD for Initial Disbursement</p> <p>In order to reserve Program Loan Support under the Program, the Lender must enter the Program Loan information into the Application Portal, and ensure that the Program Loan has been closed by Lender with the System Owner within one business day of submitting the Loan Support Application. This will ensure that MassCEC reserves the appropriate IRBD, LLR (if applicable), and IBLs (if applicable) for the particular Program Loan and establishes the Program Loan Support into the Queue. The Queue is important, as there are limited funds available for the Program, and entering the information into the Queue reserves the funds for the benefit of the Lender with respect to the System Owner’s project. If the loan does not close within one business day of the Program Loan Support Application submittal, the Lender is required to notify MassCEC immediately so that the Program Loan Support funds may be released for future potential projects.</p> <p>When entering the Program Loan information, each Lender will be able to search in the Application Portal using the Project ID and other identifying information (such as System Owner name or project location) in order to ensure that the Program Loan information is associated with the correct Project. Lenders will be required to enter information including, but not limited to, System Owner, project location, project capacity, loan amount, Gross Loan Interest Rate, term of loan, credit score category, qualification for IBLs (if applicable), and qualification for the LLR (if applicable). The Application Portal will calculate the IRBD, IBLs (if applicable) and LLR (if applicable) to be reserved. Each Lender will only have access to the System Owner information of such Lender’s own customers/borrowers. No Lender will have access to a System Owner’s information that is a client of another Lender.</p> <p>After the Program Loan information has been entered into the Application Portal, the Lender must also include the Loan Application information in a Monthly Report, as detailed in the <i>Financing Program Agreement</i> (Attachment A).</p> <p>MassCEC will send a Loan Support Application Approval email notifying the System Owner and Solar Installer when a Lender has successfully entered the Program Loan information into the Application Portal and when the Loan Support Application has been approved.</p> <p>MassCEC will disburse the IRBD Payments to Lender in an amount equal to the twelve (12) month interest-only period for the initial 35% Loan disbursement. Lender must submit the value of this IRBD payment as part of its Monthly Report.</p> <p>Lender must submit the Monthly Report within ten (10) business days of the 1st of each month. If the Monthly Report is received in this timeframe, MassCEC shall remit Program Loan Support payments within twenty (20) business days of the 1st of each month for all Qualified Projects that have reached Project Completion Approval in the previous month.</p>
Installer	<p>Step 8: Solar Installer will Complete Project and Submit Project Completion Paperwork</p> <p>The System Owner and Solar Installer will have one year from the date of the Loan Support Application Approval email to complete the solar PV project and submit Project Completion paperwork to MassCEC. Project installation must meet all of the local, state, and national permitting and code requirements, along with the Program <i>Minimum Technical Requirements</i> (Attachment C). The Solar Installer will assist the System Owner in submitting the Statement of Qualification for the SREC II program.</p> <p>The Project Completion information and supporting documentation to be provided by the Solar Installer shall include:</p> <ol style="list-style-type: none"> 1) Final Project Cost 2) Final Project Capacity 3) Any changes in equipment

	<ol style="list-style-type: none"> 4) Date in Service 5) Initial Electric Meter Reading 6) Authorization to Interconnect from the Utility 7) Installation Photos 8) Shading Analysis (if requested at the Technical Application phase) 9) Attestation of submittal for Qualification of the SREC II or any subsequent program 10) Final Executed Turnkey Contract or Invoice for the project 11) Any additional document requested at the discretion of MassCEC <p>A System Owner and Solar Installer may request an extension to the one year deadline for reasonable delays in completing the project. MassCEC has sole discretion to approve such extensions.</p>
MassCEC	<p>Step 9: MassCEC will Review Project Completion Paperwork, Adjust Loan Support in Application Portal Accordingly, and Notify Lender</p> <p>MassCEC will review Project Completion paperwork and notify the Lender via email of any changes to Final Project Capacity or Final Project Cost, which may affect the amount of Loan Support applicable to the project. For example, if the Loan was based on the Anticipated Total Project Cost, and the cost decreases, the System Owner will only be eligible for an IRBD (and IBLs if applicable) on the Final Project Cost. In no situation will the IRBD or IBLs increase beyond the original amount reserved by MassCEC for IRBD or IBLs Payments.</p>
Lender	<p>Step 10: Lender Will Request Loan Support Disbursement</p> <p>After the Lender has been notified that MassCEC reviewed and approved Project Completion documents, the Lender will be eligible for disbursement of Program Loan Support payment in the following month, provided they submit the Monthly Report.</p> <p>Lender must submit the Monthly Report within ten (10) business days of the 1st of each month. If the Monthly Report is received in this timeframe, MassCEC shall remit Program Loan Support payments within twenty (20) business days of the 1st of each month for all Qualified Projects that have reached Project Completion Approval in the previous month.</p>
MassCEC	<p>Step 11: MassCEC Pays Loan Support Payment and Maintains Loan Loss Reserve</p> <p>MassCEC will pay all IRBD and IBLs (if applicable) Payments directly to Lender. Lenders receiving IBLs funds on behalf of a System Owner shall use IBLs funds to reduce the total Program Loan Principal of the System Owner’s Program Loan.</p>

6. TECHNICAL APPLICATION DETAIL

Application Process Detail

Expedited Solar Installers

Expedited Solar Installers will use the Application Portal to enter Technical Applications for projects with fully executed Turnkey Contracts. The Application Portal **will not** be used as a tracking database by Solar Installers for sales leads or for marketing purposes.

All required project information must be entered and all back-up documentation must be uploaded into the Application Portal prior to submitting the Technical Application. Contact information for any Subcontractors must be listed for a project

as part of the Technical Application. Once submitted, the Application will provide an automatically generated Project ID number which will determine the order received.

Expedited Solar Installers will maintain paper records of all application materials on file, and upon request by MassCEC will make copies available.

Non-Expedited Solar Installers

Non-Expedited Solar Installers will submit Technical Applications into the Application Portal, but will only be allowed to submit an application for one project, which application will be subject to a design review process with a third-party technical consultant. Non-Expedited Solar Installers should refer to the *Crawl Before you Walk Policy* (Attachment D).

A Technical Application must include a three-line electrical diagram, site plan, and PV production estimate and calculation, in addition to all of the standard technical requirements of the Program. MassCEC and/or any consultants may require additional technical details regarding compliance with the NEC and the *Minimum Technical Requirements* (Attachment C) prior to approving the submitted designs.

