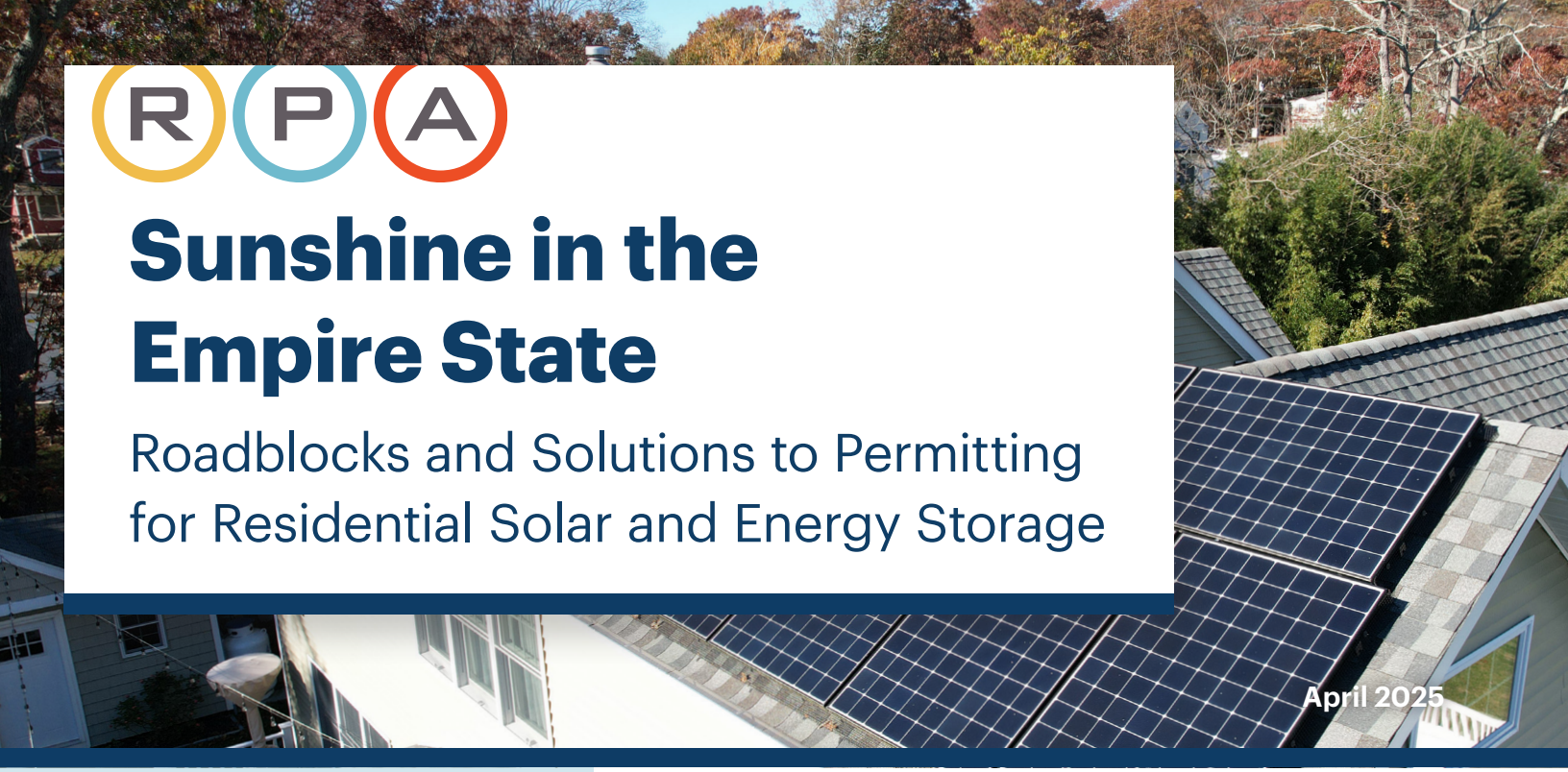

Sunshine in the Empire State

Roadblocks and Solutions to Permitting for Residential Solar and Energy Storage

April 2025

Contents

Executive Summary

Rooftop solar is central to New York meeting its 100 percent clean energy goals. While the state is on track to exceed its milestones for rooftop solar, it is falling short of its overall clean energy milestones.[1] Given that many of the barriers to large-scale renewables will persist in the foreseeable future (e.g. lengthy and complicated permitting and construction timelines, supply chain challenges, federal misalignment), New York will need to rely heavily on rooftop solar to keep moving toward 100 percent clean energy. Not only does the expansion of rooftop solar help advance New York towards its clean energy goals, it can — especially when paired with energy storage — democratize energy production, make communities less susceptible to power outages, prepare the grid for electrification, and help to reduce energy bills for working families

Despite how critical rooftop solar is to New York, barriers in residential permitting — the process to gain approval from local government to install solar equipment on homes — is prohibiting the state from realizing its full solar potential. These barriers increase the price tag of the solar energy system by thousands of dollars, delay installations, increase cancellation rates, and collectively result in fewer families going solar.

