

NYGB
Financial Market Transformation Study
Appendices
Final

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APPENDIX A. METHODS

Overview of Approach

NYSERDA commissioned this first independent NY Green Bank Financial Market Transformation Study (the “**Study**”) of the effect that NYGB’s activities have had on clean energy financing markets in NYS. This report (the “**Report**”) summarizes the results of the first phase of the Study, which was conducted between September 2018 and February 2019. NYSERDA plans to conduct subsequent updates to measure change over time of NYGB’s impact on these markets.

Working with NYGB, NYSERDA staff developed a study approach designed to assess the influence of NYGB’s early activities on the following characteristics of the clean energy finance markets in New York State (NYS):

1. Knowledge of and confidence in clean energy investments among financial institutions;
2. Number and type of financial institutions active in clean energy markets;
3. Availability of favorable terms in financing offered to clean energy projects and companies;
4. Pace of clean energy project deployment; and
5. Volume of clean energy project financing.

NYSERDA and NYGB developed a set of hypotheses on how NYGB’s activities would affect these market characteristics over time. NYSERDA and NYGB also specified a set of market impact indicators (i.e., quantitative or qualitative measures of market conditions one would expect to observe if NYGB was influencing the market as hypothesized). The Study focused on gathering and assessing the strength of evidence of changes in the NYS clean energy financing markets and NYGB’s influence on those changes, using the hypotheses and market indicators as a framework.

DNV GL divided the Study into two complementary work streams.

Baseline Assessment. DNV GL appraised the state of the market during the period 2015 – 2018 (“the **Study Period**”), representing conditions before NYGB financing activity began in earnest and as it ramped up, using the set of 14 indicators specified by NYSERDA and NYGB as part of the Study plan. The baseline assessment (“**Baseline Assessment**”) drew primarily on the results of surveys of developers and financiers conducted for the Study, supplemented by review of

internal NYGB documents and an array of secondary sources. The Baseline Assessment was intended to provide a structured snapshot of market conditions that can be replicated in subsequent updates of the Study designed to gauge market progress over time.

Attribution Analysis. The attribution analysis (“**Attribution Analysis**”) addressed the questions: How and to what extent did NYGB’s activities contribute to changes observed in the clean energy finance market during the Study Period? The key challenge in answering these questions was to appropriately characterize and weigh factors *other than NYGB’s activities* that shaped and influenced the business practices of participants in those markets. Many factors influenced the activities of clean energy project developers: changes in costs, energy prices, energy market regulation, tax and general economic policy. Financiers were influenced by a similar set of factors, as well as by trends in the costs of capital, financial market regulation, and developments in industries and regions that offered alternate investment opportunities.

To capture these interactions, DNV GL prepared case studies of NYGB transactions involving counterparties in the residential solar, small-scale utility solar, and commercial energy efficiency industries.¹ These case studies placed NYGB’s transactions in the context of the markets they were designed to influence. This approach provided a framework to present evidence of change in the market indicators, to identify the potential influences on those changes, and to assess the relative importance of NYGB’s activities among those influences. The case studies drew on the sources used for the Baseline Assessment, supplemented by analysis of market statistics, review of internal NYGB transaction documents, annual reports, Form 10-Ks filed with the Securities and Exchange Commission and other reports for public companies in NYGB’s portfolios, and a wide range of industry, government, and academic publications.²

The main report of this study presents the results of the Baseline Assessment and Attribution Analysis are integrated into an assessment of the strength of evidence of NYGB’s influence on 14 indicators of market progress formulated by NYSERDA and NYGB.

¹ In this study, the term “community solar” refers to solar PV projects in the category defined by the New York Public Service Commission’s “Community Distributed Generation” designation. These are installations up to 10 MW in capacity that serve multiple end-use customers through various retail aggregation approaches.





“Commercial/Industrial Solar” refers to solar PV projects in the same size category that serve a single end-use customer or “off-taker” under a long-term contract. In other states and in the energy industry press and literature, these two groups of projects are frequently grouped together under the rubric of “community solar”.

² See Appendix I for a full list of sources.

Data Collection

Figure A-1 summarizes the data collection activities conducted by DNV GL.

Figure A-1. Summary of Data Collection Activities

			
Review of NY Green Bank Transaction Files	Web Surveys	Secondary Research	Case Studies
<p>Data Reviewed:</p> <ul style="list-style-type: none"> • NY Green Bank Transaction Documents • Transaction Profiles • Transaction Approval Memos • Green Light Memos 	<p>Sample Data Sources:</p> <ul style="list-style-type: none"> • NY Green Bank Contacts • DNV GL/CESI Contacts • INFOGroup <p>Surveys Completed</p> <ul style="list-style-type: none"> • Finance Participants: 6 • Finance Non-Participants: 46 • Developer Participants: 6 • Developer Non-Participants: 56 	<p>Data Reviewed:</p> <ul style="list-style-type: none"> • DNV GL Databases • US DOE/EIA Reports • LBNL/ NREL Studies • Bloomberg New Energy Industry and Industry Journals • NY Green Bank and NYSERDA Studies 	<p>Case Studies Completed:</p> <ul style="list-style-type: none"> • Energy Efficiency: Northport and HHAR • Solar: BQ-Energy and Mosaic <p>Data Collected:</p> <ul style="list-style-type: none"> • Interviews with NY Green Bank senior management and counterparty participants • Secondary Research to supplement interviews

DNV GL collected data from four principal sources.

1. **Transaction Profiles.** Transaction profiles provided the basis for characterizing NYGB's portfolio and understanding the details of each transaction.
2. **Web Surveys.** Web surveys were conducted with members of the financing community active in the clean energy market and developers of clean energy projects. The surveys included both Participants in NYGB transactions and Non-Participants. DNV GL used Form.com to administer the surveys. Table A-1 shows the population, sample sizes and number of completes for each survey.

Table A-1: Population and Sample Sizes for Surveys³⁴

	Participants		Non-Participants	
	Developers	Financial Institutions	Developers	Financial Institutions
Population Count (Sample List)	23	22	551	1,240
Target for Completed Surveys (Sample Size)	9	18	67	67
Surveys Completed	6	6	56	46
Response Rate	26%	27%	10%	4%
Target %	67%	33%	84%	67%

Table A-2 shows the types of projects completed or invested in by the respondents and the distribution of financing products utilized by respondents.

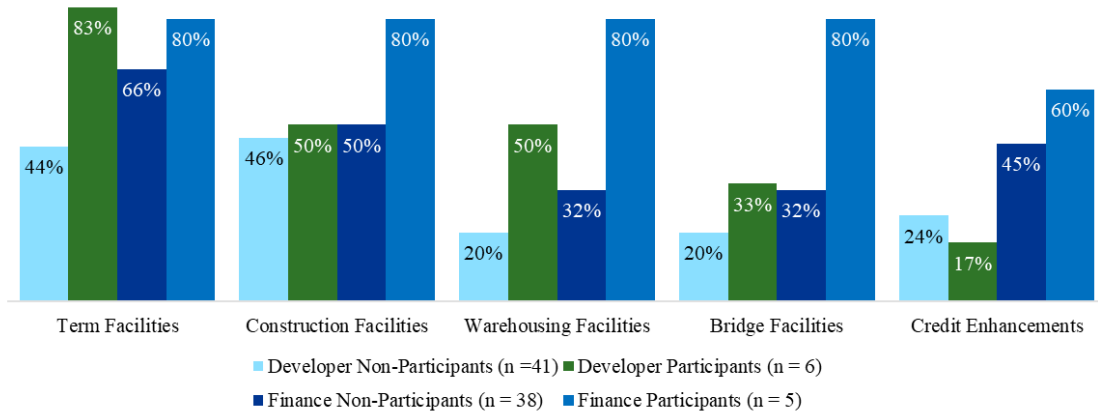
Table A-2: Types of Projects Completed or Invested in by Respondents

Project Type	Developer Non-Participant	Developer Participant	Finance Non-Participant	Finance Participant
Bioenergy	5	0	6	2
CHP	6	0	10	3
Electric Vehicle	8	2	5	0
Energy Efficiency	15	2	17	3
Energy Storage	15	4	8	2
Microgrids	6	0	5	0
PV-CI	23	1	24	4
PV-Community	12	1	15	3
PV-Residential	7	1	18	4
PV-Utility	18	3	18	4
Wind-Offshore	2	0	5	3
Wind-Onshore Small	3	0	5	3
Wind-Onshore Utility	11	2	13	4
Other	0	0	7	0
None	1	0	1	0

³ Response rate = the number of respondents who completed the survey/population count (sample list)

⁴ Target percentage = the number of respondents who completed the survey/target for completed surveys (sample size)

Figure A-2: Percent of Respondents Utilizing Financial Products



3. Secondary Research. DNV GL reviewed a wide range of secondary resources to support the market transformation Study. These materials were particularly useful in providing background and context to support the development of the case studies. Additional sources were reviewed for background; a full listing can be found in Appendix I.
4. Case Studies. In-depth case studies were conducted for four NYGB transactions: two Bank of America transactions (Northport/East Northport Central School District and Hebrew Homes and Riverdale) and two solar transactions (Mosaic and BQ Energy (“BQE”). The case studies provided an in-depth analysis of the specific transactions and included interviews with key stakeholders.

APPENDIX B. GLOSSARY OF TERMS⁵

Bridge Loan: A short-term loan used until a company secures permanent financing for a project. It allows the borrower to meet current obligations by providing immediate cash flow. Bridge loans are generally short term, up to one year, have relatively high interest rates and are usually backed by some form of collateral.

Construction Loans: Short term financing designed to cover the cost of project construction, disbursed as needed or according to a prescribed schedule based on achievement of project milestones. Construction loans are paid off from the proceeds of permanent project financing.

Credit Enhancement: A technique to reduce the credit risk or default risk of a borrower by providing a third-party guarantee, additional collateral or insurance to a lender.

Power Purchase Agreement: A contract between two parties, one which generates electricity (the seller) and one which is looking to purchase electricity (the buyer). The PPA defines all of the commercial terms for the sale of electricity between the two parties, including when the project will begin commercial operation, schedule for delivery of electricity, penalties for under delivery, payment terms, and termination. A PPA is the principal agreement that defines the revenue and credit quality of a generating project and is thus a key instrument of project finance.

Secondary Market: A market where an investor purchases securities from another investor rather than the initial seller or issuer of the securities.

Securities: Certificates or other financial instruments that have monetary value and can be traded. Securities are generally classified as either equity securities, such as stocks and debt securities, such as bonds.

Securitization: The practice of pooling various types of contractual debt and selling their related cash flows to third party investors as securities. Investors are repaid from the principal and interest cash flows collected from the underlying debt and redistributed through the capital structure of the new financing. Securities backed by mortgage receivables are called mortgage-backed securities (MBS), while those backed by other types of receivables are asset-backed securities (ABS).

Term Loan: A loan for a specific amount that has a specified repayment schedule and either a fixed or variable interest rate.

Third-party Ownership: A contractual arrangement under which a facility owner can obtain the services of generation or energy efficiency technologies installed on the owner's premises without undertaking the expense or debt associated with purchasing those assets. A party other than the facility owner or equipment installer (a third party) retains ownership of the equipment and recovers the cost of purchasing and installing the equipment through one of several commercial arrangements, including: power purchase agreements, equipment leases, or energy performance contracts.