Contact information for any Subcontractors used by a Solar Installer must be listed for a project as part of the Technical Application, and Non-Expedited Solar Installers will maintain paper records of all application materials on file. All application materials shall be made available to MassCEC upon request by MassCEC.

Any subsequent applications received prior to completing the *Crawl Before You Walk Policy* (Attachment D) requirement will be rejected and removed from the Queue.

Complete Technical Applications

Technical Applications with all requested information, and for which all back-up documentation is received, will be deemed complete. Incomplete applications will be put on hold (or rejected) and will not receive Technical Confirmation.

Complete Applications for each project must include all of the following:

- Signed and completed Technical Application.** An application will not be accepted if signatures are missing. By signing the application, all parties agree to be bound by the terms and conditions of the Program as described in this Program Manual and the *Participant's Agreement* (Attachment E).
- Shading Analysis:** A copy of the shading analysis is required at the time of application to ensure the system will meet the 70% of optimal output requirement outlined in the Minimum Technical Requirements. Solmetric SunEye, Solar Pathfinder, Wiley ASSET software or other MassCEC approved shading analyses will be accepted.
- Aerial Site Photograph:** At least one (1) aerial image of the System Owner's property that will be the subject of the project from Microsoft Virtual Earth, Google Earth or other similar source must be provided. This aerial image must clearly identify the applicable building(s) or project site.
- System Owner/Member-System Owner Electric Bill:** Clearly displaying service delivery address, residential rate code, and meter number.
- Applications seeking IBLS must indicate this on the Technical Application, and ensure the Income Verification Application has been properly submitted with the income verification consultant.**
- Documentation related to projects on Condominiums or Townhomes at MassCEC's discretion.**
- Documentation related to CSS projects required at MassCEC's discretion.**

Complete applications for Non-Expedited Solar Installers **must also** include the following:

- Site plan** showing location of critical components, array orientation, and all major foliage/structures/landmarks in the vicinity of the project that may impact its performance. It is recommended, but not required, that the site plan be to scale and identify anything that may impact project performance.

- ❑ **Three-line electrical diagram** showing the configuration of all related equipment, current and potential circuits/ interconnects, and protection (e.g., disconnects/ control schemes). The diagram should show the production meter, wiring configuration of modules, wire/conduit used, disconnecting means (with ratings), grounding means (both project and equipment grounds), and means of interconnection between the project and the building electrical system. For projects connected to a building through an existing service panel, the three-line diagram should indicate the rating of the service panel busbar and main breaker. This diagram is also likely to be required by the local utility for purposes of interconnection.
- ❑ **PV production estimate calculation details.** *This is mandatory for all Non-Expedited solar projects.* Solmetric SunEye, Solar Pathfinder, Wiley ASSET software or other MassCEC approved shading analyses will be accepted.

Project Completion Process

Project Completion

MassCEC staff shall review each Project Completion Form for completeness and accuracy. It is the sole responsibility of the Solar Installer and the System Owner to ensure that the Project Completion documentation is complete and is properly submitted to MassCEC. MassCEC will process Project Completion documents in the order received.

1. Incomplete Project Completion Forms. Solar Installers that submit incomplete or inaccurate forms will be notified by e-mail. The form will not be approved, and the Lender will not be notified, until it has been completed to the satisfaction of MassCEC. Incomplete forms will not be returned to the Solar Installer, and the timeline for MassCEC's review and approval may be significantly delayed.
2. Complete Forms. MassCEC staff approves each Project Completion, notifies the Lender of completeness and any changes to the project capacity or cost. Upon Project Completion Approval, Lender is eligible for Loan Support Payment from MassCEC in the following month, pending submittal of the appropriate Monthly Report.

MassCEC reserves the right to conduct post-installation inspections of projects prior to approval for payments. The Program Loan Support payments are contingent on the as-built project complying with the Technical Confirmation and with the *Minimum Technical Requirements* (Attachment C). Any changes to the Qualified Project must be included in the Project Completion documentation. Furthermore, if the project fails to comply with the *Minimum Technical Requirements*, the Solar Installer will be responsible for ensuring that corrections are made. Failure to do so may result in the Solar Installers loss of Expedited status or removal from the Program.

7. ATTACHMENTS

Attachment A	Financing Program Agreement (for Lenders)
Attachment B	Program Loan Support Calculator
Attachment C	Minimum Technical Requirements
Attachment D	Crawl Before you Walk Policy
Attachment E	Participant's Agreement
Attachment F	Program Loan Support Examples

8. GENERAL MASS SOLAR LOAN CONDITIONS

Notice of Public Disclosure

General Statement

As a public entity, MassCEC is subject to Massachusetts' Public Records Law, codified at Chapter 66 of the Massachusetts General Laws. Thus, except for those documents exempted from disclosure, any document, material, data, or other information received by the MassCEC from a System Owner or Solar Installer or any other third party is a public record subject to disclosure. Materials that fall under certain categories, however, may be exempt from public disclosure under a statutory or common law exemption, including the limited exemption at Chapter 23J, Section 2(k) of the Massachusetts General Laws regarding confidential information submitted to MassCEC by any of the foregoing parties for any form of assistance. Specifically, materials that fall under one of the following categories may be determined to be not public records and thus not subject to disclosure:

- Information, documents, or data that consist of trade secrets;
- Information, documents, or data that consist of commercial or financial information regarding the operation of any business conducted by the applicant; and
- Information, documents, or data regarding the System Owner's, Solar Installer or any other person or entity's competitive position in a particular field of endeavor.

Waiver Authority

MassCEC reserves the right, in its sole discretion, to waive minor irregularities in submittal requirements, to request modifications of the Technical Application or a Loan Support Application, to accept or reject any or all Technical Application or a Loan Support Application received, and/or to cancel all or part of Mass Solar Loan Program at any time prior to any awards of Loan Support payments.

Disclaimer

The Mass Solar Loan Program Manual does not commit MassCEC to award any funds, pay any costs incurred in preparing a Technical Application or a Loan Support Application, or procure or contract for services or supplies. MassCEC reserves the right to accept or reject any or all Loan Support Applications received, negotiate with all qualified System Owners, cancel or modify the Program Manual in part or in its entirety, or change the Technical Application and Loan Support Application guidelines, when it is in MassCEC's best interest to do so.