While the average permitting timeline in New York is about two weeks, permitting timelines can vary widely throughout the State, ranging from two days to years. In 2024, New York had the fifth slowest residential permitting timelines in the country.[2] Additionally, approximately, 22 percent of projects that apply for permits are cancelled, with contractors citing permitting delays as the biggest reason.[3] [4]

1 The City/Samantha Maldonado. New York on Track to Exceed Its Solar Targets as Other Climate Goals Slip. August 7, 2024.
2 Ohm Analytics. Clean Code. December 2024. *Timelines are based off of a sample, and there is no data for five states. Tied with Iowa for fifth slowest state.
3 Cook, et. al. Exploring the link between project delays and cancelation rates in the U.S. rooftop solar industry. 2021.
4 Ohm Analytics. Cancellation & Histogram Data. 2024. *Data from Ohm Analytics on six jurisdictions in New York also show an average of 32% for the cancellation rate.

To remove permitting barriers in New York, municipalities should adopt instant permitting for residential solar energy systems. Instant permitting allows the solar installer to submit detailed information about their proposed project – including system design and equipment specifications – to a software platform, which automatically evaluates whether the proposed solar system is compliant with the applicable building codes and safety standards. If the application meets all of the requirements, permit approval is granted immediately, allowing construction to begin that day. These proven and tested automated permitting platforms can help alleviate many of the challenges New York homeowners face in "going solar."

For this report, we interviewed 13 solar and energy storage installers and distributors, clean energy advocates, and industry representatives about their experiences permitting in New York jurisdictions. In those conversations, our research found common challenges seen in multiple municipalities across the state. Some of these challenges include:

- **Permit-review delays:**
  Slow permitting turn-around times make it difficult for solar installers to budget out projects and keep projects on track. Installers cite that many municipalities are short-staffed, which lengthens the permit-review timeline. These delays can result in frustrated customers, some of whom cancel their solar contracts – leading to fewer solar installations in the state.
- **Poor communication:**
  Poor communication from municipalities can lead to limited awareness by installers of certain project requirements or a lack of visibility of progress of the permit application, making it difficult to provide their customers with an accurate timeline. This can lead to installers facing repeated attempts to obtain the permit, which can lengthen permitting timelines, and ultimately raise costs to the homeowner.
- **Architectural Review Boards (ARBs) with strict guidelines:**
  Many municipalities require solar projects to be approved by ARBs with strict aesthetic guidelines and additional levels of review before permits are granted. Such strict guidelines require solar installers to design less optimal systems (e.g. forcing solar panels to the back of the roof where there is less sunlight), leading to lower system efficiency and reduced return on investment for homeowners. They also increase the resources that must be expended on acquiring the permit, lengthening the entire project timeline by requiring multiple meetings, spread out over months.
- **Land survey requirements:**
  Some New York jurisdictions require a land survey of the property to be included in the permit application. A land survey is a document showing the exact property lines and any structures on that property; it is irrelevant to the safety or design of the solar system. If a municipality does not have the homeowner's land survey on record, it can drive up the cost of the permitting process by hundreds or thousands of dollars by requiring the installer (or homeowner) to contract out a surveyor.
- **Antiquated processes:**
  Municipalities, particularly smaller ones, often have outdated and cumbersome processes, including requiring hand-written, paper applications and issuing hand-written permits. These barriers slow down projects and drive up costs.
- **Differing local rules and regulations**:
  The patchwork of differing local rules and regulations around solar permitting across municipalities, makes it difficult for solar installers to plan projects with certainty, due to unpredictable permitting timelines. Ultimately, this drives up costs for families looking to go solar, and reduces the number of projects that could be installed

Like solar energy systems, the timeline for obtaining permits for solar batteries can vary widely as well. Because they are typically placed under more scrutiny than solar systems the process can last years, with some municipalities having de facto or de jure bans on batteries. Batteries charged from solar panels are a crucial component of New York's goal of 70 percent clean energy by 2030 and a zero-emission grid by 2040, as they provide communities with carbon-free electricity once the sun sets.[5]