⁵ Sources: Investopedia and Wikipedia.

Warehouse Credit Facility: A line of credit given to a loan originator to pay fund loans to multiple borrowers for a specified purpose or type of asset. The loan is repaid using the interest and principal payments from the multiple borrowers or through sale of the loans into the secondary market, either directly or through securitization.

APPENDIX C. MARKET INDICATORS AND OUTCOMES BY PRODUCT TYPE

Product Type	NYGB Investment		Size of Developments		Status of Projects		Estimated Lifetime Impact (high)	
	Number of Financings	Committed Capital	Number of Projects/Measures	Estimated Dollar Value of Development	Projects Completed	Pending Projects	Clean Energy Generated (MWh)	Clean Energy Generation Capacity (MW)
Letter of Credit	44	\$ 5,500,000	559	\$ 75,000,000	24,516	9,144	616,000	35.00
Term Loan		\$ 403,085,000	11,851	\$ 1,067,610,718			12,887,178	436.57
Other Equity Instrument		\$ 20,000,000	265	\$ 2,383,991			192	0.02
Revolver		\$ 209,000,000	20,985	\$ 604,661,169			4,758,490	160.80
Total	44	\$ 637,585,000	33,660	\$ 1,749,655,878	24,516	9,144	18,261,860	632.4

Source: Data provided by NYGB on March 29, 2019.

APPENDIX D. FINANCIAL PARTICIPANT SURVEY

NYGB
Financial Participant Survey
November 2018

Market Indicator	Question
Screening Questions	
Participant screeners.	SC1-SC5
Awareness of Clean Energy Projects and NYGB and Reasons for Participation	
Awareness of NYGB.	A1
How learned about NYGB and prior familiarity with clean energy benefits.	A2-A3
What features of NYGB led to your participation?	A4
Awareness of other NYGB offerings. Offering of similar services in other transactions.	A5-A6
Would you participate in NYGB again? Would you recommend NYGB to others?	A7-A8
Description of Financial Stakeholder	
How long has stakeholder's firm been in this market?	DP1
What type of technologies/projects considered/completed for investing? Type of products used in clean energy investing.	DP2-DP4
Number of transactions in 2018 and in 2013 (or first year of investment).	DP5
Average amount of investment for clean energy projects in 2013 (or first year of investment) and 2018. How has deal flow changed?	DP6-DP7
Expectation of change in the share of clean energy technologies in portfolio? Why?	DP8-DP9
Availability of financial performance data.	DP10-DP11
Types of Investment Products	
What financing structures are they currently using and 2013 (or first year of investing)?	TY1
How have the composition changed between 2013 (or first year of investing) and 2018?	TY2
Investment Process	
State of project development cycle the stakeholder enters 2013 versus 2018.	P1-P2
Reason for difference.	P3
Market Barriers	
Significance of barrier or market influence 2013 (or first year of investment) versus 2018.	MB1-MB2
Unaware Participants (A1=2)	
Module with non-participant focused questions for the categories listed above.	

Screening Questions

For this survey, we are contacting members of the financial community who are aware of and have experience with the financing of clean energy projects. Clean energy transactions refer to financial transactions or investment agreements or arrangements associated with the deployment of renewable energy technologies, (e.g., wind, solar, bioenergy), energy efficiency measures, microgrids, sustainable transportation, and energy storage projects.

When responding, if you want to return to the previous questions, please use the back arrow within the survey and not the browser command. By clicking the save button, you will be able to return to the survey if you are unable to complete it in your first attempt.

Please enter the 4-digit survey identification number as referenced in NYSERDA's email. If you are unable to find the number, please call DNV GL at (707) 820-4400 or email: nygreenbank@dnvgl.com

Enter 4-digit survey ID here:

- SC1. Are you aware of or do you have experience with financing of clean energy projects related to one or more of the types of clean energy technology categories listed below
- Renewable energy technologies, (e.g., bioenergy, solar PV, wind)
 - Energy efficiency
 - Electric vehicle infrastructure
 - Microgrids
 - Energy storage projects

	Response	Survey logic
1	Yes	Go to SC3
2	No	Go to SC2
3	Don't know	END SURVEY
4	Prefer not to answer	

- SC2. Can you please provide the contact information for the person at your firm who is aware of or has experience with financing clean energy projects?

	Response	Survey logic
1	Yes [Please provide the contact information for the person at your firm] [TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	
3	Don't know	
4	Prefer not to answer	

SC3. Are you involved in financing clean energy projects?

	Response	Survey logic
1	Yes	Go to SC5
2	No	Go to SC4
3	Don't know	END SURVEY
4	Prefer not to answer	

SC4. Can you please provide the contact information for the person at your firm who is involved with financing clean energy projects?

	Response	Survey logic
1	Yes SC4a. Can you please provide an alternate point of contact: [TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	

SC5. Does your firm finance clean energy projects in states other than New York State?

	Response	Survey logic
1	Yes	Go to A1
2	No	
3	Don't know	
4	Prefer not to answer	

Awareness of Clean Energy Finance and NYGB

[Programming Note]

A1 will identify the respondents who participated in NYGB transactions but were unaware of NYGB and/or the role played by NYGB. Respondents where A1=2 will skip to the UP branch of the survey.

A1. Are you aware of NYGB and its activities in the market place?

	Response	Survey logic
1	[Yes]	Go to A2
2	[No]	Go to DP1

A2. How did you first learn of NYGB? [pick one with other option]

	Response	Survey logic
1	NYSERDA [Checkbox]	Go to A3
2	NYGB's website, or other information provided by NYGB (e.g., RFI, RFP, etc.) [Checkbox]	
3	Events that NYGB hosted or participated in. [Checkbox]	
4	Colleagues within my firm [Checkbox]	
5	Lender and/or investor outside of my firm [Checkbox]	
6	Project developer, ESCO, technology vendor [Checkbox]	
7	General media (social media, articles, interviews) [Checkbox]	
8	Industry trade group [Checkbox]	
9	NYS Governor's Office, NYSERDA, or NYGB announcements [Checkbox]	
10	Don't recall [Checkbox]	
11	Other, specify: [Textbox]	

A3. Before working with NYGB, how familiar was your firm with NYGB's services and financing products?

	Response	Survey logic
1	Familiar	A4
2	Somewhat familiar	
3	Not familiar	Go to DP1
4	Don't know	
5	Prefer not to answer	

A4. What features of NYGB’s services and products led to your firm’s engagement with NYGB?

	Response	Survey logic
1	Construction facilities [Checkbox]	Go to A5
2	Bridge facilities [Checkbox]	
3	Term facilities [Checkbox]	
4	Warehousing/aggregation facilities [Checkbox]	
5	Credit enhancements [Checkbox]	
6	Not familiar with specific services or products	Go to A6
7	Other [Textbox]	Go to A5

A5. Are you aware of NYGB product offerings beyond those utilized by your firm?

	Response	Survey logic
1	[Yes]	Go to A6
2	[No]	
3	Don’t know	
4	Prefer not to answer	

A6. Because of your firm’s experience with NYGB, has your firm offered similar financing services and products for other transactions not involving NYGB?

	Response	Survey logic
1	[Yes]	Go to A7
2	[No]	
3	Don’t know	
4	Prefer not to answer	

A7. How likely is your firm to engage with NYGB to finance additional clean energy projects in the future?

	Response	Survey logic
1	Not at all likely	Go to A8 if A7 ≠ 4,5 else Go to A9
2	Somewhat likely	
3	Extremely likely	
4	Don’t know	
5	Prefer not to answer	

A8. Please explain.

	Response	Survey logic
1	[Textbox]	Go to A9

A9. How likely is your firm to recommend NYGB to others in the financial community who are considering investing in the clean energy market?

	Response	Survey logic
1	Not at all likely	Go to DP1
2	Somewhat likely	
3	Extremely likely	
4	Don't know	
5	Prefer not to answer	

Description of Financial Stakeholder and Investment Portfolio

DP1. Select the earliest year, from the options presented below, that best represents when your firm first became active in the following two activities:

		Year first active
DP1.A1.C1	Infrastructure or energy financing, generally	2013, 2014, 2015, 2016 2017, 2018
		Prior to 2013
DP1.A1.C2	Clean energy asset financing or investing, specifically	2013, 2014, 2015, 2016 2017, 2018
		Prior to 2013

[Programming Note]

DP1.A1 AND DP1.A2 WILL BE PIPPED INTO QUESTIONS THAT PREVIOUS USED YEAR "SINCE 2013".

If respondent's firm has been in industry less than 5 years, future questions referring to 2013 will be asked of 2018 - response to DP1.

For DP3, include text box for each instance where DP2 (considered).

DP2. What types of clean energy technologies and projects has your firm considered investing in and what types of technologies and projects has your firm completed a transaction since [DP1.A1.C2]?

DP3. Why did your firm not complete the transaction?

		<PICK ONE> Considered / completed transaction (DP2)	<If considered then ask> Why did your firm not complete the transaction? (DP3)
1	Bioenergy	[list option]	
2	Combined Heat & Power	[list option]	
3	Electric Vehicle Infrastructure	[list option]	
4	Energy Efficiency	[list option]	
5	Energy Storage	[list option]	
6	Microgrids	[list option]	
	Solar PV		
7	Commercial & Industrial	[list option]	
8	Community Distributed Generation	[list option]	
9	Residential	[list option]	
10	Utility-scale	[list option]	
	Wind	[list option]	
11	Offshore	[list option]	
12	Small-scale Onshore	[list option]	
13	Utility-scale Onshore	[list option]	
14	Other	[Textbox]	
15	None of these	[list option]	

DP4. For each type of clean energy technology or project your firm has invested in since [DP1.A2.C2], did your firm utilize any of the following products? Check all that apply.

	Response
1	Construction facilities [Checkbox]
2	Bridge facilities [Checkbox]
3	Term facilities [Checkbox]
4	Warehousing/aggregation facilities [Checkbox]
5	Credit enhancements [Checkbox]
6	Not familiar with specific services or products [exclusive]
7	Other [Textbox]
8	Don't know

DP5. In the past 12 months, approximately how many transactions did your firm close, by category? [Ranges are acceptable]

	Total number of transactions (#)	Past 12 months
1	All infrastructure or energy financing, generally	
2	All infrastructure or energy financing in New York State, generally	
3	All clean energy asset financing or investing, specifically	
4	All clean energy asset financing or investing in New York State, specifically	

DP6. What was the approximate average dollar value of those transactions?

	Average dollar value of transactions (\$)	Past 12 months
1	All infrastructure or energy financing, generally	\$
2	All infrastructure or energy financing in New York State, generally	\$
3	All clean energy asset financing or investing, specifically	\$
4	All clean energy asset financing or investing in New York State, specifically	\$

DP7. How has your firm’s annual deal flow changed in aggregate dollar value, from [DP1.A1.C1] to 2018? For example, your firm’s project finance transactions have increased in value by 20% in the period with the value of clean energy transactions increasing by 35% in the same period.

	Transaction type	% Change
1	All infrastructure or energy financing , generally	[Dropdown list increased by/decreased by/stayed the same]
2	All infrastructure or energy financing in New York State , generally	[Dropdown list increased by/decreased by/stayed the same]
3	All clean energy asset financing or investing, specifically	[Dropdown list increased by/decreased by/stayed the same]
4	All clean energy asset financing or investing in New York State , specifically	[Dropdown list increased by/decreased by/stayed the same]

[Programming Note]

If D7 .4 = increase then “increased” in DP7a and DP7b.
 If DP7.4 = stay the same, then skip DP7a and DP7b.
 If DP7.4 = decrease then “decreased” in DP7a and DP7b.

