Massachusetts Department of

Energy Resources (DOER)

Solar Massachusetts Renewable Target Program (SMART)

June 2026

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Introduction

The Massachusetts Department of Energy Resources has tasked BW Research to collect data relevant to the implementation of the Solar Massachusetts Renewable Target (SMART) program. BW Research seeks to collect data on the project costs and cost factors of SMART projects from active industry participants in Massachusetts. **The information collected will directly inform incentive amounts and potential program enhancements, so your participation is crucially important.**

BW Research Partnership is collecting these survey responses on behalf of the Department of Energy Resources pursuant to G.L. c. 25A, § 7 and shall keep individual responses confidential to the extent permitted by law, but may release aggregates and analysis of survey responses. **The survey will be emailed to you within the next week.** While we aimed to ask as few questions as possible, the questionnaire can be quite detailed, especially for respondents with experience with a wide range of SMART eligible solar and battery storage projects. **The survey should take between 20 – 40 minutes depending on the respondent.**

At the end of the survey you will be asked if you are interested in a follow-up phone interview. This interview is entirely optional, but can help the research team better understand the particular challenges that the solar industry in Massachusetts is facing at this point in time.

If you have any questions, please do not hesitate to reach out to the project manager, Nate Hunt, at nhunt@bwresearch.com.

Screener Questions

A. Does your firm conduct any solar or solar plus storage related work in the state of Massachusetts?

1. Yes
2. No (TERMINATE)
3. Don't know/ Refused (TERMINATE)

B. Which of the following industry descriptions best describes your organization's focus in the solar industry? (Allow multiple responses)

1. Developer
2. Installer/ Engineering Procurement and Construction (EPC)/ Integrator
3. Operations and Maintenance (O&M) provider
4. Project management
5. Equity investor
6. Tax equity investor
7. Lender/ debt provider
8. Wholesale market participant
9. Service provider (engineering, legal support, permitting support)
10. Project host
11. Project aggregator
12. Other (please specify):
13. Not sure [TERMINATE]

C. Below are the definitions of datapoints that we may ask you for.

- **Total installed cost PV only** - costs associated with installing the photovoltaic system, and include equipment, labor, engineering, permitting, customer acquisition, marketing, interconnection and any other costs that apply in Year 0 of the project cash flow.
- **Total fixed costs (PV only)** - annual costs associated with the operation and maintenance of the photovoltaic system over the lifetime of the project.
- **Total solar photovoltaic plus battery energy storage system (BESS) installed cost** - cost of purchasing and installing all photovoltaic and battery-related equipment, including labor and other associated costs.
- **Total energy storage fixed costs** - annual costs associated with the operation and maintenance of the energy storage system over the lifetime of the project.
- **Financing data** – information on project financial and debt structure terms (capital stack, debt terms, interest rates, internal rate of return)

Please select the following solar system production and project costs that you are able to accurately provide data on: (Please select all that apply)

1. Total installed cost **PV only**
2. Total fixed costs (Operations and Maintenance costs) **PV only**
3. Total solar photovoltaic plus **battery energy storage system** installed cost
4. Total **energy storage** fixed cost
5. Financing data for PV or PV+BESS systems
6. Solar photovoltaic type of ownership information
7. I cannot accurately provide any of the above information, but I can provide you with the contact information for someone that does (Collect email THEN TERMINATE)
8. Don't know/ Refused (TERMINATE)

PIPE IN OPTIONS FROM SC

D. Are you able to provide **exact** PV and/or BESS project costs using internal data? These values should be provided from internal databases for projects that will or would be eligible for the SMART 2027 program year. (select all that apply)

1. Yes, total installed cost
2. Yes, total fixed costs (Operations and Maintenance costs)
3. Yes, total solar photovoltaic plus energy storage installed cost
4. Yes, total Energy storage fixed cost
5. Yes, I can provide financing data
6. Yes, I can provide data on the type of ownership information
7. No, but I can provide ballpark estimates
8. Don't know/ Refused

LIMIT SE TO 3 COLUMN OPTIONS AND 3 ROW OPTIONS

E. For each of the following project types, please indicate the photovoltaic project size categories for which your firm has that may be eligible for enrollment in the 2027 program year for SMART: (SELECT ALL THAT APPLY)

	≤ 27.5 kWdc residential projects (≤ 25 kWac)	≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac)	>27.5-275 kWdc projects (>25-250 kWac)	>275-600 kWdc projects (>250-500 kWac)	>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac)	>1.2-6.5 MWdc projects (>1-5 MWac)	Don't know/ Refused
Ground-Mount solar		2	3	4	5	6	7
Brownfield Solar		2	3	4	5	6	7
Community Shared Solar (*Minimum 40% low income offtakers*)		2	3	4	5	6	7
Landfill Solar		2	3	4	5	6	7
Solar Canopy		2	3	4	5	6	7
Rooftop Solar	1	2	3	4	5	6	7
Dual-use Agricultural Solar		2	3	4	5	6	7
Low-Income Residential Solar (for below 25 kW)	1						
Floating Solar		2	3	4	5	6	7
Projects Serving Public Entities		2	3	4	5	6	7
Pollinator-Friendly Solar		2	3	4	5	6	7