Changes/Amendments to the Program Manual

This Program Manual has been distributed electronically using the MassCEC's website. It is the responsibility of System Owners, Solar Installers, and Lenders to check MassCEC's website for any addenda or modifications to the Program Manual to which they intend to respond. MassCEC, the Commonwealth of Massachusetts, and its subdivisions accept no liability and will provide no accommodation to System Owners, Solar Installers, and Lenders who submit a Technical Application or Loan Support Application based on an out-of-date Program Manual and/or related document.

By signing and submitting either a Technical Application or a Loan Support Application to participate in the Program, the Parties agree to be bound by the terms and conditions of the Participant's Agreement set forth as Attachment E.

ATTACHMENT C. MINIMUM TECHNICAL REQUIREMENTS

Solar PV projects participating in the Mass Solar Loan Program, as defined in the Program Manual, must demonstrate compliance with the Minimum Technical Requirements set forth in this attachment, with the exception of community shared solar projects. These requirements are not intended to be all-encompassing, nor is this attachment intended to be a substitute for engineering specifications or for safety requirements. Site-specific conditions and/or local regulations may require additional requirements not contained in this attachment. MassCEC reserves the right to withhold Program Loan Support connected to any PV project that does not satisfy the Minimum Technical Requirements. **Please contact MassCEC at solarloan@masscec.com to discuss applicable technical requirements for community shared solar projects.**

Eligible and Related Equipment

All installations must use solar photovoltaic (PV) technology, which is defined as cells or solar photovoltaic arrays that directly convert energy from the sun into electricity. Building integrated installations are eligible assuming all other requirements are met.

Eligible Project Costs

Qualified solar electric property costs include those that use solar energy to generate electricity for residential use in Massachusetts. No costs relating to a solar panel or other property installed as a roof (or portion thereof) will fail to qualify solely because the property constitutes a structural component of the structure on which it is installed. The home does not have to be your main home so long as the home is located in the Commonwealth of Massachusetts.

The following costs associated with a PV project may not be financed through the Mass Solar Loan Program. Please note that this list is not comprehensive:

- Tree trimming or other vegetation management
- Batteries or charge controllers associated with energy storage systems
- Re-roofing costs

Minimum Design and Estimated Production Requirements

The PV project must be designed so that the estimated annual energy output for the PV project, based on actual site specific shading, azimuth, and inclination is at least 70% of the default optimal output for a fixed PV project of the same capacity, as estimated by PVWATTS with a shade estimate from an accepted shading analysis tool as noted below. Solmetric SunEye, Solar Pathfinder, Wiley ASSET software or other MassCEC approved shading analyses will be accepted. MassCEC will require a copy of the shading analysis for each PV project in the Mass Solar Loan Program. **Please contact MassCEC at Solarloan@masscec.com prior to submitting a shading analysis that is not listed above.**

Optimal parameters for purposes of a PVWATTS estimate are: 1) system losses of 14 percent, 2) 42 degree array tilt, and 3) 180 degree (True South) azimuth.

PVWATTS is available at the following website: <http://www.nrel.gov/rredc/pvwatts/>.

Installation Requirements¹

The PV project electrical work must be performed by a Massachusetts licensed electrician. For more information: <http://www.mass.gov/ocabr/licensee/dpl-boards/el/regulations/board-policies/guidance-memo-pv-installation.html>

¹ All references are to the 2014 Massachusetts Electrical Code unless otherwise noted.

The PV project must be installed according to the manufacturer's instructions and in compliance with all applicable codes, standards, interconnection and permitting requirements including:

- Local, state, and/or federal building and electrical² laws, codes and practices.
- The provisions of the most current edition of the Massachusetts Electric Code (MEC) as specified by state code. In all cases where manufacturer instructions, third-party guides/handbooks, or other materials contradict the most current edition of any local, state, or federal code, the applicable code shall take precedence over such materials.
- Interconnection Agreement - A separate application must be submitted to the electric utility to start the formal interconnection process, and sufficient lead time should be allowed as part of the installation, based on timeframes listed in the Interconnection Tariff. All PV projects must have an appropriate electric utility interconnection agreement in place, and have authorization to interconnect from the utility at the time of interconnection to the utility grid.
- All pertinent permits and inspections must be obtained and copies kept on file as may be required by local codes and/or state law.

Additional general installation practices to be followed include:

- All installations must follow the most current edition of the MEC with the following changes as noted below.
- Solar PV projects designed to be installed on pitched (greater than 5°), non-flat roofs, are required to have a tilt and azimuth that is the same as the roof pitch and azimuth, in order to be eligible for the Program.
- Installations of ground- and pole-mounted arrays must have a disconnect switch as described in Article 690.17, located at the array to isolate all DC current carrying conductors. For installations on buildings, refer to Article 690.12.
- Solar PV systems shall not be connected directly to the output of a standby generator, unless the generator is designed to be operated in parallel with a PV system. Connecting in this manner may void the generator manufacturer's warranty.
- Areas where wiring passes through ceilings, walls, or other areas of the building must be properly restored, booted, and sealed.
- Thermal insulation in areas where wiring is installed must be returned to "as found or better" condition.
- All installed electrical components must be listed by a nationally recognized testing laboratory such as Underwriters Laboratory (UL), and/or be compliant with Institute of Electrical and Electronics Engineers (IEEE) standards, or the American National Standards Institute (ANSI), or other nationally recognized testing laboratory standards (e.g., UL, CSA, ETL, TUV, etc.), unless otherwise noted in this document, and installed in a manner consistent with the relevant listing and labeling.
- An owner's manual of operating and maintenance instructions must be provided to the PV project owner and preferably also posted on or near the PV project. The owner's manual should include manufacturer's specifications, serial numbers, warranty policies, etc.
- Owners must be provided with, at minimum, a basic training orientation that includes maintenance instructions, troubleshooting, meter reading, and electric production reporting instructions. Owners should also be informed of any opportunities to sell Solar Renewable Energy Certificates (SRECs). For more information, see the Energy Production Reporting Requirements section later in this document.