DP7a. What was the main reason why the aggregate value of clean energy-related transactions in your firm’s annual deal flow in New York State [increased / decreased] between [DP1.A1.C1] and 2018? [Pick one]

	Reason(s)	Main reason (DP7a) – limited to one response
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other, specify	[Textbox]
11	No reason	[Checkbox]
12	Don’t know	[Checkbox]
13	Prefer not to answer	[Checkbox]

DP7b. What are some of the other reasons why the aggregate share of clean energy-related transactions in your firm’s annual deal flow in New York State [increased / decreased] between [DP1.A1.C1] and 2018?

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No other reason	[Checkbox]
12	Don’t know	[Checkbox]
13	Prefer not to answer	[Checkbox]

DP8. Looking forward to 2019, how do you expect the share of clean energy projects in your firm's New York State deal flow to change in the future?

For example, if your firm's New York State clean energy investments in 2018 is 10% of your total portfolio and is expected to increase to 15%, select "Increase by 1-10%". If it is expected to be 5% in 2019, select "Decrease by 1-10%".

	Transaction type	% Change
1	All infrastructure or energy financing, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
2	All infrastructure or energy financing in New York State, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
3	All clean energy asset financing or investing, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
4	All clean energy asset financing or investing in New York State, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]

[Programming Note]

If DP8 > 0% then [increase] in DP9a.
 If DP8 = 0% then [stay the same] in DP9a.
 If DP8 < 0% then [decrease] in DP9a.
 If DP8 = Don't know, then skip to DP10.

DP9a. What do you think is the main reason that the aggregate value of New York State clean energy-related investments in your firm’s annual deal flow will [increase/decrease] in the future?

	Reason(s)	Main reason (a) – limited to one response
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No reason	[Checkbox]
12	Don’t know	[Checkbox]
13	Prefer not to answer	[Checkbox]

DP9b. Are there other reasons why the share of New York State clean energy-related investments in your firm's annual deal flow will [increase/decrease] in the future?

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No other reason	[Checkbox]
12	Don't know	[Checkbox]
13	Prefer not to answer	[Checkbox]

DP10. Thinking about the financial performance data your firm uses to make clean energy investment decisions, how do you think the availability of data regarding the following metrics have changed between [DP1.A1.C1] and 2018?

	Category	Metric	Result
1	Technology	Availability data	Increase/decrease/stayed the same/ NA
2		Production/yield data	Increase/decrease/stayed the same/ NA
3	Credit & Underwriting	Default rates	Increase/decrease/stayed the same/ NA
4		Delinquency rates	Increase/decrease/stayed the same/ NA
5		Loss rates	Increase/decrease/stayed the same/ NA
6		Recovery rate of collateral	Increase/decrease/stayed the same/ NA
7		Counterparty financial performance	Increase/decrease/stayed the same/ NA
8		Other	[Textbox]

[Programming Note]

If DP10 = 8, then ask DP10a else skip. are all Stayed the Same, Don't Know, N/A skip to TY1a.

DP10A. Please specify the "Other" type of financial performance data that is used to make decisions

	Response	Survey logic
1	[Textbox]	Go to DP11

[Programming Note]

If DP10 1-4 are all Stayed the Same, Don't Know, N/A skip to TY1.

DP11. Do you think NYGB influenced any of the change you have observed in the availability of these financial performance data?

DP11a. If so, how or why? How?

	Response	Survey logic
1	[Textbox]	Go to TY1

Type of Investments

TY1.

		Check all used in <u>past 12 months</u> (check all that apply)?	Check 3 <u>most commonly used</u> in past 12 months.	Check all used in [DP1.A1.C2]	Check 3 <u>most commonly used</u> in [DP1.A1.C2]
1	Construction facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
2	Bridge facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
3	Term facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
4	Warehousing/aggregation facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
5	Credit enhancements	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
6	Other	[Textbox]	[Textbox]	[Textbox]	[Textbox]
7	None	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]

TY2. Approximately what share (as a percentage) of your firm's clean energy investments used the following investment products? (Note: Answers may sum to over 100% if the transactions used more than one product.)

		In the past 12 months (a)	In the DP1.A1.C2 (b)
1	Construction facilities	[% dropdown list]	[% dropdown list]
2	Bridge facilities	[% dropdown list]	[% dropdown list]
3	Term facilities	[% dropdown list]	[% dropdown list]
4	Warehousing/aggregation facilities	[% dropdown list]	[% dropdown list]
5	Credit enhancements	[% dropdown list]	[% dropdown list]
6	Other	[% dropdown list]	[% dropdown list]
7	None	[% dropdown list]	[% dropdown list]

[Programming Note]

If TY2=6 (“Other”), ask TY2a, otherwise skip.

TY2a. Please specify the other types of investment products you indicated in the previous question.

	Response	Survey logic
1	[Textbox]	Go to P1a

Investment Process

P1a. Let's consider "lead origination" as the point in time a potential clean energy investment is identified and the "transaction execution" as the point in time a clean energy investment is closed ("wet" or "dry").

Based on your firm's experience, please estimate the typical amount of time, in months, between lead origination and transaction execution for clean energy projects in the following years:

		Response	Survey logic
1	In the past 12 months	[Number box]	Go to P1b
2	[DP1.A1.C2]	[Number box]	

P1b. At what stage in a project's or asset's lifecycle did/does your firm prefer to invest capital?

		Response	Survey logic
1	In the past 12 months	[List option]	Go to P1c if response=other else Go to P2 if P1a1 ≠ P1a2 else Go to MB1a
2	[DP1.A1.C2]	[List option]	

Project Stage- List option

Early-stage development
 Mid-stage development
 Construction stage
 Initial operation
 Operating facility (asset)
 Expansion of existing project
 No preference
 Other
 Don't know

P1c. Please describe what "other" phase your firm prefers to invest capital?

		Response	Survey logic
1	In the past 12 months	[If Other - Textbox]	Go to P2 if P1a1 ≠ P1a2 else Go to MB1a
2	[DP1.A1.C2]	[If Other - Textbox]	

[Programming note]

If all 2013: past 12 months pairs do not match, Go to P2.

If all pairs *do* match, Go to MB1

P2. What caused your investment capital preferences to change since [DP1.A1.C2] and the last 12 months?

	Response	Survey logic
1	[Textbox]	Go to MB1

Market Barriers

MB1. Which of the following barriers have prevented your firm from investing in more clean energy projects in the past 12 months?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	<p>LIST OPTIONS</p> <ul style="list-style-type: none"> • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

MB2. Which of the following barriers have prevented your firm from investing in more clean energy projects in [DP1.A1.C1]?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	LIST OPTIONS <ul style="list-style-type: none"> • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

Likert cues	
1	Not a barrier
2	Moderate barrier
3	Significant barrier
4	Don't know
5	Not applicable

MB3. Did your firm's engagement with NYGB help to overcome that market barrier?

Response	
1	Yes [Textbox]
2	No
3	Don't know

[Programming Note]

If any instance of MB3 = yes, ask MB4.

MB4. Which investment products helped your firm overcome or reduce that barrier? [Check all that apply]

	Investment Product
1	Construction facilities [Checkbox]
2	Bridge facilities [Checkbox]
3	Term facilities [Checkbox]
4	Warehousing/aggregation facilities [Checkbox]
5	Credit enhancements [Checkbox]
6	Other [Textbox]
7	None of these
8	Don't know

MB5. What, if any, additional market barriers or challenges has your firm encountered in the clean energy financing market that you believe NYGB could help overcome?

	Response
1	[Textbox]

[Programming note]

If MB5 = 2 ask MB6.

MB6. Finally, how could NYGB help overcome those additional clean energy financing market barriers?

	Response	Survey logic
1	[Textbox]	End Survey

Thank you for your participation in this survey.

THIS SECTION IS ONLY APPLIED TO RESPONDENTS WITH A1=2

Unaware Participants

UPMB3. Finally, what, if any, market barriers or challenges has your firm encountered in the clean energy financing market that you believe NYGB could help overcome?

NYGB is a State-sponsored, specialized financial entity working with the private sector to increase investments into New York's clean energy markets. NYGB works with clients and counterparties to address investment barriers in the current clean energy capital markets by providing a variety of approaches and transaction structures.

	Response
1	[Textbox]

UMPB3A Finally, how could NYGB help overcome the clean energy financing market barriers?

	Response
1	[Textbox]

Thank you for your participation in this survey.

APPENDIX E. FINANCIAL NON-PARTICIPANT SURVEY

NYGB Financial Non-Participant Survey November 2018	
Market Indicator	Question
Screening Questions	
Non-Participant screeners	SC1-SC5
Awareness of Clean Energy Projects and NYGB	
Non-Participants: When the firm begin financing clean energy projects?	A1
Non-Participants: Awareness of NYGB. If yes, how did they hear about it? How familiar (Scale of 0-3?).	A2-A3
Non-Participants: Knowledgeable of NYGB products and services (Scale of 0-3).	A4-A5
Non-Participants aware of NYGB: Has your firm considered participating with NYGB? What would encourage your firm to participate or consider participating in NYGB funded projects?	A6-A7
Description of Financial Stakeholder	
How long has respondent's firm been in this market?	DP1
What type of technologies/projects consider for investing?	DP2
Types of financing product used.	DP3
Number of financing transactions completed in last 12 months.	DP4
Average value of transactions completed in last 12 months, if deal flow changed from the first-year firm began investing in clean energy transactions and reasons deal flow changed.	DP5-DP6
Expectation of increase share of clean energy technologies in portfolio? Why?	DP7-DP8
Availability of financial performance data.	DP9
Types of Investment Products	
What financing structures are they currently using?	TY1
Share of financing structures in portfolio?	TY2
Investment Process	
State of project development cycle the stakeholder enters 2013 versus 2018.	P1
Reason for difference.	P2
Market Barriers	
Identify barriers encountered in last 12 months (all non-participants) and if NYGB helped to overcome barriers (only for non-participants aware of NYGB).	MB1-MB2
Significance of barriers in 2013 or first year firm began investing in clean energy projects.	MB3

Screening Questions

For this survey, we are contacting members of the financial community who are aware of and have experience with the financing of clean energy projects. Clean energy transactions refer to financial transactions, or investment agreements, or arrangements associated with renewable energy technologies, (e.g., bioenergy, solar, wind, energy efficiency, electric vehicle infrastructure, microgrids, sustainable transportation, and energy storage projects).

When responding, if you want to return to the previous questions, please use the back arrow within the survey. By clicking the save button, you will be able to return to the survey if you are unable to complete it in your first attempt.

Please enter the 6-digit survey identification number as referenced in NYSERDA's email. If you are unable to find the number, please call DNV GL at (707) 820-4400 or email: nygreenbank@dnvgl.com

Enter 6-digit survey ID here:

SC1. Are you aware of or have experience with financing of clean energy projects related to one or more of the types of clean energy technology categories listed above?

	Response	Survey logic
1	Yes	Go to SC3
2	No	Go to SC2
3	Don't know	END SURVEY
4	Prefer not to answer	

SC2. Can you please provide the contact information for the person at your firm who is aware of or has experience with financing clean energy projects?