LIMIT SF TO TWO COLUMN OPTIONS AND TWO ROW OPTIONS

F. For each of the following solar plus energy storage project types, please indicate the photovoltaic project size categories for which your firm has projects that may be eligible for the 2027 program year under SMART:

	≤ 27.5 kWdc residential projects (≤ 25 kWac)	≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac)	>27.5-275 kWdc projects (>25-250 kWac)	>275-600 kWdc projects (>250-500 kWac)	>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac)	>1.2-6.5 MWdc projects (>1-5 MWac)	We do not work with these projects	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration	1	2	3	4	5	6	7	8
25% of Nameplate (kW), 4-hour duration	1	2	3	4	5	6	7	8
25% of Nameplate (kW), 6-hour duration	1	2	3	4	5	6	7	8
50% of PV Nameplate (kW), 2-hour duration	1	2	3	4	5	6	7	8
50% of PV Nameplate (kW), 4-hour duration	1	2	3	4	5	6	7	8
50% of PV Nameplate (kW), 6-hour duration	1	2	3	4	5	6	7	8
100% of PV Nameplate (kW), 2-hour duration	1	2	3	4	5	6	7	8
100% of Nameplate (kW), 4-hour duration	1	2	3	4	5	6	7	8
100% of Nameplate (kW), 6-hour duration	1	2	3	4	5	6	7	8

Section 1: TOTAL INSTALLED COST

Please provide additional data and information requested to the best of your knowledge to update our data. The data referenced here is from the National Renewable Energy Laboratory (NREL) Annual Technology Baseline (ATB) dataset for 2025

ASK Q1 IF SD=1 OTHERWISE SKIP
PIPE IN SE=1 OPTIONS

1. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** what are the estimated **total installed costs (including equipment, labor, engineering, permitting, customer acquisition, development fees, marketing, interconnection. Do not include any mitigation related fees in your estimate)? Please include information for one project at a time**

	Total installed cost per capacity($ per Kilowatt DC)
Rooftop Solar	
Low-Income Residential Solar (for below 25 kW)	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
Rooftop Solar	
Low-Income Residential Solar (for below 25 kW)	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
Rooftop Solar	
Low-Income Residential Solar (for below 25 kW)	

[same page as the above] Is this project planned to meet any of the following criteria? **Please include information for one project at a time.** [SELECT ALL THAT APPLY]

a. Investment Tax Credit Eligible (PV & Storage System)
b. Production Tax Credit Eligible (PV & Storage System)
c. Investment Tax Credit Eligible (PV System only)
d. Production Tax Credit Eligible (PV System only)
e. Investment Tax Credit Eligible (Storage System only)
f. Production Tax Credit Eligible (Storage System only)
g. Foreign Entity of Concern (FEOC) Compliant
h. None of the Above

PIPE IN SE=1 OPTIONS
SKIP Q2 IF SD=1

2. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** would you say that the **Cost per DC Kilowatt** that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **total installed costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Rooftop Solar **($4.50 per Kilowatt DC)**	0	1	2	3	4	5
Low-Income Residential Solar **($4.50 per Kilowatt DC)**	0	1	2	3	4	5

ASK Q3 IF SD=1 OTHERWISE SKIP
PIPE IN SE=2 OPTIONS

3. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** what are the estimated **total installed costs (including equipment, labor, engineering, permitting, customer acquisition, development fees, marketing, interconnection. Do not include any mitigation related fees in your estimate)? Please include information for one project at a time**

	Total installed cost per capacity($ per Kilowatt DC)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page as the above] Is this project planned to meet any of the following criteria? **Please include information for one project at a time.** [SELECT ALL THAT APPLY]

	Investment Tax Credit Eligible (PV & Storage System)	Production Tax Credit Eligible (PV & Storage System)	Investment Tax Credit Eligible (PV System only)	Production Tax Credit Eligible (PV System only)	Investment Tax Credit Eligible (Storage System only)	Production Tax Credit Eligible (Storage System only)	Foreign Entity of Concern (FEOC) Compliant	None of the Above
Ground-Mount solar	1	2	3	4	5	6	7	8
Brownfield Solar	1	2	3	4	5	6	7	8
Community Shared Solar (*Minimum 40% low income offtakers*)	1	2	3	4	5	6	7	8
Landfill Solar	1	2	3	4	5	6	7	8
Solar Canopy	1	2	3	4	5	6	7	8
Rooftop Solar	1	2	3	4	5	6	7	8
Dual-use Agricultural Solar	1	2	3	4	5	6	7	8
Floating Solar	1	2	3	4	5	6	7	8
Projects Serving Public Entities	1	2	3	4	5	6	7	8
Pollinator-Friendly Solar	1	2	3	4	5	6	7	8

PIPE IN SE=2 OPTIONS
SKIP Q4 IF SD=1

4. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** would you say that the **Cost per DC Kilowatt** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **total installed costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)						