Best Practice/Common Installation Violations

- All work must be completed in a neat and professional manner, as required by Article 110.12.
- Twist-on wire connectors (wire nuts) shall not be used in any outdoor enclosure unless listed to UL 486D for use in damp/wet locations. Proof of listing will be required during inspection if applicable. (See Article 110.28 for more information)
- Warning labels, as specified in the MEC must be posted on disconnects, panel enclosures, DC raceways, and accessible

² Massachusetts Building Code (780 CMR) and Electrical Code (527 CMR) are available from the Executive Office of Public Safety and the Board of Fire Prevention Regulations, respectively.

junction boxes. The labels shall be suitable for the environment in which they are installed, as required by Article 110.21(B).

- Article 300.7(A) requires raceways passing from the interior to the exterior of a building be filled with an approved material to prevent the circulation of warm air to a colder section of the raceway.
- Terminal ratings and conductor size/limitations must be followed per Article 110.3(B). Common violations include multiple conductors under a terminal listed for a single conductor, or conductors undersized for the terminals, such as inside a meter enclosure.
- MassCEC recommends that photos be taken of the following system components for all rooftop solar arrays: module frame grounding method, array grounding method, array wire management, interior of any rooftop enclosures, and exterior of any rooftop enclosures. These photos shall be kept on record with the primary installer and made available to MassCEC upon request.
- MassCEC recommends, but does not require, that all PV projects installed under the Mass Solar Loan program include appropriate surge arresters or other means to protect PV project components from lightning and other surge events. However, it is the responsibility of the installer to ensure that the installation meets any local, state or federal building and electrical laws that address lightning and surge protection.

PV Project and Equipment Warranty Requirements

- **Installer Warranty.** All PV projects must have a minimum 5 year labor warranty provided by the installer to protect the system owner against defective workmanship, PV project or component breakdown (exceptions noted below), or degradation in electrical output of more than fifteen percent from their originally rated electrical output during the warranty period. The warranty must cover the PV project, including PV modules (panels) and inverters, and provide for no-cost repair or replacement of the PV project or system components, including any associated labor during the warranty period.
- **Manufacturer Warranty.** All major equipment must meet the following minimum manufacturer warranties:
 - Photovoltaic Module: Minimum of one year product warranty from date of sale to first System Owner for product workmanship and materials, plus a minimum performance warranty of 20 years within which time the module will produce, under standard test conditions, a minimum of 80% of the product's minimum rated power at time of sale;
 - Inverters: Minimum of 10 years product warranty from date of sale to first System Owner for product workmanship and materials;
 - Revenue grade production meters: 2 year product warranty
 - Mounting equipment: 5 year product warranty.
- **Exception:**
 - Aforementioned warranty requirements do not apply to the components of a Data Acquisition System with exception of the revenue grade meter. However, equivalent warranties, if available, or equivalent service contracts are strongly recommended for such equipment.

Additional Solar PV Equipment Requirements

The equipment and components that comprise the PV project must have the following characteristics:

- All electrical equipment funded in part or in whole by MassCEC must be new, with the exception of remanufactured revenue grade meters for application to PV systems of 10 kW capacity or less.
- Underwriters Laboratory (UL) listed and compliant with Institute of Electrical and Electronics Engineers (IEEE) standards, or other nationally recognized testing laboratory standards (e.g., UL, CSA, ETL, TUV, etc).
 - All photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of the UL Standard 1703.

- Inverters must be certified as meeting the requirements of IEEE 1547 and UL Standard 1741.
- All modules, inverters, and production meters must be on the California Energy Commission’s list of eligible renewable energy equipment: http://www.gosolarcalifornia.ca.gov/equipment/pv_modules.php.
 - Non-Expedited Solar Installers wishing to confirm that the equipment is listed in the application portal, please contact the Mass Solar Loan Team at solarloan@masscec.com. Note: Unlisted equipment must meet the above mentioned requirements and be added to the California Energy Commissions list of eligible renewable energy equipment to be eligible in the program.
- Exceptions:
 - A Data Acquisition System does not need to be UL listed.
 - Reconditioned meters recertified to meet accuracy standards.

Electricity Production Meter Requirements

All PV projects must have a dedicated production meter that:

- Is readily accessible and easily understood by the System Owner;
- Records the PV project’s AC output as measured on the AC side of the PV project’s inverter; in the case of DC-only PV projects the meter should record the PV project output provided to the facility load; if a storage device is integral to the PV project, the meter should record the output from the storage device;
- Shall be separate from the utility billing meter and shall not interfere with utility billing or net-metering;
- Must be a standard utility “revenue quality” meter that conforms to applicable American National Standards Institute (ANSI) C-12 standards and shall be installed on the AC output side of the PV projects inverter; and
- Shall be available for periodic testing and/or re-calibration, if necessary.
- Must meet the accuracy and other requirements specified in the most recent version of the SREC II – Production Metering Requirements, and any other relevant requirements put forth by MassCEC for SREC reporting.
- If a PV system requires two revenue grade meters to establish the amount of AC energy generated, such as in the case of some systems incorporating energy storage, then two revenue grade meters shall be installed. Installer must provide training to the person(s) who will be reporting to the MassCEC PTS on how to derive the appropriate energy generation value from readings on the two meters.

Project Timeframe

In order to qualify for payment, applications must be submitted in the application portal, and a Loan Support Request must be submitted and approved by MassCEC prior to receiving authorization to interconnect by the utility for a solar project. Any installation work done prior to Loan Support Request approval is done at your own risk. By signing the Project Completion Form, all parties certify that the System Owner has incurred costs by the installer after the award date for an amount equal to or greater than the Program Loan.

All projects must be completed within one year of the Loan Support Qualification Award date. Awards for Projects that do not achieve Project Completion within one year will be automatically rescinded, unless an extension is requested, in writing, by the System Owner, and approved by MassCEC.

MassCEC maintains sole discretion on the determination of which projects qualify for such extensions. It is the general policy of MassCEC to **not** grant extensions unless there are extenuating circumstances.

For community shared solar projects, please contact the Mass Solar Loan team at solarloan@masscec.com

Minimum Energy Efficiency Requirement

Prior to disbursement of the Interest Rate Buy Down and Moderate Income Loan Support payment (if applicable) MassCEC expects

each System Owner to fulfill one of the following requirements:

1. Have an energy audit performed on all applicable structures on their property;
2. Be able to demonstrate that an energy audit has been performed within the past five years on all applicable structures on their property; or
3. Be able to demonstrate that an energy audit has been scheduled for all applicable structures on their property.