	Response	Survey logic
1	Yes [Please provide the contact information for the person at your firm: TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	
3	Don't know	
4	Prefer not to answer	

SC3. Are you involved in financing clean energy projects?

	Response	Survey logic
1	Yes	Go to SC5
2	No	Go to SC4
3	Don't know	END SURVEY
4	Prefer not to answer	

SC4. Can you please provide the contact information for the person at your firm who is involved with financing clean energy projects?

	Response	Survey logic
1	Yes SC4a. Can you please provide an alternate point of contact: [TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	

SC5. Does your firm finance clean energy projects in states other than New York State?

	Response	Survey logic
1	Yes	Go to A1
2	No	
3	Don't know	
4	Prefer not to answer	

Awareness of Clean Energy Finance and NYGB

A1. Are you aware of NYGB and its activities in the market place?

	Response	Survey logic
1	[Yes]	Go to A2
2	[No]	Go to DP1

A2. How did you first learn of NYGB? [pick one with other]

	Response	Survey logic
1	NYSERDA [Checkbox]	Go to A3
2	NYGB's website, or other information provided by NYGB (e.g., RFI, RFP, etc.) [Checkbox]	
3	Events that NYGB hosted or participated in. [Checkbox]	
4	Colleagues within my firm [Checkbox]	
5	Lender and/or investor outside of my firm [Checkbox]	
6	Project developer, ESCO, technology vendor [Checkbox]	
7	General media (social media, articles, interviews) [Checkbox]	
8	Industry trade group [Checkbox]	
9	NYS Governor's Office, NYSERDA, or NYGB announcements [Checkbox]	
10	Don't recall [Checkbox]	
11	Other, specify: [Textbox]	

A3. How familiar are you with NYGB's services and financing products?

	Response	Survey logic
1	Familiar	Go to A4
2	Somewhat familiar	Go to A4
3	Not Familiar	Go to DP1
4	Don't know	Go to DP1
5	Prefer not to answer	Go to DP1

A4. Which NYGB services and financing products you are familiar with? Check all that apply.

	Response(s)	Survey logic
1	Construction facilities [Checkbox]	Go to A5
2	Bridge facilities [Checkbox]	
3	Term facilities [Checkbox]	
4	Warehousing/aggregation facilities [Checkbox]	
5	Credit enhancements [Checkbox]	
6	Not familiar with specific services or products [Checkbox]	
7	Prefer not to answer [Checkbox]	
8	Other	[Textbox]

A5. Has your firm considered working with NYGB?

	Response	Survey logic
1	[Yes]	Go to DP1
2	[No]	Go to A6
3	Don't know	Go to A6
4	Prefer not to answer	Go to A6

A6. What would make it more likely for your firm to consider working with NYGB?

	Response	Survey logic
1	[Textbox]	Go to DP1

Description of Financial Stakeholder and Investment Portfolio

DP1. Select the earliest year, from the options presented below, that best represents when your firm first become active in the following two activities:

		Year first active	Survey logic
DP1.A1.C1	Infrastructure or energy financing, generally	No activity	END SURVEY
		2013, 2014, 2015, 2016, 2017, 2018	Go to DP2
		Prior to 2013	Go to DP2
DP1.A1.C2	Clean energy asset financing or investing, specifically	No activity	END SURVEY IF SAME AS DP1.A1.C1
		2013, 2014, 2015, 2016, 2017, 2018	Go to DP2
		Prior to 2013	Go to DP2

[Programming Note]

DP1.A1 AND DP1.A2 WILL BE PIPPED INTO QUESTIONS THAT PREVIOUS USED YEAR "SINCE 2013".

If respondent's firm has been in industry less than 5 years, future questions referring to 2013 will be asked of 2018 - response to DP1.2.

DP2. What types of clean energy technologies and projects has your firm considered investing in and in what types of technologies and projects has your firm completed a transaction since [DP1.A1.C2]?

		<PICK ONE> Considered/ completed transaction	(If considered but not completed) Why did your firm not complete the transaction?
1	Bioenergy	[list option]	
2	Combined Heat & Power	[list option]	
3	Electric Vehicle Infrastructure	[list option]	
4	Energy Efficiency	[list option]	
5	Energy Storage	[list option]	
6	Microgrids	[list option]	
	Solar PV		
7	Commercial & Industrial	[list option]	
8	Community Distributed Generation	[list option]	
9	Residential	[list option]	
10	Utility-scale	[list option]	
	Wind	[list option]	
11	Offshore	[list option]	
12	Small-scale Onshore	[list option]	
13	Utility-scale Onshore	[list option]	
14	Other:	[Textbox]	
15	None of these	[list option]	

[Programming Note]

If DP2 (1) does not equal DP2 (2) and DP2 (2) not checked, then Go to DP3 else Go to DP5.
For DP2, include text box for each instance where DP2 (1) does not equal DP2 (2).

[Programming Note]

Where DP2 (2) is checked, ask DP3.

DP3. For each type of clean energy technology or project your firm has invested in since [DP1.A2.C2], did you use any of the following products:

	Product Type	Survey logic
1	Construction facilities [Checkbox]	Go to DP4
2	Bridge facilities [Checkbox]	
3	Term facilities [Checkbox]	
4	Warehousing/aggregation facilities [Checkbox]	
5	Credit enhancements [Checkbox]	
6	Other [Textbox]	
7	Not familiar with specific services or products	
8	Don't know	

DP4. In the past 12 months, approximately how many transactions did your firm close, by category? [Ranges are acceptable]

	Total number of transactions (#)	Past 12 months
1	All infrastructure or energy financing, generally	
2	All infrastructure or energy financing in New York State, generally	
3	All clean energy asset financing or investing, specifically	
4	All clean energy asset financing or investing in New York State, specifically	

DP5. What was the approximate average dollar value of those transactions?

	Average dollar value of transactions (\$)	Past 12 months
1	All infrastructure or energy financing, generally	\$
2	All infrastructure or energy financing in New York State, generally	\$
3	All clean energy asset financing or investing, specifically	\$
4	All clean energy asset financing or investing in New York State, specifically	\$

DP6. How has your firm’s annual deal flow changed in aggregate dollar value, from [DP1.A1.C1] to 2018? For example, your firm’s project finance transactions have increased in value by 20% in the period with the value of clean energy transactions increasing by 35% in the same period.

	Transaction type	
1	All infrastructure or energy financing, generally	
2	All infrastructure or energy financing in New York State, generally	
3	All clean energy asset financing or investing, specifically	
4	All clean energy asset financing or investing in New York State, specifically	

[Programming Note]

If D6 .4 = increase then “increased” in DP6a and DP6b.
 If DP6.4 = stay the same, then skip DP6a and DP6b.
 If DP6.4 = decrease then “decreased” in DP6a and DB6b.

DP6a. What was the main reason why ~~did~~ the aggregate value of clean energy-related transactions in your firm’s annual deal flow in New York State [increased / decreased] between [DP1.A1.C1] and 2018? [Pick one]

	Reason(s)	Main reason (a) – limited to one response
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No reason	[Checkbox]

DP6b. What are some of the other reasons why the aggregate value of clean energy-related transactions in your firm’s annual deal flow in New York State [increased / decreased] between [DP1.A1.C1] and 2018?

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	No other reason(s)	[Checkbox]
11	Don’t know	[Checkbox]
12	Prefer not to answer	[Checkbox]
13	Other, specify	[Textbox]

[Programming Note]

Remaining questions in this section are asked of respondents DP2=1 or 2. This battery captures participants, non-participants currently involved in clean energy projects and non-participants not currently involved in clean energy projects.

DP7. Looking forward to 2019, how do you expect the share of clean energy projects in your firm’s New York State deal flow to change in the future?

For example, if your firm’s New York State clean energy investments in 2018 is 10% of your total portfolio and is expected to increase to 15%, select "Increase by 1-10%". If it is expected to be 5% in 2019, select "Decrease by 1-10%".

	Transaction type	% Change
1	All infrastructure or energy financing, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
2	All infrastructure or energy financing in New York State, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
3	All clean energy asset financing or investing, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
4	All clean energy asset financing or investing in New York State, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]

[Programming Note]

If D7 .4 = increase then “increase” in DP8a and DP8b.
 If DP7.4 = stay the same then skip DP8.a and DP8b.
 If DP7.4 = decrease then “decrease” in DP8.a, DB8b.

DP8a. What is the main reason why the share of New York State clean energy-related investments in your firm's annual deal flow will [increase/decrease] in the future?

	Reason(s)	Main reason (DP8a)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	No reason(s)	[Checkbox]
11	Don't know	[Checkbox]
12	Prefer not to answer	[Checkbox]
13	Other	[Textbox]

DP8b. Are there other reasons why the share of New York State clean energy-related investments in your firm's annual deal flow will [increase/decrease] in the future?

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No reason	[Checkbox]

DP9. Thinking about the financial performance data your firm uses to make clean energy investment decisions, how do you think the availability of data regarding the following metrics have changed between [DP1.A1.C1] and 2018?

	Category	Metric	Result
1	Technology	Availability of data	Increase/decrease/stayed the same/ NA
2		Production/yield data	Increase/decrease/stayed the same/ NA
3	Credit & Underwriting	Default rates	Increase/decrease/stayed the same/ NA
4		Delinquency rates	Increase/decrease/stayed the same/ NA
5		Loss rates	Increase/decrease/stayed the same/ NA
6		Recovery rate of collateral	Increase/decrease/stayed the same/ NA
7		Counterparty financial performance	Increase/decrease/stayed the same/ NA
8		Other	[Textbox]

[Programming Note]

[Show if DP9 = Other, then ask] As indicated in your previous response, please specify the "other" type of financial performance data is used to make decisions: IF DP1.A1.C2 = no activity (they have not invested in clean energy projects), SKIP TO MB1.

Type of Investments

TY1.

		Check all the investment products your firm used to finance clean energy projects in past 12 months.	Check three most commonly used in past 12 months.	Check all used in [DP1.A1.C2].	Check 3 most commonly used in [DP1.A1.C2].
1	Construction facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
2	Bridge facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
3	Term facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
4	Warehousing/aggregation facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
5	Credit enhancements	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
6	Not familiar with specific services or products	[Textbox]	[Textbox]	[Textbox]	[Textbox]
7	Other, specify	[Textbox]	[Textbox]	[Checkbox]	[Checkbox]

TY2. Approximately what share (as a percentage) of your firm’s clean energy investments used the following investment products? (Note: Answers may sum to over 100% if the transactions used more than one product.)

		In the past 12 months (a)	In the DP1.A1.C2 (b)
1	Construction facilities	[% dropdown list]	[% dropdown list]
2	Bridge facilities	[% dropdown list]	[% dropdown list]
3	Term facilities	[% dropdown list]	[% dropdown list]
4	Warehousing/aggregation facilities	[% dropdown list]	[% dropdown list]
5	Credit enhancements	[% dropdown list]	[% dropdown list]
6	Not familiar with specific services or products	[% dropdown list]	[% dropdown list]
7	Other	[% dropdown list]	[% dropdown list]

[Programming Note]
 IF D1.A1.C2 = no activity (they have not invested in clean energy projects), SKIP TO MB1.

Investment Process

P1a. Let's consider "lead origination" as the point in time a potential clean energy investment is identified and the "transaction execution" as the point in time a clean energy investment is closed ("wet" or "dry").