ASK Q5 IF SD=1 OTHERWISE SKIP
PIPE IN SE=3 OPTIONS

5. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** what are the estimated **total installed costs (including equipment, labor, engineering, permitting, customer acquisition, development fees, marketing, interconnection. Do not include any mitigation related fees in your estimate)? Please include information for one project at a time.**

	Total installed cost per capacity($ per Kilowatt DC)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page as the above] Is this project planned to meet any of the following criteria? **Please include information for one project at a time.** [SELECT ALL THAT APPLY]

	Investment Tax Credit Eligible (PV & Storage System)	Production Tax Credit Eligible (PV & Storage System)	Investment Tax Credit Eligible (PV System only)	Production Tax Credit Eligible (PV System only)	Investment Tax Credit Eligible (Storage System only)	Production Tax Credit Eligible (Storage System only)	Foreign Entity of Concern (FEOC) Compliant	None of the Above
Ground-Mount solar	1	2	3	4	5	6	7	8
Brownfield Solar	1	2	3	4	5	6	7	8
Community Shared Solar (*Minimum 40% low income offtakers*)	1	2	3	4	5	6	7	8
Landfill Solar	1	2	3	4	5	6	7	8
Solar Canopy	1	2	3	4	5	6	7	8
Rooftop Solar	1	2	3	4	5	6	7	8
Dual-use Agricultural Solar	1	2	3	4	5	6	7	8
Floating Solar	1	2	3	4	5	6	7	8
Projects Serving Public Entities	1	2	3	4	5	6	7	8
Pollinator-Friendly Solar	1	2	3	4	5	6	7	8

PIPE IN SE=3 OPTIONS
SKIP Q6 IF SD=1

6. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** would you say that the **Cost per DC Kilowatt** that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **total installed costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

ASK Q7 IF SD=1 OTHERWISE SKIP
PIPE IN SE=4 OPTIONS

7. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** what are the estimated **total installed costs (including equipment, labor, engineering, permitting, customer acquisition, development fees, marketing, interconnection. Do not include any mitigation related fees in your estimate)? Please include information for one project at a time**

	Total installed cost per capacity($ per Kilowatt DC)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page] Within this estimate, how much on average is the **<u>cost of interconnection</u>**? **Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	

Floating Solar
Projects Serving Public Entities
Pollinator-Friendly Solar

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page as the above] Is this project planned to meet any of the following criteria? **Please include information for one project at a time.** [SELECT ALL THAT APPLY]

	Investment Tax Credit Eligible (PV & Storage System)	Production Tax Credit Eligible (PV & Storage System)	Investment Tax Credit Eligible (PV System only)	Production Tax Credit Eligible (PV System only)	Investment Tax Credit Eligible (Storage System only)	Production Tax Credit Eligible (Storage System only)	Foreign Entity of Concern (FEOC) Compliant	None of the Above
Ground-Mount solar	1	2	3	4	5	6	7	8
Brownfield Solar	1	2	3	4	5	6	7	8
Community Shared Solar (*Minimum 40% low income offtakers*)	1	2	3	4	5	6	7	8
Landfill Solar	1	2	3	4	5	6	7	8
Solar Canopy	1	2	3	4	5	6	7	8
Rooftop Solar	1	2	3	4	5	6	7	8
Dual-use Agricultural Solar	1	2	3	4	5	6	7	8
Floating Solar	1	2	3	4	5	6	7	8
Projects Serving Public Entities	1	2	3	4	5	6	7	8
Pollinator-Friendly Solar	1	2	3	4	5	6	7	8

PIPE IN SE=4 OPTIONS
SKIP Q8 IF SD=1

8. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** would you say that the **Cost per DC Kilowatt** that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **total installed costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

ASK Q9 IF SD=1 OTHERWISE SKIP
PIPE IN SE=5 OPTIONS

9. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** what are the estimated **total installed costs (including equipment, labor, engineering, permitting, customer acquisition, development fees, marketing, interconnection. Do not include any mitigation related fees in your estimate)? Please include information for one project at a time**

	Total installed cost per capacity($ per Kilowatt DC)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page] Within this estimate, how much on average is the **<u>cost of interconnection</u>**? **Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	

Floating Solar
Projects Serving Public Entities
Pollinator-Friendly Solar

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page as the above] Is this project planned to meet any of the following criteria? **Please include information for one project at a time.** [SELECT ALL THAT APPLY]

	Investment Tax Credit Eligible (PV & Storage System)	Production Tax Credit Eligible (PV & Storage System)	Investment Tax Credit Eligible (PV System only)	Production Tax Credit Eligible (PV System only)	Investment Tax Credit Eligible (Storage System only)	Production Tax Credit Eligible (Storage System only)	Foreign Entity of Concern (FEOC) Compliant	None of the Above
Ground-Mount solar	1	2	3	4	5	6	7	8
Brownfield Solar	1	2	3	4	5	6	7	8
Community Shared Solar (*Minimum 40% low income offtakers*)	1	2	3	4	5	6	7	8
Landfill Solar	1	2	3	4	5	6	7	8
Solar Canopy	1	2	3	4	5	6	7	8
Rooftop Solar	1	2	3	4	5	6	7	8
Dual-use Agricultural Solar	1	2	3	4	5	6	7	8
Floating Solar	1	2	3	4	5	6	7	8
Projects Serving Public Entities	1	2	3	4	5	6	7	8
Pollinator-Friendly Solar	1	2	3	4	5	6	7	8