As part of the Project Completion process, System Owners will attest that one of the above requirements has been met.

Additionally, MassCEC reserves the right to request verification of fulfilling one of the above requirement measures at any time.

Energy audits can be performed by a utility or Cape Light Compact efficiency program, a certified energy manager (CEM), a professional engineer (PE), or an experienced energy services professional. Audits or audit checklists completed by the homeowner are unacceptable.

By signing to the program Participant's Agreement, the Installer and the System Owner are certifying that an energy audit as defined above, or the equivalent of an energy audit (i.e. building permit for new building construction) has occurred.

MassCEC strongly recommends, but does not require, that System Owners perform any feasible measures recommended by such audits, as energy efficiency is generally the most cost-effective energy solution.

Energy Efficiency Exception for New or Recent Construction:

An energy efficiency audit is not required if a building was constructed in compliance with current energy codes (the 7th Edition of the Massachusetts State Building Code's *Energy Conservation Requirements*).

Residential one- and two-family, detached buildings that can be established to have been constructed based upon a building permit issued after October 6, 2008, are exempted from the minimum energy efficiency requirements. However, partial renovations or additions do not qualify for this exception. **Note:** While a new energy audit is not required if one was performed on the building within the last five years, homeowners are encouraged to have an additional energy audit. Energy efficiency incentives have been added to the Mass Save program over the last several years, for which customers may be eligible.

Energy Efficiency Resources

For System Owners residing in investor-owned utility territory, more information on energy efficiency audits can be found at MassSave: <http://www.masssave.com/>

For System Owners residing in municipal light plant territory, contact your local municipal light plant to learn about the options for a free residential energy audit.

Energy Production Reporting Requirements

Manual or Automated PTS Reporting. System Owners (or their designated PTS Representatives) are required to report the project's electrical output every month to MassCEC's Production Tracking System (PTS) located at www.masscec-pts.com. The monthly system production may be reported manually or automatically through a Data Acquisition System (DAS). The PTS is used to help MassCEC monitor project performance and is a required component to participating in the SREC-II program.

Reporting to the PTS involves the following steps:

- Prior to Project Completion, the System Owner's aggregator or Solar Installer will apply for SREC qualification with the DOER via the online registration long form, indicating participation in the program in that application. Shortly after Project Completion paperwork is submitted in the Solar Loan Application Portal, MassCEC or the PTS Administrator will e-mail each System Owner (and their PTS Representative, if applicable) the project PTS login information including a username and password. Upon receipt of the PTS login information, System Owners or their

designated PTS Representatives should log in and retain their assigned usernames and passwords in a safe place for later use.

- The System Owner, or designated PTS Representative, may go to the PTS website specified in the instructions and enter all first time data (e.g., the date the project started producing power, which must be after the utility authorization to interconnect).
- Each month, unless using Automated Reporting through a DAS, the System Owner, or designated PTS Representative, can manually enter a meter reading into the website.

Note: As part of the Mass Solar Loan Program, it is required that System Owners are RPS Class I eligible and that they are able to qualify under the Massachusetts RPS Solar Carve-Out II Program (SREC-II Program) or any successor program. As such, monthly production reporting to the PTS will be required. Please note that any PV project greater than 10 kW will be required to report monthly production through a DAS for the purposes of selling SRECs. MassCEC, as designated by DOER, serves as the Independent Third-Party Meter Reader and verifies monthly production for projects generating SRECs. In addition, if you are adding solar capacity to an existing system, contact DOER to determine eligibility for the added capacity to generate SRECs. In some instances, additional capacity may need to be metered separately for purposes of selling SRECs. For more information about reporting requirement and the PTS, visit the [Production Tracking System Guide](#).

ATTACHMENT D. CRAWL BEFORE YOU WALK POLICY

The Crawl Before You Walk Policy is a process that Non-Expedited Solar Installers (first-time installers coming through a MassCEC program) must successfully complete in order to become an Expedited Solar Installer under the Mass Solar Loan Program. The process is outlined as follows:

- 1) Non-Expedited Installer registers as a new installer in MassCEC's online Application Portal to receive a login, and subsequently submits one (1) Technical Application.
- 2) If the application passes the threshold review, it then undergoes a "design review" by the Mass Solar Loan third-party technical consultant.
- 3) Once the design review and Technical Application review are complete, the project will receive a Technical Confirmation letter through the Application Portal, which the System Owner can take to a participating Lender.
- 4) Once the System Owner has secured a loan from a participating Lender, the Program Loan Support request has been approved by MassCEC, and the Lender has made the initial disbursement of the Program Loan, the Non-Expedited Installer proceeds with the installation and upon finishing the project submits the Project Completion paperwork into the Application Portal.
- 5) Upon receipt of the Project Completion paperwork, a post-installation inspection of the system will be scheduled. This inspection will be performed by the Mass Solar Loan program's third-party technical consultant. For more information on inspections please refer to the "Inspection Protocol" section below.
- 6) Upon satisfactory completion of the inspection, MassCEC will work to review and approve the Project Completion paperwork for remittance of the remaining disbursement of the Program Loan. Upon Project Completion Approval, MassCEC will also disburse the remaining Interest Rate Buy-Down and Income Based Loan Support (if applicable) to the Lender.
- 7) Upon satisfactory completion of the "Crawl Before You Walk Policy", as determined by MassCEC and the Mass Solar Loan third-party consultant, the Solar Installer will gain Expedited status and will be set up as an Expedited Installer in the online Application Portal.
- 8) After Expedited Installer status is granted, the Solar Installer will proceed with entering additional applications as part of the Mass Solar Loan Program in the online Application Portal.

Please refer to Section 6 in the Program Manual for the application process. Any subsequent Technical Applications received prior to completing the "Crawl Before You Walk Policy" will not be accepted into the Process Queue.

Inspection Protocol

The MassCEC selects specific completed projects for Quality Assurance (QA) field inspection following a sampling protocol. Inspection frequency is primarily based on the status of the Solar Installer and Subcontractor within the Program and results of any previous inspections. MassCEC intends to base inspection frequency on the Subcontractor of record; specifically the personnel directly responsible for system installation and workmanship. Non-expedited installers will initially be subjected to up to 100% inspection rate until proving that system installations are following program guidelines, and meeting technical requirements.

The purpose of the QA Field Inspection is to provide MassCEC with an opportunity to evaluate the accuracy of design paperwork and to verify that the PV system was installed according to all Mass Solar Loan Program requirements.