5 NYSERDA. Renewable Energy. 2024.

The experience of solar installers in New York revealed several municipalities in which obtaining a permit is especially challenging for many of the reasons detailed above. These municipalities and the primary reasons for their slow process include:

- **New York City:**
  Misalignment or lack of code coordination between authorities having jurisdiction; a de facto energy storage ban due to unique requirements from the Fire Department that were intended for large scale storage systems.
- **Babylon:**
  Unnecessary and excessive application requirements (e.g. review from a Professional Engineer, physical and digital submission requirements); assignment of application review to only one staff member, lengthening the process.
- **Long Beach:**
  Handwritten application required; strict municipal guidelines on energy storage setbacks from property line.
- **Floral Park:**
  Strict and lengthy Architectural Review Board (ARB) review process; overburdensome paperwork requirements in application process.
- **Garden City:**
  Strict and lengthy Architectural Review Board (ARB) review process (e.g. multiple meetings, requirements for installation on the back of a home).
- **Lynbrook:**
  Strict and lengthy Architectural Review Board (ARB) review process (e.g. multiple meetings, requirements for installation on the back of a home).
- **Southampton:**
  Overburdensome inspection requirements (e.g. requiring homeowners to be present in-person in a seasonal town).
- **Scarsdale:**
  Strict and lengthy Architectural Review Board (ARB) review process (e.g. limited review of projects at meetings can lead to six-month approval window).
- **Mount Vernon**:
  Poor communication from municipality; mismanaged applications, including lost documents; code issues (e.g. failure to use up to date state codes/misinterpretation of codes, leading to permit rejection).
- **Yonkers:**
  Requirements to hand-deliver full-sized plans; backlogged applications; inconsistency in plan reviews. Several regional installers have stopped working in the City due to these issues.
- **Ramapo**:
  Poor communication from municipality; notary requirements.

Introduction

Rooftop solar is central to New York meeting its lofty clean energy goals — it seeks to have 70 percent of its electricity generated by renewable energy by 2030 and a completely emission free grid by 2040. While the state is on track to exceed its milestones for rooftop solar, it is falling short of its overall clean energy milestones.it.[6] Given that many of the barriers to large-scale renewables will persist in the foreseeable future (e.g. lengthy and complicated permitting and construction timelines, supply chain challenges, federal misalignment), New York will need to rely heavily on rooftop solar to keep moving toward 100 percent clean energy. Not only does the expansion of rooftop solar help advance New York towards its clean energy goals, it can — especially when paired with energy storage — democratize energy production, make communities less susceptible to power outages, prepare the grid for electrification, and help to reduce energy bills for working families

New York is a leader among states in solar installation, ranking 8th in the Nation for total solar installed.[7] Despite having a wide array of incentives and the Unified Solar Permit, there are local level challenges preventing New Yorkers from fully 'going solar'. In some New York municipalities, for example, the time it takes to permit a solar energy system can take 70 days or more.[8] A longer permitting timeline means increased costs for the homeowner and a longer amount of time without the cost savings solar provides. For the state to remain a solar leader, it must overcome local level challenges and adopt an instant permitting platform that would help the state implement more solar in less time.

To better understand the challenges that lead to solar permitting delays, we interviewed 13 solar and energy storage installers and distributors, clean energy advocates, and industry representatives about their experiences permitting in New York jurisdictions.The following report profiles several jurisdictions that were identified as particularly problematic in providing residential solar and storage permits, , and summarizes a common set of challenges that are at the root of delayed solar implementation. We reached out to all of the jurisdictions profiled, however we were only able to get a hold of Floral Park and New York City Department of Buildings.

6 The City/Samantha Maldonado. New York on Track to Exceed Its Solar Targets as Other Climate Goals Slip. August 7, 2024.
7 SEIA. New York. 2024.

Case Studies

To illustrate permitting challenges throughout New York, the following section features case studies of municipalities that were identified by solar installers, clean energy advocates, and industry professionals as having particularly problematic permitting processes. While only a subset of problematic municipalities, their overlapping challenges offer insight for policy improvements at the state level.