PIPE IN SE=5 OPTIONS
SKIP Q10 IF SD=1

10. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** would you say that the **Cost per DC Kilowatt** that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **total installed costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

ASK Q11 IF SD=1 OTHERWISE SKIP
PIPE IN SE=6 OPTIONS

11. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** what are the estimated **total installed costs (including equipment, labor, engineering, permitting, customer acquisition, development fees, marketing, interconnection. Do not include any mitigation related fees in your estimate)? Please include information for one project at a time.**

	Total installed cost per capacity($ per Kilowatt DC)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page] Within this estimate, how much on average is the **<u>cost of interconnection</u>**? **Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	

Floating Solar
Projects Serving Public Entities
Pollinator-Friendly Solar

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

[same page as the above] Is this project planned to meet any of the following criteria? **Please include information for one project at a time.** [SELECT ALL THAT APPLY]

	Investment Tax Credit Eligible (PV & Storage System)	Production Tax Credit Eligible (PV & Storage System)	Investment Tax Credit Eligible (PV System only)	Production Tax Credit Eligible (PV System only)	Investment Tax Credit Eligible (Storage System only)	Production Tax Credit Eligible (Storage System only)	Foreign Entity of Concern (FEOC) Compliant	None of the Above
Ground-Mount solar	1	2	3	4	5	6	7	8
Brownfield Solar	1	2	3	4	5	6	7	8
Community Shared Solar (*Minimum 40% low income offtakers*)	1	2	3	4	5	6	7	8
Landfill Solar	1	2	3	4	5	6	7	8
Solar Canopy	1	2	3	4	5	6	7	8
Rooftop Solar	1	2	3	4	5	6	7	8
Dual-use Agricultural Solar	1	2	3	4	5	6	7	8
Floating Solar	1	2	3	4	5	6	7	8
Projects Serving Public Entities	1	2	3	4	5	6	7	8
Pollinator-Friendly Solar	1	2	3	4	5	6	7	8

PIPE IN SE=6 OPTIONS
SKIP Q12 IF SD=1

12. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** would you say that the **Cost per DC Kilowatt** that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **total installed costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)						
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

Section 2: TOTAL FIXED COSTS (O&M COST)

The next section will ask about <u>total fixed costs (PV only)</u>: annual costs associated with the operation, maintenance, and repair of the photovoltaic system over the lifetime of the project.

ASK Q13 IF SD=2 OTHERWISE SKIP
PIPE IN SE=1 OPTIONS

13. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** what are the expected **total fixed (operations and maintenance) costs?**

    You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time.

	First year fixed cost by capacity ($ per kW-year)	Average annual fixed cost by capacity over project lifetime ($ per kW-year)
Rooftop Solar		
Low-Income Residential Solar (for below 25 kW)		

[same page] Within this estimate, how much on average is the **<u>land lease cost</u>**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
Rooftop Solar	
Low-Income Residential Solar (for below 25 kW)	

PIPE IN SE=1 OPTIONS
SKIP Q14 IF SD=2

14. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt (kWdc)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about the expected **total fixed (operations and maintenance) costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Rooftop Solar **($4.50 per Kilowatt DC)**	0	1	2	3	4	5
Low-Income Residential Solar **($4.50 per Kilowatt DC)**	0	1	2	3	4	5

ASK Q15 IF SD=2 OTHERWISE SKIP
PIPE IN SE=2 OPTIONS

15. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** what are the expected **total fixed (operations and maintenance) costs?**

    You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time.

	First year fixed cost by capacity ($ per kW-year)	Average annual fixed cost by capacity over project lifetime ($ per kW-year)
Ground-Mount solar		
Brownfield Solar		
Community Shared Solar (*Minimum 40% low income offtakers*)		
Landfill Solar		
Solar Canopy		
Rooftop Solar		
Dual-use Agricultural Solar		
Floating Solar		
Projects Serving Public Entities		
Pollinator-Friendly Solar		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

PIPE IN SE=2 OPTIONS
SKIP Q16 IF SD=2

16. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt (kWdc)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about the expected **total fixed (operations and maintenance) costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

ASK Q17 IF SD=2 OTHERWISE SKIP
PIPE IN SE=3 OPTIONS

17. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** what are the expected **total fixed (operations and maintenance) costs?**

    You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time.

	First year fixed cost by capacity ($ per kW-year)	Average annual fixed cost by capacity over project lifetime ($ per kW-year)
Ground-Mount solar		
Brownfield Solar		
Community Shared Solar (*Minimum 40% low income offtakers*)		
Landfill Solar		
Solar Canopy		
Rooftop Solar		
Dual-use Agricultural Solar		
Floating Solar		
Projects Serving Public Entities		
Pollinator-Friendly Solar		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

PIPE IN SE=3 OPTIONS
SKIP Q18 IF SD=2

18. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt (kWdc)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about the expected **total fixed (operations and maintenance) costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

ASK Q19 IF SD=2 OTHERWISE SKIP
PIPE IN SE=4 OPTIONS

19. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** what are the expected **total fixed (operations and maintenance) costs?**

    You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time.