MassCEC may select any completed project at any point in the future for field inspection based upon customer complaints, warranty related issues or a review of the work done by a Solar Installer or Subcontractor under review for workmanship issues. These inspections can be selected regardless of expedited, or on-expedited, installer status.

Waiver Option: MassCEC, at its sole discretion, may grant a waiver to the “Crawl Before You Walk Policy” for Primary Installers that can demonstrate that they have successfully installed **at least ten (10)** projects in outside of Massachusetts with similar requirements and standards as the Mass Solar Loan program. Please email solarloan@masscec.com for additional information if you would like to submit a waiver request for consideration.

MassCEC reserves the right to require Solar Installer to stay in Non-Expedited Status or repeat the Crawl Before You Walk process as necessary.

Companies or individuals applying as Non-Expedited Solar Installers are encouraged to do more than one Solar PV Project under the Program. The intent is not for companies to come through the Program only once.

ATTACHMENT E. PARTICIPANTS AGREEMENT

Mass Solar Loan Participant's Agreement

(For acceptance by System Owner and Solar Installer)

The following Participant's Agreement (the "Agreement") is issued by the Massachusetts Clean Energy Technology Center ("MassCEC"), an independent public instrumentality of the Commonwealth of Massachusetts. Any changes or electronic alterations to the official version of this form shall be void. Both the **System Owner** and the **Solar Installer** acknowledge and agree that they have read and understand all of the terms and conditions of this Agreement, the Mass Solar Loan Program Manual, and the Minimum Technical Requirements (Attachment C) as incorporated herein (together, the "Program Documents") and specifically agrees to be bound by their contents upon the execution and submission of the Mass Solar Loan Technical Application ("Technical Application"). This Agreement shall become effective as of the date indicated on the approval of the Technical Application from MassCEC ("Technical Confirmation"). Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to such terms in the Program Manual.

Please Note: Accepting the following Agreement as part of the Technical Application does not automatically entitle the System Owner to be eligible for Program Loan Support (as that term is defined in the Program Manual). Program Loan Support must be requested on behalf of a System Owner by a lending institution ("Lender") upon loan closing, provided that System Owner has received Technical Confirmation. Lenders will directly receive all disbursements of Program Loan Support. MassCEC shall not be required to provide Program Loan Support for PV Projects that do not reach completion or for which the Project Completion documentation is not entered into the Application Portal by the Solar Installer on behalf of the System Owner. The final Program Loan Support to be disbursed to Lender is calculated based on the lesser of Final Project Cost or the Program Loan Amount, regardless of whether the System Owner changes the PV Project specifications.

Whereas, MassCEC is offering loan support in the form of an Interest Rate Buy Down ("IRBD"), Income Based Loan Support ("IBLS"), and Loan Loss Reserve ("LLR") (together, "Program Loan Support") under the Mass Solar Loan Program Manual Solicitation No. 2015-MSL Version 1 (the "Program Manual") to eligible residents and property owners in Massachusetts to finance the construction of direct-purchase residential solar photovoltaic projects or for ownership stakes in Community Shared Solar ("CSS") projects;

Whereas, the Solar Installer (the "Solar Installer") has submitted a Technical Application on behalf of the Massachusetts resident or homeowner (the "System Owner"), (together the "Parties") for the installation of a residential solar photovoltaic system (the "PV Project" or "Qualified Project");

Whereas, upon receipt of Technical Confirmation, the System Owner is eligible to apply to a lender ("Lender") to finance construction of the PV Project (the "Program Loan") and receive eligible Program Loan Support through the Mass Solar Loan Program; and

Whereas, as a condition of participation in the Mass Solar Loan Program (the "Program"), the Parties agrees to abide by the terms of this Agreement.

Now, therefore, for good and valuable consideration, System Owner and Solar Installer agree as follows:

1. **Eligibility.** **System Owner** and **Solar Installer** each hereby represent that they satisfy all relevant eligibility requirements set forth in the Program Documents, including but not limited to the System Owner Eligibility

Requirements, Eligible Property Requirements, Qualified Project Eligibility, and Solar Installer Eligibility as applicable, and that they will comply with all terms and conditions set forth therein.

2. Program and Application Requirements.

- a. *Technical Application.* **System Owner** and **Solar Installer** have familiarized themselves with the Program “Detailed Process Flow” as provided in the Program Manual and agree to comply with all requirements for submitting the Technical Application and Project Completion documents.
- b. *Income Based Loan Support Application.* **System Owner** agrees and acknowledges that in order to qualify for income based loan support, which reduces the amount of the Program Loan principal payments payable by the System Owner to the Lender, System Owner must ensure eligibility and apply for such support at the time of submitting a Technical Application, as further detailed in the Program Manual and in the Application Portal. **System Owner** acknowledges that it must note that it is applying for IBLs in the Technical Application and cooperate with the **Solar Installer** to complete the income verification application with MassCEC’s income verification consultant by following the directions in the Technical Application. **System Owner** shall be responsible for providing the IBLs eligibility confirmation from the income verification consultant to the Lender when applying for a Program Loan.
- c. *Applying for a Program Loan with Lender.* **System Owner** has read and understands the process for applying for a Program Loan with a Lender and understands that the Lender will submit a Loan Support Application on behalf of the System Owner and directly receive all disbursements of Program Loan Support from MassCEC, as further detailed in the Program Manual.
- d. *Loan Support Application.* **System Owner** agrees and acknowledges that Lender cannot submit a Loan Support Application to MassCEC unless System Owner has submitted a Technical Application and has received Technical Confirmation, a unique Program identification number for the PV Project, and confirmation of IBLs eligibility from the income verification consultant (if applicable).

3. Signed Turnkey Contract. **System Owner** has received a quote for a PV Project and has entered into a contract with the Solar Installer to design and construct the PV Project (the “Turnkey Contract”) which requires that the Solar Installer meet all requirements set forth in the Program Documents. **Solar Installer** and **System Owner** agree and acknowledge that the Turnkey Contract is contingent on the System Owner qualifying for a Program Loan and the Turnkey Contract is required to be in place prior to the Solar Installer submitting a Technical Application for the PV Project.