NEW YORK CITY

Three Days — Three Months Permitting Time[9]

New York City's complex and bureaucratic permitting process can make it challenging to get residential solar energy systems installed, and nearly impossible to get residential energy storage systems installed. In order to make the process easier for all installers and contractors, and to reduce costs for residents seeking building permits, the City, last year, launched their permitting portal for all building applications. The portal is intended to streamline the process and ensure paperwork is digitized, further incentivising residents to pursue solar. Despite these efforts, installers still face significant permitting challenges in New York City, including:

- Code coordination issues between authorities having jurisdiction
- Overburdensome paperwork requirements
- A de facto energy storage ban

Code Coordination

Perhaps the most challenging roadblock in getting solar systems installed in New York City is the lack of coordination between the separate authorities having jurisdiction (AHJs) that installers must communicate with in order to get permits. AHJs in New York City include the City's Department of Buildings (DOB) Construction Inspections Development Unit and the electrical inspectors and code officers within the DOB, the Fire Department (FDNY), the Landmarks Preservation Commission, and NYSERDA. Con Edison, the City's electricity provider, also has a say in the siting of solar panels. Many of these AHJs abide by different codes that were written and adopted at different times. For instance, the DOB uses building codes from 2022 and electrical codes from 2011, while NYSERDA uses their own 2014 codes in the city. The lack of coordinated use of codes makes it challenging for installers to comply. For example, the 2011 electrical codes state that detailed plans must be available upon request of the Department of Buildings, while the 2022 codes do not, leading to confusion as to what plans installers are required to submit.

The FDNY has some of the most restrictive codes in New York, requiring a wider path on the roof than State guidelines. This limits the amount of solar that can be placed on a roof. The Landmarks Preservation Commission has specific rules around sightlines, requiring any installed solar panels to keep a clear view of any landmarks. Complying with sightline rules may limit the type of panel that is installed. For example, the sightline rule may prohibit a solar canopy from being installed, requiring instead, a standard tilt rack panel. The type of solar system affects the total cost of the project, but the challenge with this rule is navigating the process to follow the requirements and determining whether the proposed system is in compliance with code.

Con Edison also has its own requirements. Since the bulk of its electrical system is underground, they require special equipment not used in other jurisdictions to connect the underground service lines to the solar system, and occasionally installers will need the New York State Public Service Commission to clarify requirements. In addition to differing requirements from one agency to another, local inspectors and code officials may have different interpretations of the code from one borough to another. The leadership of a borough office informs the staff on how to interpret the code, and while installers cite that the City is in a period of cohesion right now, that has not always been the case in the past and can change very quickly.

The Department of Buildings is fairly responsive to questions via email or phone, although asking a question via the portal directly may take up to two weeks for a response, even for a quick question. The Department of Buildings has such a challenging permitting system that they even have full time project advocates to assist installers and customers with any permitting, construction, or inspection issues they may have. Project advocates help guide installers through the permitting process if their application becomes lost or stuck in one department or another. While helpful to installers, they are the symptoms of a slow system that sometimes requires an additional push to get permits approved. As one interviewee put it, "that it has to exist points to the fact that it is challenging, and they know it".

Overburdensome Paperwork

Before a permit is even in process, the customer must log on to the portal at least twice to fill out the tax abatement form and another time to fill out the initial application and tenant protection plan (a document outlining the steps the contractor and

9 Permitting timeline based off of interviews with solar installers and feedback from NYC DOB. Permitting timelines can vary due to project type and complexity.

building owner will take to protect the tenant(s) during construction, necessary even for single family homes and owner occupied homes)[10], for a minimum of three times per project extending the timeline two to three weeks in some cases.

De Facto Energy Storage Ban

Installing an energy storage system in New York City is extremely challenging, if not completely impossible. The FDNY's challenging review and permitting process is so stringent, it constitutes a de facto ban on energy storage systems. Installers have reported the process taking years to result in installed projects, leading several regional installers to no longer offer energy storage systems for customers in the City. Specifically, the FDNY has a requirement, unique to energy storage systems, that a model has to have gone through FDNY specific burn tests in addition to the industry standard Underwriters Laboratories Test Method 9540A, of which there are nine models that have been issued a certificate of approval.[11] The FDNY reviews permits on a case by case basis, including those permits that include one of the nine accepted models. Additionally, installers must receive a Certificate of Fitness from the FDNY determining whether they are fit to supervise the installation. To obtain a Certificate of Fitness, one must take a computer based test at the Fire Department Headquarters and pay a $25 fee. While not difficult for an installer based in New York City, it becomes a burden for installers based in Westchester County or Long Island. The certificate is valid for a three year period.[12] Installers have reported that for an energy storage system to be approved in New York City, it must be on a standalone home, which is uncommon in most of the City. These requirements go above and beyond any other jurisdiction in New York, and likely the country. They are unnecessarily redundant, as there are already existing mechanisms and tests to ensure the safety of residential energy storage systems.