	First year fixed cost by capacity ($ per kW-year)	Average annual fixed cost by capacity over project lifetime ($ per kW-year)
Ground-Mount solar		
Brownfield Solar		
Community Shared Solar (*Minimum 40% low income offtakers*)		
Landfill Solar		
Solar Canopy		
Rooftop Solar		
Dual-use Agricultural Solar		
Floating Solar		
Projects Serving Public Entities		
Pollinator-Friendly Solar		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

PIPE IN SE=4 OPTIONS
SKIP Q20 IF SD=2

20. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt (kWdc)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about the expected **total fixed (operations and maintenance) costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

ASK Q21 IF SD=2 OTHERWISE SKIP
PIPE IN SE=5 OPTIONS

21. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** what are the expected **total fixed (operations and maintenance) costs?**

    You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time.

	First year fixed cost by capacity ($ per kW-year)	Average annual fixed cost by capacity over project lifetime ($ per kW-year)
Ground-Mount solar		
Brownfield Solar		
Community Shared Solar (*Minimum 40% low income offtakers*)		
Landfill Solar		
Solar Canopy		
Rooftop Solar		
Dual-use Agricultural Solar		
Floating Solar		
Projects Serving Public Entities		
Pollinator-Friendly Solar		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

PIPE IN SE=5 OPTIONS
SKIP Q22 IF SD=2

22. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** would you say that the **Costs per DC Kilowatt (kWdc)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about the expected **total fixed (operations and maintenance) costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

ASK Q23 IF SD=2 OTHERWISE SKIP
PIPE IN SE=6 OPTIONS

23. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** what are the expected **total fixed (operations and maintenance) costs?**

    You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time.

	First year fixed cost by capacity ($ per kW-year)	Average annual fixed cost by capacity over project lifetime ($ per kW-year)
Ground-Mount solar		
Brownfield Solar		
Community Shared Solar (*Minimum 40% low income offtakers*)		
Landfill Solar		
Solar Canopy		
Rooftop Solar		
Dual-use Agricultural Solar		
Floating Solar		
Projects Serving Public Entities		
Pollinator-Friendly Solar		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
Ground-Mount solar	
Brownfield Solar	
Community Shared Solar (*Minimum 40% low income offtakers*)	
Landfill Solar	
Solar Canopy	
Rooftop Solar	
Dual-use Agricultural Solar	
Floating Solar	
Projects Serving Public Entities	
Pollinator-Friendly Solar	

PIPE IN SE=6 OPTIONS
SKIP Q24 IF SD=2

24. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** would you say that the **Costs per DC Kilowatt (kWdc)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about the expected **total fixed (operations and maintenance) costs? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
Ground-Mount solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Brownfield Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Community Shared Solar (*Minimum 40% low income offtakers*) ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Landfill Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Solar Canopy ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Rooftop Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Dual-use Agricultural Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Floating Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5
Projects Serving Public Entities ($4.50 per Kilowatt DC)						
Pollinator-Friendly Solar ($4.50 per Kilowatt DC)	0	1	2	3	4	5

Section 3: Total Solar PV plus Energy Storage System Cost

ASK THIS BY PROJECT TYPE NOW
ASK Q25 IF SD=3 OTHERWISE SKIP
PIPE IN SF=1 OPTIONS

25. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** what are **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Total installed cost per capacity ($ per Kilowatt DC)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	

100% of Nameplate (kW), 4-hour duration
100% of Nameplate (kW), 6-hour duration

[same page] Will this project be eligible for the federal investment or production tax credit?

a. Yes
b. No

[same page] Will this project meet Foreign Entity of Concern (FEOC) requirements?

a. Yes
b. No

PIPE IN SF=1 OPTIONS
SKIP Q26 IF SD=3

26. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q27 IF SD=3 OTHERWISE SKIP
PIPE IN SF=2 OPTIONS

27. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** what are **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Total installed cost per capacity ($ per Kilowatt DC)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	

100% of Nameplate (kW), 4-hour duration
100% of Nameplate (kW), 6-hour duration

[same page] Will this project be eligible for the federal investment or production tax credit?

c. Yes
d. No

[same page] Will this project meet Foreign Entity of Concern (FEOC) requirements?

c. Yes
d. No

PIPE IN SF=2 OPTIONS
SKIP Q28 IF SD=3

28. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q29 IF SD=3 OTHERWISE SKIP
PIPE IN SF=3 OPTIONS

29. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** what are **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Total installed cost per capacity ($ per Kilowatt DC)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	

100% of Nameplate (kW), 4-hour duration
100% of Nameplate (kW), 6-hour duration

[same page] Will this project be eligible for the federal investment or production tax credit?

e. Yes
f. No

[same page] Will this project meet Foreign Entity of Concern (FEOC) requirements?