4. The PV Project.

- a. *Performance of the Work.* **System Owner** acknowledges that they are solely responsible for directing and controlling all PV Project decisions. **System Owner** shall ensure that the PV Project is installed and completed in accordance with the specifications set forth in the Technical Application and that the PV Project satisfies all eligibility requirements set forth in the Program Documents. **System Owner** acknowledges that MassCEC has the right to deny Program Loan Support for PV Systems not meeting the Minimum Technical Requirements. **System Owner** further acknowledges that the PV System is required to be maintained in good working order for a minimum of ten (10) years from the date of Project Completion.
- b. *Changes in Program Loan Support.* **System Owner** agrees and acknowledges that where there are proposed changes to the scope of a PV Project, MassCEC will not adjust the Program Loan Support greater than the originally approved amount of Program Loan Support. Furthermore, **System Owner** agrees and acknowledges that the final calculation of Program Loan Support to be disbursed to Lender on behalf of System Owner is calculated based on the lesser of Final Project Cost or the Program Loan Amount, regardless of whether the

System Owner changes the PV Project specifications.

c. PV Project Location Change.

- i. *General.* Changes to the physical location of some or all of the components, except in the case of warranty replacements, of an installed PV Project during the first ten (10) years of the PV Project's useful life are prohibited (a "Location Change") without prior written consent from MassCEC.

d. Project Completion. **System Owner** and **Solar Installer** shall work cooperatively to achieve Project Completion within one year of Program Loan Support Application Approval. Failure to achieve Project Completion within the specified timeframes may result, at MassCEC's sole discretion, in forfeiture of all or a portion of the Program Loan Support. **Solar Installer** shall be required to submit project completion documents on behalf of **System Owner**. The project completion package must include all required documentation in order to gain Project Completion Approval status - any missing information will result in a delay of payment to the Lender, and thereby delay of final loan disbursement to System Owner.

MassCEC shall consider, at its sole discretion, written requests for an extension of the project completion deadline. Consideration of a requested time extension shall be strictly limited to circumstances that are beyond the control of the System Owner or Solar Installer. **System Owner** and **Solar Installer** agree that MassCEC may contact the Parties after Project Completion for data collection and other program oversight purposes.

e. Inspection. **System Owner** agrees to allow MassCEC, or its agents, to enter onto the site of the PV Project to inspect the installed PV Project during the first ten (10) years of its useful life.

5. Indemnification. To the fullest extent permitted by law, **System Owner** and **Solar Installer**, for themselves individually, shall indemnify and hold harmless the Commonwealth, MassCEC, and each of their respective agents, officers, directors and employees (together with the Commonwealth and MassCEC, the "Covered Persons") from and against any and all liability, loss, claims, damages, fines, penalties, costs and expenses (including reasonable attorney's fees), judgments and awards (collectively, "Damages") sustained, incurred or suffered by or imposed upon any Covered Person resulting from (i) a Parties' breach of any of the terms of this Agreement or any false representation of the Parties under this Agreement and/or the Technical Application, (ii) the failure to comply with the provisions of applicable law by the Parties, or (iii) any negligent acts or omissions or reckless or intentional misconduct of the Parties or any of the Parties' agents, officers, directors, employees, contractors or subcontractors.

6. Disclaimer. **System Owner** agrees and acknowledges the following: MassCEC has not investigated, and MassCEC expressly disclaims any duty to investigate any company, Lender, product, service, process, procedure, design, or other matter regarding the installation of the PV Project by the Solar Installer as presented in the Technical Application or the loan product offered by a Lender for the PV Project under the Program. The approval of the Technical Application and Loan Support Application does not constitute an endorsement, warranty, or guaranty of any kind or circumstance by MassCEC of any company, Lender, product, service, process, procedure, design or other matter. The entire risk of use of any Lender, solar installer, equipment vendor, company, product, service, process, procedure, or design is assumed by the **System Owner** as part of its obligations under this Agreement.

7. Insurance. MassCEC recommends that every **Solar Installer** purchase and maintain adequate insurance coverage until completion of the PV Project. MassCEC also recommends that the Parties discuss the types and amounts of coverage maintained and the appropriateness of those coverages for the PV Project. **Solar Installer** and **System Owner** acknowledge the sufficiency of the types and amounts of insurance coverage maintained and the appropriateness of those coverages for the duration of construction of the PV Project. The carrying of any of the

insurance required hereunder shall not be interpreted as relieving the Parties of any responsibility to MassCEC, and the amount and type of insurance coverage will in no way be construed as limiting the scope of indemnification under this Agreement.

8. Consumer Disclosure – Renewable Energy Certificates. The System Owner or its designee shall have title to the PV Project non-energy attributes and any associated Solar Renewable Energy Certificates (“SRECs”) or Renewable Energy Certificates (“RECs”). System Owner is required to participate in the SREC-II or any subsequent program in order to receive Program Loan Support as part of the Program.

9. Mediation / Arbitration. In the event of any dispute concerning the Parties’ respective rights and obligations under this Agreement, the Parties hereby agree to submit such dispute to binding arbitration (“Arbitration”). If any of the Parties’ requests mediation prior to Arbitration, the Parties will work in good faith to mediate their dispute through a jointly selected mediator. The Parties to any such dispute shall share the fees of the mediator or arbitrator jointly, and shall be individually responsible for any legal fees they may respectively incur.

ATTACHMENT F. PROGRAM LOAN SUPPORT EXAMPLE

A potential System Owner receives a quote from an installer for a 5 kilowatt PV system with a total anticipated cost of \$21,500. Before approaching their local participating lender, the system owner's PV installer fills out a technical application through the MassCEC Application Portal. During the technical application process, the system owner's income is also verified allowing them to apply for Income Based Loan Support (IBLS). The system owner qualifies for both IBLS, due to their income, and Loan Loss Reserve funding, due to their credit score. After receiving approval of the system's Technical Application, the System Owner takes the Technical Confirmation form to their local participating lender.

The System Owner only wished to finance \$18,000 of the total system cost and applies for a loan of that amount. Their local lender approves the loan through its standard underwriting procedures and applies, through the Application Portal for program loan support. The loan, as approved by the lender will have a 10-year term and a Gross Loan Interest Rate of 5.75%.

The following sections review the calculations for each of the Program Loan Support types as input into the Loan Support Calculator (Attachment B). Please consult this calculator for more information on the specifics of these calculations or to explore other loan support scenarios.