Based on your firm's experience, please estimate the typical amount of time, in months, between lead origination and transaction execution for clean energy projects in the following years:

		Response	Survey logic
1	In the past 12 months	[Months Number box]	Go to P1b
2	[DP1.A1.C2]	[Months Number box]	

P1b. At what stage in a project's or asset's lifecycle did/does your firm prefer to invest capital?

		Response	Survey logic
1	In the past 12 months	[List option]	Go to P1b
2	[DP1.A1.C2]	[List option]	

Project Stage- List option

Early-stage development
 Mid-stage development
 Construction stage
 Initial operation
 Operating facility (asset)
 Expansion of existing project
 No preference
 Other
 Don't know

P1c. Please describe what "other" phase your firm prefers to invest capital?

		Response	Survey logic
1	In the past 12 months	[If Other - Textbox]	Go to P2 if P1a.1 \neq P1a.2 else Go to MB1a
2	[DP1.A1.C2]	[If Other - Textbox]	

[Programming Note]

If all 2013: past 12 months pairs do not match, Go to P2.
 If all pairs *do* match, Go to MB1.

P2. What caused your investment capital preferences to change since [DP1.A1.C2] and the last 12 months?

	Response	Survey logic
1	[Textbox]	Go to MB1

Market Barriers

MB1. Which of the following barriers have prevented your firm from investing in more clean energy projects in the past 12 months?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	<p>LIST OPTIONS</p> <ul style="list-style-type: none"> • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

MB2. Which of the following barriers have prevented your firm from investing in more clean energy projects in [DP1.A1.C1]?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	LIST OPTIONS <ul style="list-style-type: none"> • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

Likert cues	
1	Not a barrier
2	Moderate barrier
3	Significant barrier
4	Don't know
5	Not applicable

MB3. Finally, what, if any, market barriers or challenges has your firm encountered in the clean energy financing market that you believe NYGB could help overcome?

NYGB is a State-sponsored, specialized financial entity working with the private sector to increase investments into New York's clean energy markets. NYGB works with clients and counterparties to address investment barriers in the current clean energy capital markets by providing a variety of approaches and transaction structures.

Response	
1	[Textbox]

MB4. How could NYGB help overcome the clean energy financing market barriers?

Response	
1	[Textbox]

Thank you for your participation in this survey.

APPENDIX F. DEVELOPER PARTICIPANT SURVEY

NYGB
Developer Participant Survey
November 2018

Market Indicator	Question
Screening Questions	
Participant screeners.	SC1-SC4
Geography	
Geographies targeted and differences between states	G section
Awareness of Clean Energy Projects and NYGB and Reasons for Participation	
What features of NYGB led to your firm's participation?	A3
Aware of additional offerings.	A4-A5
Future clean projects and Green Bank participation.	A8-A10
Description of Stakeholder	
How long has respondent' firm been in this market?	DP1
What type of technologies/projects consider for investing?	DP2
Average number of clean energy transactions funded in NYS per year in past 12 months and in 2013.	DP4, DP6
Average amount of investment for clean energy projects in 2013 and past 12 months.	DP5, DP7
Has the stakeholder's portfolio changed since 2013? What is % of clean energy projects in 2013, % in 2018?	D7-DP7a
Percentage of portfolio comprised of NYGB projects.	DP4-DP7
Reasons why or why not portfolio changed? Impact of NYGB?	DP8-DP10
Expectation of increase share of clean energy technologies in portfolio? Why?	DP8-DP8.b
Change in third party ownership over time.	DP9
Influence on project selection.	DP12
Financing Motivations	
Reasons for financing, when to use, difficulty in securing.	IR section
Types of Investment Products	
What financing structures are they currently using?	TY1
How have the composition changed between 2013 and 2018?	TY2a-TY2b
Investment Process	
State of project development cycle the stakeholder enters 2013 versus 2018.	P1a-P1c
Reason for difference.	P2
Market Barriers	
Significance of barrier or market influence 2013 versus 2018.	MB1-MB2
Importance of the various roles and services provided by NYGB.	MB3
Other barriers NYGB could address.	MB4-MB5

Screening Questions

For this survey, we are contacting developers who are aware of and have experience developing clean energy projects. Clean energy projects refer to the deployment of renewable energy technologies, (e.g., wind, solar, bioenergy), energy efficiency measures, microgrids, sustainable transportation, and energy storage projects.

When responding, if you want to return to the previous questions, please use the back arrow within the survey and NOT the browser command. By clicking the save button, you will be able to return to the survey if you are unable to complete it in your first attempt.

Enter the 4-digit survey identification number as referenced in NYSERDA's email. If you are unable to locate the number, please call DNV GL at (707) 820-4400 or email: nygreenbank@dnvgl.com

Enter 4-digit survey ID here:

SC1. Are you aware of or have experience with developing clean energy projects related to one or more of the types of clean energy technology categories listed below?

Are you aware of or do you have experience with financing of clean energy projects related to one or more of the types of clean energy technology categories listed below?

- Renewable energy technologies (e.g., bioenergy, solar PV, wind)
- Energy efficiency
- Electric vehicle infrastructure
- Microgrids
- Energy storage projects

	Response	Survey logic
1	Yes	Go to SC3
2	No	Go to SC2
3	Don't know	END SURVEY
4	Prefer not to answer	

SC2. Can you please provide the contact information for the person at your firm who is aware of or has experience with developing clean energy projects?

	Response	Survey logic
1	Yes [TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	
3	Don't know	
4	Prefer not to answer	

SC3. Are you involved in developing clean energy projects?

	Response	Survey logic
1	Yes	Go to G1
2	No	Go to SC4
3	Don't know	END SURVEY
4	Prefer not to answer	

SC4. Can you please provide the contact information for the person at your firm who is involved with developing clean energy projects?

	Response	Survey logic
1	Yes [TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	
3	Don't know	
4	Prefer not to answer	

Geography

We would like to understand where your firm focuses its activities.

G1. Does your firm develop clean energy projects in states other than New York State?

	Response	Survey logic
1	Yes	Go to G2
2	No	Go to A1
3	Don't know	Go toA1

G2. What states do you target for developing clean energy projects?

	Response	Survey logic
1	[Textbox]	Go to G3

[Programming Note]

If more states selected than New York, go to G3.
If only New York selected, go to A1.

G3. Do you develop different types of clean energy projects in New York State than you do in other states?

	Response	Survey logic
1	Yes	Go to G3a.
2	No	Go to A1
3	Don't know	
4	Prefer not to say	

G3a. How do your projects differ in the various states?

	Response	Survey logic
1	[Textbox]	Go to A1

Awareness of Clean Energy Finance and NYGB

A1. How did you first learn of NYGB?

	Response(s)	Survey logic
1	NYSERDA [Checkbox]	Go to A2
2	NYGB's website, or other information provided by NYGB (e.g., RFI, RFP, etc.) [Checkbox]	
3	Events that NYGB hosted or participated in. [Checkbox]	
4	Colleagues within my firm [Checkbox]	
5	Lender and/or investor outside of my firm [Checkbox]	
6	Project developer, ESCO, technology vendor [Checkbox]	
7	General media (social media, articles, interviews) [Checkbox]	
8	Industry trade group [Checkbox]	
9	NYS Governor's Office, NYSERDA, or NYGB announcements [Checkbox]	
10	Other [Textbox]	
11	Don't know [Checkbox]	

A2. Before working with NYGB, how familiar was your firm with the economic benefits of clean energy projects?

	Response	Survey logic
1	Familiar	Go to A3
2	Somewhat familiar	Go to A3
3	Not Familiar	Go to DP1
4	Don't know	Go to DP1

A4. Are you aware of NYGB product offerings beyond those utilized by your firm?

	Response	Survey logic
1	[Yes]	Go to A5 if Yes, else Go to A6
2	[No]	
3	Don't know	
4	Prefer not to answer	

A5. What features of NYGB's services and products led to your firm's engagement with NYGB?? Check all that apply.

	Response(s)	Survey logic
1	Construction facilities [Checkbox]	Go to A6
2	Bridge facilities [Checkbox]	
3	Term facilities [Checkbox]	
4	Warehousing/aggregation facilities [Checkbox]	
5	Credit enhancements [Checkbox]	
6	Not familiar with specific services or products [Checkbox]	
7	Other [Textbox]	
8	Don't know	

A6. To what extent do you believe NYGB has increased the financial community's awareness of the economic benefits of developing clean energy projects? Select a statement that best aligns with your opinion:

	Response	Survey logic
1	The financial community was already fully aware of the economic benefits of clean energy projects (NYGB did not change awareness)	Go to A7
2	NYGB had some influence on the financial community's awareness of the economic benefits of clean energy projects	
3	NYGB's demonstrated capability had complete influence on the financial community's perceptions of the economic benefits of financing clean energy projects	
4	[Don't Know]	

A7. After your firm's experience with NYGB, have you developed clean energy projects similar to those you utilized NYGB for, without needing financing solutions from NYGB?

	Response	Survey logic
1	[Yes]	Go to A8
2	[No]	
3	[Don't Know]	
4	Prefer not to answer	

A8. How likely is your firm to engage with NYGB to finance clean energy projects in the future?

	Response	Survey logic
1	Not at all likely	Go to A9 if A8 ≠ 4,5 else Go to A10
2	Somewhat likely	
3	Extremely likely	
4	Don't know	
5	Prefer not to answer	

A9. Please explain:

	Response	Survey logic
1	[Textbox]	Go to A10

A10. How likely is your firm to recommend NYGB to others in the project development community who are considering developing projects in the clean energy market?

	Response	Survey logic
1	Not at all likely	Go to DP1
2	Somewhat likely	
3	Extremely likely	
4	Don't know	
5	Prefer not to answer	

Description of Developer and Project Portfolio

DP1. Select the earliest year, from the options presented below, that best represents when your firm first became active in the following two activities:

		Year first active	Survey logic
DP1.A1.C1	Infrastructure or Energy Project Development, generally	No Activity/ Don't Know/ Refused	END SURVEY
		2013, 2014, 2015, 2016 2017, 2018	Go to DP1.A1.C2
		Prior to 2013	Go to DP1.A1.C2
DP1.A1.C2	Clean Energy Project Development, specifically	No Activity/ Don't Know/ Refused	END SURVEY
		2013, 2014, 2015, 2016 2017, 2018	Go to DP2
		Prior to 2013	Go to DP2

[Programming Note]

DP1.A1 AND DP1.A2 WILL BE PIPPED INTO QUESTIONS THAT PREVIOUS USED YEAR "SINCE 2013".

If respondent's firm has been in industry less than 5 years, future questions referring to 2013 will be asked of response to DP1.2.

DP2. What types of clean energy technologies and projects has your firm considered developing in and what types of technologies and projects has your firm completed a transaction since [DP1.A1.C2]?

		<PICK ONE> Considered/ completed transaction (DP2)	<If considered then ask> Why did your firm not complete the transaction? (DP3)
1	Bioenergy	[list option]	
2	Combined Heat and Power (CHP)	[list option]	
3	Electric Vehicle Infrastructure	[list option]	
4	Energy Efficiency	[list option]	
5	Energy Storage	[list option]	
6	Microgrids	[list option]	
	Solar PV		
7	Commercial & Industrial	[list option]	
8	Community Distributed Generation	[list option]	
9	Residential	[list option]	
10	Utility-scale	[list option]	
	Wind	[list option]	
11	Offshore	[list option]	
12	Small-scale Onshore	[list option]	
13	Utility-scale Onshore	[list option]	
14	Other	[Textbox]	
15	None of these	[list option]	

DP2_OTR. What "other" clean energy technologies and projects has your firm considered?