e. Yes
f. No

PIPE IN SF=3 OPTIONS
SKIP Q30 IF SD=3

30. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q31 IF SD=3 OTHERWISE SKIP
PIPE IN SF=4 OPTIONS

31. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** what are **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Total installed cost per capacity ($ per Kilowatt DC)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	

100% of Nameplate (kW), 4-hour duration
100% of Nameplate (kW), 6-hour duration

[same page] Will this project be eligible for the federal investment or production tax credit?

g. Yes
h. No

[same page] Will this project meet Foreign Entity of Concern (FEOC) requirements?

g. Yes
h. No

PIPE IN SF=4 OPTIONS
SKIP Q32 IF SD=3

32. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q33 IF SD=3 OTHERWISE SKIP
PIPE IN SF=5 OPTIONS

33. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** what are **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Total installed cost per capacity ($ per Kilowatt DC)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	

100% of Nameplate (kW), 4-hour duration
100% of Nameplate (kW), 6-hour duration

[same page] Will this project be eligible for the federal investment or production tax credit?

i. Yes
j. No

[same page] Will this project meet Foreign Entity of Concern (FEOC) requirements?

i. Yes
j. No

PIPE IN SF=5 OPTIONS
SKIP Q34 IF SD=3

34. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** would you say that the **Costs per DC Kilowatt** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q35 IF SD=3 OTHERWISE SKIP
PIPE IN SF=6 OPTIONS

35. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** what are **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Total installed cost per capacity ($ per Kilowatt DC)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of interconnection**? **Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

[same page] Within this estimate, how much on average is the **cost of development fees (this includes development compensation for project oversight and management, securing financing, etc. but does NOT include development impact fees)? Please include information for one project at a time.**

	Total $ Amount
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	

100% of Nameplate (kW), 4-hour duration
100% of Nameplate (kW), 6-hour duration

[same page] Will this project be eligible for the federal investment or production tax credit?

k. Yes
l. No

[same page] Will this project meet Foreign Entity of Concern (FEOC) requirements?

k. Yes
l. No

PIPE IN SF=6 OPTIONS
SKIP Q36 IF SD=3

36. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** would you say that the **Costs per DC Kilowatt** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected total solar photovoltaic plus energy storage installed cost? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)						
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

Section 4: Total Energy Storage Fixed Cost

INCLUDE DEFINITION OF WHAT THIS INCLUDES, POSSIBLY CHANGE HEADING TO TOTAL O&M, INCLUDING REPLACEMENT COSTS HERE. ASK THIS BY PROJECT TYPE NOW

ASK Q37 IF SD=4 OTHERWISE SKIP
PIPE IN SF=1 OPTIONS

37. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** what are **the expected incremental total annual operations and maintenance cost of adding an energy storage system?**

You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time

	Battery Storage only first year fixed cost by battery capacity ($ per kWh)	Battery Storage only average annual fixed cost by battery capacity over project lifetime ($ per kWh)
25% of PV Nameplate (kW), 2-hour duration		
25% of Nameplate (kW), 4-hour duration		
25% of Nameplate (kW), 6-hour duration		
50% of PV Nameplate (kW), 2-hour duration		
50% of PV Nameplate (kW), 4-hour duration		
50% of PV Nameplate (kW), 6-hour duration		
100% of PV Nameplate (kW), 2-hour duration		
100% of Nameplate (kW), 4-hour duration		

100% of Nameplate (kW), 6-hour duration

[same page] Within this estimate, how much on average is the **<u>land lease cost</u>**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

PIPE IN SF=1 OPTIONS
SKIP Q38 IF SD=4

38. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc residential project (≤ 25 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt hour (kWh)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected incremental fixed cost of adding an energy storage system? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q39 IF SD=4 OTHERWISE SKIP
PIPE IN SF=2 OPTIONS

39. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** what are **the expected incremental fixed cost of adding an energy storage system?**

You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time

	Battery Storage only first year fixed cost by battery capacity ($ per kWh)	Battery Storage only average annual fixed cost by battery capacity over project lifetime ($ per kWh)
25% of PV Nameplate (kW), 2-hour duration		
25% of Nameplate (kW), 4-hour duration		
25% of Nameplate (kW), 6-hour duration		
50% of PV Nameplate (kW), 2-hour duration		
50% of PV Nameplate (kW), 4-hour duration		
50% of PV Nameplate (kW), 6-hour duration		
100% of PV Nameplate (kW), 2-hour duration		
100% of Nameplate (kW), 4-hour duration		
100% of Nameplate (kW), 6-hour duration		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

PIPE IN SF=2 OPTIONS
SKIP Q40 IF SD=4

40. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt hour (kWh)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected incremental fixed cost of adding an energy storage system? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q41 IF SD=4 OTHERWISE SKIP
PIPE IN SF=3 OPTIONS

41. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** what are **the expected incremental fixed cost of adding an energy storage system?**