Loan Support Application Inputs and Initial Loan Support Reservation

For the above case, the inputs for the first step of the calculator are as follows:

Step 1. Project/Loan Information	
Anticipated Project Cost	\$21,500
Loan Amount	\$18,000
Loan Term (Years) *Max 20	10
Pre-IRBD Interest Rate (Gross Loan Interest Rate)	5.75%
Credit Score Class	B: FICO 681 - 719
Income Category	1: ≤ 100% Median Income

The calculator will calculate the following preliminary loan support values. These values are the total loan support reserved for the project. Actual loan support payments to the bank may differ based on the final project cost.

Step 2. Loan Support Reserved	
Interest Rate Buy Down (IRBD) - Interest Only Payment	\$183.24
Reserved IRBD on Full Principal	\$2,354.46
Total Reserved IRBD	\$2,537.70
Reserved Income-Based Loan Support (IBLS)	\$5,400.00
Loan Loss Reserve (LLR)	\$1,800.00

The Interest Rate Buy Down that will be initially allocated to the project, once approved, is calculated as follows:

Interest Rate Buy Down (IRBD) - Interest Only Payment

This reservation amount is calculated as the difference between the Net Present Value of the interest that would be paid after the initial 35% loan amount disbursement at loan closing during a 12-month interest only period and the interest that would be paid by the System Owner after the reduction of their interest rate by the 3% interest rate buy down. The following table shows the calculation for the reservation amount for this program loan support allocation.

Initial Interest-Only Period IRBD Calculation	
Total interest Bank would receive monthly at 5.75% for interest only period	\$30.19
Monthly interest paid by System Owner during interest only period at 2.75%	\$14.44
Difference in monthly payments	\$15.75
Net Present Value of 12-months of the difference in monthly payments discounted at 5.75%	\$183.24

The lender will receive a \$183.24 disbursement from MassCEC to cover this initial maximum interest rate buy down for the loan Interest Only Period based on the 35% of the loan disbursed to the System Owner at closing.

Interest Rate Buy Down (IRBD) - Full Principal Amount Reservation

At this time, the remainder of the maximum interest rate buy down will also be reserved. Please note that the IRBD is calculated and bought down prior to any Income Based Loan Support (example below). This is calculated as follows.

Initial IRBD Reservation Amount for Full Loan Term Calculation	
Total payments Lender would receive monthly at 5.75%	\$197.58
Total payments lender would receive monthly at 2.75%	\$171.74
Difference in monthly payments	\$25.84
Net Present Value of difference in payments over 10 years	\$2,354.46

Reserved Income Based Loan Support (IBLS)

As the System Owner’s income has been verified as Category 1 (Less than 100% MA Median Income), the System Owner qualifies for Income Based Loan Support that will provide a payment of 30% of the total system cost or the total Program Loan (whichever is smaller). The reserved IBSL Payment is calculated as follows.

Reserved IBLS Calculation	
Lesser of loan amount or project costs	\$18,000
IBLS Incentive Rate	30%
IBLS Reserved Amount	\$5,400

Loan Loss Reserve Funding Allocation

The System Owner’s FICO score was between 681 and 719. At this FICO score, MassCEC will deposit 10% of the total amount financed in a Loan Loss Reserve account for the bank. This is calculated as follows.

Loan Loss Reserve Funding Allocation Calculation	
Total Amount Financed	\$18,000
Loan Loss Reserve Reservation Rate	10%
Loan Loss Reserve Reservation Amount	\$1,800

Loan Support Calculations at Project Completion

After completing the project, the final cost of the project has been reduced to \$17,000 due to unexpected changes in the system size. Additionally, instead of requiring 12-months to complete the installation, the system only required 6 months. These changes affect the final Program Loan Support payments that will be provided to the lender. Before final loan support disbursement, the following information is input into the loan support calculator.

Step 3. At Completion	
Final Project Cost	\$17,000
Months of Interest Only Payments	6

These inputs result in the following final loan support amounts.

Step 4. Available Loan Support Payments	
Adjusted - IRBD - Interest Only Payment	\$93
Adjusted IRBD on Full Principal	\$2,224
Total IRBD	\$2,317
Income-Based Loan Support (IBLS)	\$5,100
Loan Loss Reserve (LLR)	\$1,800

Adjusted - IRBD - Interest Only Payment

This loan support amount is the actual loan support due to the lender for the interest-only period of the loan. This is calculated in the following manner.

Adjusted Interest-Only Period IRBD Calculation	
Total Interest Bank Would Receive Monthly at 5.75%	\$30.19
Monthly Interest Paid by Homeowner During Interest Only Period	\$14.44
Difference in Monthly Payments	\$15.75
Net Present Value of 6-Months of the difference in payments	\$92.94

Because \$183.24 was initially disbursed to cover a potential 12-month interest only period, the final IRBD disbursement will be adjusted to account for this over-payment.

Adjusted IRBD on Full Principal

Because the final project cost has decreased to \$17,000, the total interest rate buy down is now calculated based on this total project cost. The final amount due to the bank for the interest rate buy down over the 10-year life of the loan is calculated as follows.

Final IRBD Amount for Full Loan Term Calculation	
Total payments Lender would receive monthly at 5.75%	\$186.61
Total payments lender would receive monthly at 2.75%	\$162.20
Difference in monthly payments	\$24.41
Net Present Value of difference in payments over 10 years	\$2,223.66

Therefore, the total amount that the bank will receive for the interest rate buy down will be the sum of the IRBD payments for the actual interest only period (\$92.94) and the IRBD payments for the full loan term based on the final project cost (\$2,223.66). This total is \$2,316.59. Because the bank previously received \$183.24 in the first IRBD disbursement, the second IRBD disbursement will be \$2,133.35 (\$2,316.59 - \$183.24).

Adjusted Income Based Loan Support (IBLS)

The IBLS payment is adjusted from the initially reserved amount to account for the reduced project cost as shown below.

Final IBLS Calculation	
Lesser of loan amount or project costs	\$17,000
IBLS Incentive Rate	30%
IBLS Reserved Amount	\$5,100

Loan Loss Reserve (LLR)

The Loan Loss Reserve allocation for this project is not adjusted due to changes in the final project cost or interest only period and remains \$1,800. The lender will be eligible to recover up to 80% of the remaining principal balance for the project if it defaults, and if sufficient funds are available in their loan loss reserve account at MassCEC.