	Response	Survey logic
1	[Textbox]	Go to A10

[Programming Note]

For DP3, include text box for each instance where DP2 (considered).

DP4. For each type of clean energy technology or project your firm has developed since [DP1.A1.C2], did your firm use any of the following financial products? Check all that apply.

	Response(s)	Survey logic
1	Construction facilities [Checkbox]	Go to DP5
2	Bridge facilities [Checkbox]	
3	Term facilities [Checkbox]	
4	Warehousing/aggregation facilities [Checkbox]	
5	Credit enhancements [Checkbox]	
6	Not familiar with specific services or products [Checkbox]	
7	Other [Textbox]	

DP5. In the past 12 months, approximately how many projects did your firm complete, by category? [Ranges are acceptable]

	Total number of transactions (#)	Past 12 months
1	All infrastructure or energy projects, generally	
2	All infrastructure or energy projects in New York State, generally	
3	All clean energy developments, specifically	
4	All clean energy developments in New York State, specifically	

DP6. What was the approximate average dollar value of those projects?

	Average dollar value of transactions (\$)	Past 12 months
1	All infrastructure or energy projects, generally	\$
2	All infrastructure or energy projects in New York State, generally	\$
3	All clean energy developments, specifically	\$
4	All clean energy developments in New York State, specifically	\$

DP7. How has your firm’s pipeline of clean energy projects changed in aggregate dollar value, from [DP1.A1.C1] to 2018? For example, your firm’s pipeline of infrastructure or energy projects has increased in value by 20% in the period with the value of clean energy projects increasing by 35% in the same period.

	Transaction type	% Change
1	All infrastructure or energy projects, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
2	All infrastructure or energy projects in New York State, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
3	All clean energy developments, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
4	All clean energy developments in New York State, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]

[Programming Note]

If D7 > 0% then [increase] in DP7a.
 If DP7 = 0% then [stay the same] in DP7a.
 If DP7 <0% then [decrease] in DP7a.
 If DP7 = Don’t know, then skip to DP8.

DP7a. What was the main reason why the aggregate value of clean energy projects in your firm’s pipeline in New York State [increased/decreased/stayed the same] between [DP1.A1.C1] and 2018? [Pick one]

	Reason(s)	Main reason (DP7a) – limited to one response
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No reason	Go to DP8
12	Prefer not to answer	Go to DP8
13	Don’t know	Go to DP8

DP7b. What are some of the other reasons why the aggregate value of clean energy-related projects in your firm’s pipeline in New York State [DP7.A4 - increased/decreased/stayed the same] between [DP1.A1.C1] and 2018?

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No other reason	[Checkbox]

DP8. Looking forward to 2019, how do you expect the share of clean energy projects in your firm's New York State pipeline, to change in the future, by aggregate value?

For example, you expect your firm's overall pipeline to increase in value by 20% in 2019 with the value of clean energy projects increasing by 35% in the same period.

	Transaction type	% Change
1	Clean energy developments in New York State will increase	Go to DP8.1
2	Clean energy developments in New York State will decrease	Go to DP8.1
3	Clean energy developments in New York State will stay the same	Go to DP9
4	Not investing in 2019 or Don't know	Go to DP9

DP8.1 You mentioned your firm's pipeline of clean energy projects may change by what percent do you expect it will increase or decrease?

	Response	Survey logic
1	[Textbox]	Go to DP8a

[Programming Note]

If DP8 > 0% then [increase] in DP8a.
 If DP8 = 0% then [stay the same] in DP8a.
 If DP8 < 0% then [decrease] in DP8a.

DP8a. What is the main reason why the aggregate value of New York State clean energy projects in your firm’s annual pipeline will [increase/decrease] in the future?

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No other reason	[Checkbox]
12	Don't know	[Checkbox]
13	Prefer not to answer	[Checkbox]

DP8b. Are there other reasons why the share of New York State clean energy projects in your firm's annual pipeline will [increase/decrease/stay the same] in the future? Check all that apply.

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No other reason	[Checkbox]

DP9. Thinking about clean energy asset ownership, what proportion of your end use customers opted for ownership of the asset versus entering into a lease or PPA contract in [DP1.A1.C2] and 2018?

		% of asset ownership	If none or other
1	[DP1.A1.C2]	[Enter %]	None/ Do not work with third party owners/DK/N/A
2	2018	[Enter %]	None/ Do not work with third party owners/DK/N/A

DP10. How important are the following project drivers in developing clean energy projects or to your clean energy project portfolio, generally?

	Project drivers	Influence on projects or portfolio
1	Energy efficiency programs or demand response programs offered by utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
2	Other services or assistance offered by utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
3	Changing regulatory requirements for energy efficiency and/or demand response	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
4	Availability of on-bill financing offered by utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
5	Availability of PACE programs offer financing for renewable and energy efficiency projects	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
6	Interconnection requirements specified by regulators and/or utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
7	Environmental and building permitting regulations	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
8	Overall regulatory environment	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
9	Other	[Textbox]

DP10a. [If DP10 is other] What "other" project drivers are important in developing clean energy projects?

	Response	Survey logic
1	[Textbox]	Go to IR1

Financing Motivations

This section focuses on the underlying reasons project developers need access to capital from lenders.

IR1. What are the reasons that you look for financing for clean energy projects?

	Reason	Main Reason (a)
1	Inadequate capital for balance-sheet construction	[Checkbox]
2	Lack of tax appetite to monetize incentives	[Checkbox]
3	Desire to fully leverage capital to facilitate other developments	[Checkbox]
4	Leveraged returns for project sponsor	[Checkbox]
5	None	[Checkbox]
6	Other	[Textbox]
7	Don't know	[Checkbox]

IR2. Under what circumstances will you search out financing instead of using corporate financing?

	Response	Survey logic
1	[Textbox]	IR3a

IR3. Thinking back to the past 12 months and in {FYF} how difficult has it been to secure the following forms of financing for clean energy projects?

		Past 12 months	First year financing
1	Construction facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
2	Bridge facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
3	Term facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
4	Warehousing/aggregation facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
5	Credit enhancements	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
6	Other	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA

Type of Financing

TY1. Please check the financing products your firm uses or has used to finance clean energy projects.

		Please check all the financing products your firm used to finance clean energy projects in the past 12 months.	Check the three most commonly used in the past 12 months.	Check all the financing tools your firm used to finance clean energy projects in [DP1.A1.C2]	Check the three most commonly used financing tools your firm used to finance clean energy projects in [DP1.A1.C2]
1	Construction facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
2	Bridge facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
3	Term facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
4	Warehousing/aggregation facilities	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
5	Credit enhancements	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
6	Other	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
7	Not familiar with specific services or products	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]
8	None	[Checkbox]	[Checkbox]	[Checkbox]	[Checkbox]

TY2. In the past 12 months, approximately what share (as a percentage) of your firm’s clean energy project developments were financed using the following financing products?

(Note: Answers may sum to over 100% if the transactions used more than one product.)

		Past 12 months	First year financing
1	Construction facilities	0-100% in ranges of 10%	0-100% in ranges of 10%
2	Bridge facilities	0-100% in ranges of 10%	0-100% in ranges of 10%
3	Term facilities	0-100% in ranges of 10%	0-100% in ranges of 10%
4	Warehousing/aggregation facilities	0-100% in ranges of 10%	0-100% in ranges of 10%
5	Credit enhancements	0-100% in ranges of 10%	0-100% in ranges of 10%
6	Other	0-100% in ranges of 10%	0-100% in ranges of 10%
7	Not familiar with specific services or products	0-100% in ranges of 10%	0-100% in ranges of 10%
8	None	0-100% in ranges of 10%	0-100% in ranges of 10%

TY2a. As indicated in your previous response, please specify the "other" type of investment products that are used.

	Response	Survey logic
1	[Textbox]	TY2b

TY2b. In [DP1.A1.C2], approximately what share (as a percentage) of your firm's clean energy developments were financed using the following financing tools?

[Programming Note]

If projects use multiple products, totals may sum to more than 100%. For example, if the most common products are each used on 75% of all clean energy projects, please indicate 75% for each.

		Past 12 months (TY2a)	In DP1.A1.C2 (TY2b)
1	Construction facilities	[% dropdown list]	[% dropdown list]
2	Bridge facilities	[% dropdown list]	[% dropdown list]
3	Term facilities	[% dropdown list]	[% dropdown list]
4	Warehousing/aggregation facilities	[% dropdown list]	[% dropdown list]
5	Credit enhancements	[% dropdown list]	[% dropdown list]
6	Other	[% dropdown list]	[% dropdown list]
7	None	[% dropdown list]	[% dropdown list]

Investment Process

P1a. Let's consider "application" as the point in time an proposal is submitted to a financial institution to seek financing and the "transaction execution" as the point in time financing is executed ("wet" or "dry").

Based on your firm's experience, please estimate the typical amount of time, in months, between application and transaction execution in the following years:

		Response	Survey logic
1	In the past 12 months	[Number box]	Go to P1b
2	[DP1.A1.C2]	[Number box]	

P1b. At what stage in a clean energy project's or asset's lifecycle did/does your firm prefer to seek financing?

		Response	Survey logic
1	In the past 12 months	[List option]	Go to P1c if response=other else Go to P2 if P1a1 ≠ P1a2 else Go to MB1a
2	[DP1.A1.C2]	[List option]	

Project Stage
Early-stage development
Mid-stage development
Construction stage
Initial operation
Operating facility (asset)
Expansion of existing project
No preference
Other
Don't know

P1c. Please describe what "other" phase your firm prefers to seek financing?

		Response	Survey logic
1	In the past 12 months	[If Other - Textbox]	Go to P2 if P1a1 ≠ P1a2 else Go to MB1a
2	[DP1.A1.C2]	[If Other - Textbox]	

P2. What caused your firm to change when they prefer to seek financing between [DP1.A1.C2] and the last 12 months?

	Response	Survey logic
1	[Textbox]	Go to MB1

Market Barriers

MB1. Which of the following market barriers have prevented your firm from developing more clean energy projects in the past 12 months?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	LIST OPTIONS • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

MB2. Which of the following barriers prevented your firm from developing more clean energy projects in [DP1.A1.C1]?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	LIST OPTIONS • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

[Programming Note]

If any instance of MB2 = significant or moderate barrier, ask MB3.

MB3. Did your firm’s engagement with NYGB help to overcome that market barrier?

	Response	Survey logic
1	Yes	Go to MB3a
2	No	Go to MB4
3	Don’t know	Go to MB4

MB3a. Which financial products helped your firm overcome or reduce that barrier? Check all that apply

		Response	Survey logic
1	Construction facilities	[Checkbox]	Go to-MB4
2	Bridge facilities	[Checkbox]	
3	Term facilities	[Checkbox]	
4	Warehousing/aggregation facilities	[Checkbox]	
5	Credit enhancements	[Checkbox]	
6	Other	[Textbox]	
7	NYGB did not help my firm overcome the barrier	[Checkbox]	
8	Don’t know	[Checkbox]	

MB4. Finally, what, if any, additional market barriers or challenges has your firm encountered in the clean energy development market that you believe NYGB could help overcome?