You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time

	Battery Storage only first year fixed cost by battery capacity ($ per kWh)	Battery Storage only average annual fixed cost by battery capacity over project lifetime ($ per kWh)
25% of PV Nameplate (kW), 2-hour duration		
25% of Nameplate (kW), 4-hour duration		
25% of Nameplate (kW), 6-hour duration		
50% of PV Nameplate (kW), 2-hour duration		
50% of PV Nameplate (kW), 4-hour duration		
50% of PV Nameplate (kW), 6-hour duration		
100% of PV Nameplate (kW), 2-hour duration		
100% of Nameplate (kW), 4-hour duration		
100% of Nameplate (kW), 6-hour duration		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

PIPE IN SF=3 OPTIONS
SKIP Q42 IF SD=4

42. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>27.5-275 kWdc projects (>25-250 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt hour (kWh)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected incremental fixed cost of adding an energy storage system? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q43 IF SD=4 OTHERWISE SKIP
PIPE IN SF=4 OPTIONS

43. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** what are **the expected incremental fixed cost of adding an energy storage system?**

You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time

	Battery Storage only first year fixed cost by battery capacity ($ per kWh)	Battery Storage only average annual fixed cost by battery capacity over project lifetime ($ per kWh)
25% of PV Nameplate (kW), 2-hour duration		
25% of Nameplate (kW), 4-hour duration		
25% of Nameplate (kW), 6-hour duration		
50% of PV Nameplate (kW), 2-hour duration		
50% of PV Nameplate (kW), 4-hour duration		
50% of PV Nameplate (kW), 6-hour duration		
100% of PV Nameplate (kW), 2-hour duration		
100% of Nameplate (kW), 4-hour duration		
100% of Nameplate (kW), 6-hour duration		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

PIPE IN SF=4 OPTIONS
SKIP Q44 IF SD=4

44. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>275-600 kWdc projects (>250-500 kWac) that you are developing,** would you say that the **Costs per DC Kilowatt hour (kWh)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected incremental fixed cost of adding an energy storage system? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q45 IF SD=4 OTHERWISE SKIP
PIPE IN SF=5 OPTIONS

45. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** what are **the expected incremental fixed cost of adding an energy storage system?**

You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time

	Battery Storage only first year fixed cost by battery capacity ($ per kWh)	Battery Storage only average annual fixed cost by battery capacity over project lifetime ($ per kWh)
25% of PV Nameplate (kW), 2-hour duration		
25% of Nameplate (kW), 4-hour duration		
25% of Nameplate (kW), 6-hour duration		
50% of PV Nameplate (kW), 2-hour duration		
50% of PV Nameplate (kW), 4-hour duration		
50% of PV Nameplate (kW), 6-hour duration		
100% of PV Nameplate (kW), 2-hour duration		
100% of Nameplate (kW), 4-hour duration		
100% of Nameplate (kW), 6-hour duration		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

PIPE IN SF=5 OPTIONS
SKIP Q46 IF SD=4

46. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac) that you are developing,** would you say that the **Costs per DC Kilowatt hour (kWh)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected incremental fixed cost of adding an energy storage system? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

ASK Q47 IF SD=4 OTHERWISE SKIP
PIPE IN SF=6 OPTIONS

47. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** what are **the expected incremental fixed cost of adding an energy storage system?**

You may enter either a first year estimate, an average annual cost over the project's lifetime, or both. Please include information for one project at a time

	Battery Storage only first year fixed cost by battery capacity ($ per kWh)	Battery Storage only average annual fixed cost by battery capacity over project lifetime ($ per kWh)
25% of PV Nameplate (kW), 2-hour duration		
25% of Nameplate (kW), 4-hour duration		
25% of Nameplate (kW), 6-hour duration		
50% of PV Nameplate (kW), 2-hour duration		
50% of PV Nameplate (kW), 4-hour duration		
50% of PV Nameplate (kW), 6-hour duration		
100% of PV Nameplate (kW), 2-hour duration		
100% of Nameplate (kW), 4-hour duration		
100% of Nameplate (kW), 6-hour duration		

[same page] Within this estimate, how much on average is the **land lease cost**? **Please include information for one project at a time.**

	Total fixed cost by capacity ($ per kW-year)
25% of PV Nameplate (kW), 2-hour duration	
25% of Nameplate (kW), 4-hour duration	
25% of Nameplate (kW), 6-hour duration	
50% of PV Nameplate (kW), 2-hour duration	
50% of PV Nameplate (kW), 4-hour duration	
50% of PV Nameplate (kW), 6-hour duration	
100% of PV Nameplate (kW), 2-hour duration	
100% of Nameplate (kW), 4-hour duration	
100% of Nameplate (kW), 6-hour duration	

PIPE IN SF=6 OPTIONS
SKIP Q48 IF SD=4

48. The following table includes the project types your firm works on in Massachusetts and that may be eligible for the SMART 2027 program year. For a **>1.2-6.5 MWdc projects (>1-5 MWac) that you are developing,** would you say that the **Costs per DC Kilowatt hour (kWh)** starting costs that accompany each project type below are accurate, slightly higher (10-20%), somewhat higher (21-50%), or much higher (51% or more) when thinking about **the expected incremental fixed cost of adding an energy storage system? Please include information for one project at a time.**

	Lower	Accurate	Slightly higher (20% or less)	Somewhat higher (21-50%)	Much higher (51% or more)	Don't know/ Refused
25% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
25% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
50% of PV Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of PV Nameplate (kW), 2-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 4-hour duration (4.50 per kWhdc)	0	1	2	3	4	5
100% of Nameplate (kW), 6-hour duration (4.50 per kWhdc)	0	1	2	3	4	5

Section 5: Solar Photovoltaic Financing Data

ASK Q49 IF SD=7 OTHERWISE SKIP
PIPE IN SE OPTIONS

49. The following table includes the project sizes your firm works on in Massachusetts. Please enter **the expected financing terms for projects that may be eligible for the 2027 SMART program year.**

	Percentage of capital stack that is debt financed (via loan)	Loan term (years)	Interest Rate (% per year)	Internal Rate of Return (ranges or estimates are acceptable)	Don't know/ Refused
≤ 27.5 kWdc residential project (≤ 25 kWac)					
≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac)					
>27.5-275 kWdc projects (>25-250 kWac) that					
>275-600 kWdc projects (>250-500 kWac)					
>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac)					
>1.2-6.5 MWdc projects (>1-5 MWac)					
Low Income Solar Tariff Generation Units					

Section 6: Solar Photovoltaic Ownership

ASK Q50 IF SE=1

50. Consider a residential photovoltaic project (≤ 27.5 kWdc residential project (≤ 25 kWac) please enter **the typical financing terms** for each ownership structure **for projects that may be eligible for the 2027 SMART program year.**

	Owned by the homeowner and financed through a local community bank	Owned, installed and maintained by a 3rd-party with nationally-based investors and with a lease or power purchase agreement with the homeowner	Don't know/ Refused
Percentage of capital stack that is debt financed (via loan)	*	*	*
Loan term (years)	*	*	*
Interest Rate (% per year)	*	*	*
Don't know/ Refused	*	*	*

ASK Q51 IF SE=2 OR 3 OR 4 OR 5 OR 6

51. Consider a non-residential and/or commercial and industrial scale photovoltaic project, please enter **the expected financing terms** for each ownership structure **for projects that may be eligible for the 2027 SMART program year.**

	Non-residential project, owned by a 3rd Party National Based Investor	Non-residential project, Local Investor Owned	Non-residential project, Local Investor owned by a tax-exempt entity	Don't know/ Refused
Debt Fraction/ Permanent Financing (%)	*	*	*	*
Loan term (years)	*	*	*	*
Interest Rate (% per year)	*	*	*	*
Internal Rate of Return (ranges or estimates are acceptable)				
Don't know/ Refused	*	*	*	*

Section 7: Closing Questions

52. Does your company work more often with residential, commercial/industrial, or utility scale photovoltaic projects?
    a. Residential
    b. Commercial/Industrial
    c. Utility
    d. All about equally
    e. Don't know/refused

53. Including all full-time and part-time employees, how many **permanent** (non-contract or temporary) employees work at your current location? Please include any employees working remotely who report out of this location.

    Record # of employees _____

    SKIP Q54 IF SE = 1 ONLY

54. For projects greater than 25kWac, how many solar projects at your organization do you anticipate will be ready to submit an application to the SMART program during the following timeframes? *Please only include projects will be application-ready, meaning they have site control, right to construct, an executed interconnection agreement, and are prepared to submit within the program guidelines.*

	Total number of Projects	Total Capacity (kWdc)
Please enter the number of projects and capacity of application-ready projects **in 2026**:		
Please enter the number of projects and capacity of application-ready projects **in 2027**:		
Please enter the number of projects and capacity of application-ready projects **in 2028**:		

55. In the next two years, how will the early phase out of Inflation Reduction Act tax credits through the One Big Beautiful Bill affect your organization's development of solar projects in Massachusetts?

    a. A significant portion of planned projects (75% to 100% of projects) will likely be cancelled
    b. Most of our planned projects (50% to 74% of projects) will likely be cancelled
    c. Some of our planned projects (25% to 49% of projects) will likely be cancelled
    d. A small amount of our planned projects (less than 25% of projects) will likely be cancelled
    e. We would not be affected or cancel any of our projects
    f. We will have more projects in the next one to two years
    g. Don't know/ Refused

56. On average, how long does it take your organization to develop solar projects of the following SMART Program size categories, from initial site identification through permission to operate?

ASK BY PROJECT SIZE AND PROJECT TYPE

	Less than three months	Three to six months	Six months to one year	More than 1 year but less than 3 years	Between 3 to 5 years	Greater than 5 years
≤ 27.5 kWdc small commercial or industrial projects (≤ 25 kWac)	1	2	3	4	5	6
>27.5-275 kWdc projects (>25-250 kWac) that	1	2	3	4	5	6
>275-600 kWdc projects (>250-500 kWac)	1	2	3	4	5	6
>600 kW-1.2 MWdc projects (>500 kW-1.0 MWac)	1	2	3	4	5	6
>1.2-6.5 MWdc projects (>1-5 MWac)	1	2	3	4	5	6

57. What are the most significant factors that impact your project development timelines from initial site identification through permission to operate?

    _____