	Response	Survey logic
1	There are some barriers NYGB could help my firm overcome	MB5
2	There are no additional barriers NYGB could help my firm overcome	End Survey
3	Don’t Know	
4	Refused	

MB5. NYGB is a State-sponsored, specialized financial entity working with the private sector to increase investments into New York’s clean energy markets. NYGB works with clients and counterparties to address investment barriers in the current clean energy capital markets by providing a variety of approaches and transaction structures.

How could NYGB help overcome those barriers?

	Response	Survey logic
1	[Textbox]	End Survey

Thank you for your participation in this survey.

APPENDIX G. DEVELOPER NON-PARTICIPANT SURVEY

NYGB
Developer Non-Participant Survey
November 2018

Market Indicator	Question
Screening Questions	
Non-Participant screeners	SC1-SC4
Geography	
Geographies targeted and differences between states	G section
Awareness of Clean Energy Projects and NYGB	
Awareness of NYGB. If yes, how did they hear about it? How familiar?	A1-A2
Knowledgeable of NYGB products and services.	A3-A4
Has your firm considered participating with NYGB? What would encourage your firm to participate or consider participating in NYGB funded projects?	A5-A6
Description of Stakeholder	
How long has respondent's firm been in this market?	DP1
What type of technologies/projects consider for developing?	DP2
Types of financing products used.	DP3
Number of financing transactions completed in last 12 months.	DP4
Average value of transactions completed in last 12 months, if deal flow changed from the first-year firm began investing in clean energy transactions and reasons deal flow changed.	DP5-DP6
Expectation of increase share of clean energy technologies in portfolio? Why?	DP7-DP8
Financing Motivations	
Reasons seeking financing.	IR1-IR2
Ease of obtaining financing.	IR3
Types of Investment Products	
What financing structures are they currently using?	TY1
Share of financing structures in portfolio?	TY2
Investment Process	
State of project development cycle the stakeholder enters 2013 versus 2018.	P1
Reason for difference.	P2
Market Barriers	
Identify barriers encountered in last 12 months (all non-participants) and in first year firm began developing clean energy projects.	MB1-MB2
Opportunities for NYGB to overcome market barriers.	MB3-MB4

Screening Questions

For this survey, we are contacting developers who are aware of and have experience developing clean energy projects. Clean energy projects refer to the deployment of renewable energy technologies, (e.g., wind, solar, bioenergy), energy efficiency measures, microgrids, sustainable transportation, and energy storage projects.

When responding, if you want to return to the previous questions, please use the back arrow within the survey and NOT the browser command. By clicking the save button, you will be able to return to the survey if you are unable to complete it in your first attempt.

Enter the 6-digit survey identification number as referenced in NYSERDA's email. If you are unable to locate the number, please call DNV GL at (707) 820-4400 or email: nygreenbank@dnvgl.com

Enter 6-digit survey ID here:

SC1. Are you aware of or have experience developing clean energy projects related to one or more of the types of clean energy technology categories listed below?

- Renewable energy technologies (e.g., bioenergy, solar PV, wind)
- Energy efficiency
- Electric vehicle infrastructure
- Microgrids
- Energy storage projects

	Response	Survey logic
1	Yes	Go to SC3
2	No	Go to SC2
3	Don't know	END SURVEY
4	Prefer not to answer	

SC2. Can you please provide the contact information for the person at your firm who is aware of or has experience with developing clean energy projects?

	Response	Survey logic
1	Yes [TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	
3	Don't know	
4	Prefer not to answer	

SC3. Are you involved in developing clean energy projects?

	Response	Survey logic
1	Yes	Go to G1
2	No	Go to SC4
3	Don't know	END SURVEY
4	Prefer not to answer	

SC4. Can you please provide the contact information for the person at your firm who is involved with developing clean energy projects?

	Response	Survey logic
1	Yes [TEXT BOX FOR NAME, TELEPHONE, EMAIL ADDRESS]	END SURVEY
2	No	

Geography

G1. Does your firm develop clean energy projects in states other than New York State?

	Response	Survey logic
1	Yes	Go to G2
2	No	Go to A1
3	Don't know	Go to A1

G2. What states do you target for developing clean energy projects?

	Response	Survey logic
1	[Textbox]	Go to G3

[Programming Note]

If more states selected than New York, Go to G3.
If only New York selected, Go to A1.

G3. Do you develop different types of clean energy projects in New York State than you do in other states?

	Response	Survey logic
1	Yes	Go to G3a
2	No	Go to A1
3	Don't know	
4	Prefer not to say	

G3a. How do your projects differ in the various states?

	Response	Survey logic
1	[Textbox]	Go to A1

Awareness of Clean Energy Finance and NYGB

A1. Are you aware of NYGB and its activities in the market place?

	Response	Survey logic
1	[Yes]	Go to A2
2	[No]	Go to DP1

A2. How did you first learn of NYGB? [pick one with other option]

	Response(s)	Survey logic
1	NYSERDA [Checkbox]	Go to A3
2	NYGB's website, or other information provided by NYGB (e.g., RFI, RFP, etc.) [Checkbox]	
3	Events that NYGB hosted or participated in. [Checkbox]	
4	Colleagues within my firm [Checkbox]	
5	Lender and/or investor outside of my firm [Checkbox]	
6	Project developer, ESCO, technology vendor [Checkbox]	
7	General media (social media, articles, interviews) [Checkbox]	
8	Industry trade group [Checkbox]	
9	NYS Governor's Office, NYSERDA, or NYGB announcements [Checkbox]	
10	Don't recall [Checkbox]	
11	Other, specify [Textbox]	

A3. How familiar are you with NYGB's services and financing products?

	Response	Survey logic
1	Familiar	Go to A4
2	Somewhat familiar	Go to A4
3	Not Familiar	Go to DP1
4	Don't know	Go to DP1
5	Prefer not to answer	Go to DP1

A4. Which NYGB services and financing products are you familiar with? Check all that apply.

	Response(s)	Survey logic
1	Construction facilities [Checkbox]	Go to A5
2	Bridge facilities [Checkbox]	
3	Term facilities [Checkbox]	
4	Warehousing/aggregation facilities [Checkbox]	
5	Credit enhancements [Checkbox]	
6	Not familiar with specific services or products [Checkbox]	
7	Prefer not to answer [Checkbox]	
8	Other [TEXTBOX]	

A5. Has your firm considered working with NYGB?

	Response	Survey logic
1	[Yes]	Go to DP1
2	[No]	Go to A6
3	Don't know	Go to A6
4	Prefer not to answer	Go to A6

A6. What would make it more likely for your firm to consider working with NYGB?

	Response	Survey logic
1	[Textbox]	Go to DP1

Description of Developer and Project Portfolio

DP1. Select the earliest year, from the options presented below, that best represents when your firm first became active in the following two activities:

		Year first active	Survey logic
DP1.A1.C1	Infrastructure or energy development, generally	No activity	END SURVEY
		2013, 2014, 2015, 2016, 2017, 2018	Go to DP2
		Prior to 2013	Go to DP2
DP1.A1.C2	Clean energy asset development, specifically	No activity	END SURVEY IF SAME AS DP1.A1.C1
		2013, 2014, 2015, 2016, 2017, 2018	Go to DP2
		Prior to 2013	Go to DP2

DP2. What types of clean energy technologies and projects has your firm considered developing and what types of technologies and projects has your firm completed a transaction since [DP1.A1.C2]?

DP2a. Why did your firm not complete the transaction?

		<PICK ONE> Considered/ completed transaction (DP2)	<If DP2 = considered then ask> Why did your firm not complete the transaction? (DP2a)
1	Bioenergy	[list option]	
2	Combined Heat and Power (CHP)	[list option]	
3	Electric Vehicle Infrastructure	[list option]	
4	Energy Efficiency	[list option]	
5	Energy Storage	[list option]	
6	Microgrids	[list option]	
	Solar PV		
7	Commercial & Industrial	[list option]	
8	Community Distributed Generation	[list option]	
9	Residential	[list option]	
10	Utility-scale	[list option]	
	Wind	[list option]	
11	Offshore	[list option]	
12	Small-scale Onshore	[list option]	
13	Utility-scale Onshore	[list option]	
14	Other	[Textbox]	
15	None of these	[list option]	

DP2b. [IF DP2A=Other] What "other" clean energy technologies and projects has your firm considered?

	Response	Survey logic
1	[Textbox]	Go to DP3

DP3. For each type of clean energy technology or project your firm has developed since [DP1.A1.C2], did your firm use any of the following financial products? Check all that apply.

	Response(s)	Survey logic
1	Construction facilities [Checkbox]	Go to DP4
2	Bridge facilities [Checkbox]	
3	Term facilities [Checkbox]	
4	Warehousing/aggregation facilities [Checkbox]	
5	Credit enhancements [Checkbox]	
6	Not familiar with specific services or products [Checkbox]	
7	Other [Textbox]	

DP4. In the past 12 months, approximately how many projects did your firm complete, by category? [Ranges are acceptable]

	Total number of transactions (#)	Past 12 months
1	All infrastructure or energy projects, generally	
2	All infrastructure or energy projects in New York State, generally	
3	All clean energy developments, specifically	
4	All clean energy developments in New York State, specifically	

DP5. What was the approximate average dollar value of those projects?

	Average dollar value of transactions (\$)	Past 12 months
1	All infrastructure or energy projects, generally	\$
2	All infrastructure or energy projects in New York State, generally	\$
3	All clean energy developments, specifically	\$
4	All clean energy developments in New York State, specifically	\$

DP6. How has your firm’s pipeline of clean energy projects changed in aggregate dollar value, from [DP1.A1.C1] to 2018? For example, your firm’s pipeline of infrastructure or energy projects has increased in value by 20% in the period with the value of clean energy projects increasing by 35% in the same period.

	Transaction type	% Change
1	All infrastructure or energy projects, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
2	All infrastructure or energy projects in New York State, generally	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
3	All clean energy developments, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]
4	All clean energy developments in New York State, specifically	[Dropdown list increased by/decreased by/stayed the same/% Changed (Absolute)]

[Programming Note]

If D6 > 0% then [increase] in DP6a.
 If DP6 = 0% then [stay the same] in DP6a.
 If DP6 <.0% then [decrease] in DP6a.
 If DP6 = Don’t know, then skip to DP7.

DP6a. What was the main reason why the aggregate value of clean energy projects in your firm’s pipeline in New York State [increased/decreased/stayed the same] between [DP1.A1.C1] and 2018? [Pick one]

	Reason(s)	Main reason (DP6a) – limited to one response
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No reason	[Exclusive]
12	Prefer not to answer	[Exclusive]

DP6b. What are some of the other reasons why the aggregate value of clean energy-related projects in your firm’s pipeline in New York State [increased/decreased/stayed the same] between [DP1.A1.C1] and 2018?

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No other reason	[Checkbox]

DP7. Looking forward to 2019, how do you expect the share of clean energy projects in your firm’s New York State pipeline to change in the future, by aggregate value?

For example, you expect your firm’s overall pipeline to increase in value by 20% in 2019 with the value of clean energy projects increasing by 35% in the same period.
[Pick one]

	Response	Survey logic
1	Clean energy developments in New York State will increase	Go to DP7a
2	Clean energy developments in New York State will decrease	Go to DP7a
3	Clean energy developments in New York State will stay the same	Go to DP8
4	Not investing in 2019 [Checkbox]	Go to DP9
5	Don’t know [Checkbox]	Go to DP9

DP7a. You mentioned your firm’s pipeline of clean energy projects may change. By what percent do you expect it will increase or decrease?

		Response	Survey logic
1	Clean energy developments in New York State will increase	% Changed (Absolute)]	Go to DP8
2	Clean energy developments in New York State will decrease	[% Changed (Absolute)]	Go to DP8

[Programming Note]

If DP7 > 0% then [increase] in DP7a.
 If DP7 = 0% then [stay the same] in DP7a.
 If DP7 < 0% then [decrease] in DP7a.

DP8a. What is the main reason why the aggregate value of New York State clean energy projects in your firm’s annual pipeline will [increase/decrease/stay the same] in the future?

	Reason(s)	Main reason
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	Other	[Textbox]
11	No other reason	[Checkbox]

DP8b. Are there other reasons why the share of New York State clean energy projects in your firm's annual pipeline will [increase/decrease/stay the same] in the future? Check all that apply.

	Reason(s)	Other reason (b)
1	Increased availability of economically viable projects	[Checkbox]
2	Increase in credit-worthy project sponsors	[Checkbox]
3	Improvements in ROI	[Checkbox]
4	Improved performance data (counterparty, technology, asset class)	[Checkbox]
5	Improved standardized terms and practices	[Checkbox]
6	Favorable regulatory frameworks	[Checkbox]
7	Maturity/efficiency of technology	[Checkbox]
8	Decreased project/equipment costs	[Checkbox]
9	Increased focus on impact/social investing	[Checkbox]
10	No other reason(s)	[Checkbox]
11	Don't know	[Checkbox]
12	Prefer not to answer	[Checkbox]
13	Other	[Textbox]

[Programming Note]

[IF DP1.A1.C2 = NO ACTIVITY, SKIP TO DP10.].

DP9. Thinking about clean energy asset ownership, what proportion of your end use customers opted for ownership of the asset versus entering into a lease or PPA contract?

		% of asset ownership	If none or other
1	In [DP1.A1.C2]	[Enter %]	None/Do not work with third party owners/DK/NA
2	In 2018	[Enter %]	None/Do not work with third party owners/DK/NA

DP10. How important are the following project drivers in developing clean energy projects or to your clean energy project portfolio, generally?

	Project drivers	Influence on projects or portfolio
1	Energy efficiency programs or demand response programs offered by utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
2	Other services or assistance offered by utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
3	Changing regulatory requirements for energy efficiency and/or demand response	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
4	Availability of on-bill financing offered by utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
5	Availability of PACE programs offer financing for renewable and energy efficiency projects	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
6	Interconnection requirements specified by regulators and/or utilities	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
7	Environmental and building permitting regulations	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
8	Overall regulatory environment	No influence/ Is moderately influential/ Is extremely influential / N/A / DK
9	Other	[Textbox] DP10a

DP10a. [If DP10 is other] What "other" project drivers are important in developing clean energy?

	Response	Survey logic
1	[Textbox]	Go to IR1

Financing Motivations

This section focuses on the underlying reasons project developers need access to capital from lenders.

IR1. Please describe some of the reasons why your firm seeks financing for clean energy projects.

1	Reason	Response
2	Inadequate capital for balance-sheet construction	[Checkbox]
3	Lack of tax appetite to monetize incentives	[Checkbox]
4	Desire to fully leverage capital to facilitate other developments	[Checkbox]
5	Leveraged returns for project sponsor	[Checkbox]
6	None	[Checkbox]
7	Other	[Textbox]
8	Don't know	[Checkbox]

IR2. Under what circumstances would your firm opt for project financing instead of corporate financing?

	Response	Survey logic
1	[Textbox]	IR3a

IR3. Thinking back to the past 12 months, how difficult has it been to secure the following forms of financing for clean energy projects?

		Past 12 months
1	Construction facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
2	Bridge facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
3	Term facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
4	Warehousing/aggregation facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
5	Credit enhancements	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA

IR3b. [SKIP IF DP1.A1.C2 = 2018] Thinking back to [DP1.A1.C2], how difficult was it to secure the following forms of financing for clean energy projects?

		[DP1.A1.C2]
1	Construction facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
2	Bridge facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
3	Term facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
4	Warehousing/aggregation facilities	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA
5	Credit enhancements	Not difficult / Moderately difficult/ Extremely influential difficult/ Don't know or NA

Type of Financing

TY1 Please check the financing products your firm uses or has used to finance clean energy projects.

		Please check <u>all</u> the financing products your firm used to finance clean energy projects <u>in the past 12 months</u> .	Check <u>all</u> the financing products your firm used to finance clean energy projects in [DP1.A1.C2]
1	Construction facilities	[Checkbox]	[Checkbox]
2	Bridge facilities	[Checkbox]	[Checkbox]
3	Term facilities	[Checkbox]	[Checkbox]
4	Warehousing/aggregation facilities	[Checkbox]	[Checkbox]
5	Credit enhancements	[Checkbox]	[Checkbox]
6	Other	[Checkbox]	[Checkbox]
7	Not familiar with specific services or products	[Checkbox]	[Checkbox]
8	None	[Checkbox]	[Checkbox]

TY2. Approximately what share (as a percentage) of your firm's clean energy project developments were financed using the following financing products?
(Note: Answers may sum to over 100% if the transactions used more than one financing product.)

		Past 12 months	[DP1.A1.C2]
1	Construction facilities	0-100% (10% increments)	0-100% (10% increments)
2	Bridge facilities	0-100% (10% increments)	0-100% (10% increments)
3	Term facilities	0-100% (10% increments)	0-100% (10% increments)
4	Warehousing/aggregation facilities	0-100% (10% increments)	0-100% (10% increments)
5	Credit enhancements	0-100% (10% increments)	0-100% (10% increments)
6	Not familiar with specific services or products	0-100% (10% increments)	0-100% (10% increments)
7	None	0-100% (10% increments)	0-100% (10% increments)
8	Other	0-100% (10% increments)	0-100% (10% increments)

TY2a. [If TY2= other] As indicated in your previous response, please specify the "other" type of investment products that are used

		Response	Survey logic
1	In the past 12 months	[Number box]	Go to IR1
2	[DP1.A1.C2]	[Number box]	

Investment Process

P1a. Let's consider "application" as the point in time a proposal is submitted to a financial institution to seek financing and the "transaction execution" as the point in time financing is executed ("wet" or "dry").

Based on your firm's experience, please estimate the typical amount of time, in months, between application and transaction execution in the following years:

		Response	Survey logic
1	In the past 12 months	[Number box]	Go to P1b
2	[DP1.A1.C2]	[Number box]	

P1b. At what stage in a clean energy project's or asset's lifecycle did/does your firm prefer to seek financing?

		Response	Survey logic
1	In the past 12 months	[List option]	Go to P1c if response = other
2	[DP1.A1.C2]	[List option]	

Project stage
Early-stage development
Mid-stage development
Construction stage
Initial operation
Operating facility (asset)
Expansion of existing project
No preference
Other
Don't know

P1c. Please describe what "other" phase your firm prefers to seek financing?

		Response	Survey logic
1	In the past 12 months	[If Other – Textbox]	Go to P2 if P1b1 ≠ P1b2 else Go to MB1a
2	[DP1.A1.C2]	[If Other – Textbox]	

[Programming note]

If all 2013: past 12 months pairs do not match, Go to P2.
If all pairs *do* match, Go to MB1.

P2. What caused your firm to change when they prefer to seek financing between
[DP1.A1.C2] and the last 12 months?

	Response	Survey logic
1	[Textbox]	Go to MB1

Market Barriers

MB1. Which of the following market barriers have prevented your firm from developing more clean energy projects in the past 12 months?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	LIST OPTIONS • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

MB2. Which of the following barriers prevented your firm from developing more clean energy projects in [DP1.A1.C1]?

		Level of barrier
1	Lack of economically viable clean energy projects, in general	LIST OPTIONS • Not a barrier • Moderate barrier • Significant barrier • Don't know • Not applicable
2	Lack of economically viable clean energy projects of sufficient size/scale	
3	Unfavorable tenor/maturity needs from project sponsor	
4	Limited market liquidity for this asset class	
5	Insufficient private sponsor equity	
6	Limited availability of tax equity investors	
7	Limited availability of financial hedging	
8	Less experienced project sponsors	
9	Creditworthiness of project sponsors	
10	Limited financial performance data	
11	Limited technology performance data	
12	Unattractive risk/return profile	

NYGB is a State-sponsored, specialized financial entity working with the private sector to increase investments into New York's clean energy markets. NYGB works with clients and counterparties to address investment barriers in the current clean energy capital markets by providing a variety of approaches and transaction structures.

MB3. What, if any, additional market barriers or challenges has your firm encountered in the clean energy financing market that you believe NYGB could help overcome? Select a statement that best aligns with your opinion:

	Response	Survey logic
1	There are some barriers NYGB could help my firm overcome	Go to MB4
2	There are no additional barriers NYGB could help my firm overcome	End Survey
3	Don't Know	
4	Refused	

MB4. Finally, how could NYGB help overcome those barriers?

	Response	Survey logic
1	[Textbox]	End Survey

Thank you for your participation in this survey.

APPENDIX H. CASE STUDY INTERVIEW GUIDE

EE AND Solar Client Interviews

- Why did your project need third party financing?
- Your financing involved a conventional lender and a partnership with NYGB. Was it your lender's idea to engage NYGB? If not your idea or some other stakeholder?
- Were there other financing partners under consideration? Why did you decide to go with NYGB?
- What were you able to accomplish in your project because of NYGB involvement? Was there no deal forthcoming otherwise, or just a smaller one?
- Have you generally been satisfied with the overall project financing and the role of NYGB?
- If you had to do the financing again now, is there anything you would do differently? If so, why?
- Would you work with NYGB again, should the opportunity avail itself?

Lender Partner Interviews

- Smaller scale solar developers three or four years ago faced challenges securing both construction and long-term financing. How difficult, if at all, was that barrier in your entering into a transaction?
- Three or four years ago there was limited private capital provider interest in supporting distributed energy projects, given very little history and financing track records. How much of a barrier was that for you?
- Were there other financing partners under consideration? Why did you decide to go with NYGB?
- To what degree did partnering with NYGB help you overcome these barriers?
- In the fall of 2018, how formidable are these barriers today? Due to the developing track record in NYS? Other factors?
- In what specific ways did your engagement with NYGB help make this transaction work or work better?
- Does (or would) a secondary market for your portfolio of loans make a difference in your likely volume? Has NYGB's participation in securitization affected your marketing?
- Tell us how NYGB staff facilitated this project to make it better or faster?
- If you had to do the financing again now, is there anything you would do differently? If so, why?
- Would you work with NYGB again, should the opportunity avail itself?

APPENDIX I. SECONDARY DATA REFERENCES

NY Green Bank Documents

Quarterly Metrics Reports, Q3 2016 – Q4 2018.

Business Plan 2014-2018.

Metrics, Reporting, and Evaluation Plan Version 3.0, June 2016.

Transaction documents for portfolio including Green Light Memos, Transaction Profiles and Transaction Approval Memos.

Government and Trade Association Sources

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