In addition to FDNY rules, energy storage systems must receive approval from the Office of Technical Certification & Research (OTCR) under the DOB, which hires outside consultants to review projects. Installers have had energy storage projects that have gone through years of evaluation and have had processes change, applications change, and even the permits themselves change throughout the application period. For example, one installer worked on a battery storage project for over six years. During that time, the plan reviewer overseeing the project changed multiple times, starting the process over again, and the model of batteries as well as the code changed, forcing the installer to design new plans and resubmit them every time. Restarting the process each time the plan reviewer changes, codes change, or the allowed batteries change cause projects to drag on for years. At the time of interviews, the DOB was actively working with the FDNY to streamline the process and come to a solution where energy storage units are viable in New York City. Those talks have since stalled and NYSEIA is working to introduce legislation to the City Council to enable energy storage systems in New York City.

As a result of the slow and complicated process, most battery systems do not get built, and some New York City based installers do not even offer energy storage systems anymore.

LONG ISLAND

In 2009, the Long Island Unified Solar Permit Initiative launched, aiming to deliver a single, online, streamlined permit that could be used by every local government on the Island. While initially several municipalities adopted the permit - driven by Long Island Power Authority (LIPA) incentives — in the last few years jurisdictions have been moving away from it. Today, few municipalities on Long Island have fully online permitting systems (such as the Town of Huntington and the Town of Brookhaven), with some slowly shifting to an all online model. The rest of the municipalities on Long Island require physical copies often in tandem with digital copies, either hand delivered or mailed in, with some municipalities still using a carbon copy paper system. There are several commonly described challenges found in Long Island municipalities, some of which differ from other parts of the State. These challenges include:

- Requirements for a copy of the land survey in the application
- Architectural Review Boards (ARBs) with strict guidelines
- Requirements that all other, associated permits, including non-structural permits, be approved before the application
- Strict application requirements
- Understaffed departments

While many Long Island jurisdictions have one or a combination of these permitting challenges, there are some jurisdictions that stand out as some of the most challenging

Babylon

30 days Median Permitting Time[13]

The Town of Babylon has unique requirements and challenges that can make it a difficult place to permit. These challenges include:

- Requiring a "wet" Professional Engineer stamp
- A generally slow permitting process
- Short-staffed and single staff review approach
- Physical and digital submission requirements
- Homeowner notary requirements

Babylon requires a "wet" Professional Engineer (PE) stamp and seal on their permit application, along with a handful of other municipalities on Long Island. A "wet" PE stamp requires a Professional Engineer to be contracted, review the system plans, and place a physical, inked stamp and signature on the document as digital stamps are not accepted. Wet PE stamps pose both a financial and logistical challenge, as they can cost hundreds to thousands of dollars in contracting costs and man hours, while

10 NYC DOB. Tenant Protection Plan. 2024.
11 New York City Fire Department. List of Approved Energy Storage Systems. November 2023.
12 New York City Fire Department. Notice of Adoption of New Fire Department Rule 3 RCNY 608-01. October 2019.
13 Ohm Analytics. Clean Code. December 2024.

finding and working with a PE lengthens the permitting process. Most municipalities in New York, and in the rest of the country, do not require any sort of stamp.

After the initial application is submitted, the plan review process typically takes four to six weeks. This length of time can be attributed to the small staff of the building department who have multiple responsibilities. Babylon differs from other municipalities in that only one member of staff can review a given permit application at a time instead of having multiple employees working on a permit concurrently. If an employee assigned to a permit goes on vacation or gets sick while reviewing applications, permits can be delayed by days, weeks or even months, since other staff members cannot take over the application process for the absent staff member.

The Town has a portal where installers can upload permit application packages, but if any other documents are needed that were not in the original package, physical copies must be delivered (by hand or certified mail) to the Town. Sending or delivering paperwork adds further time and cost to the process, particularly as installers may be headquartered hours away.

If a resident has previously worked with a separate solar company and has since switched to a new one, the Town requires a notarized letter stating they are switching companies, even if the previous company went out of business. For example, if a solar installer submitted an application for a permit, but went out of business, the homeowner then has to submit a signed and notarized letter telling the Town why they are switching companies and who the new company is This creates a challenge for both the installer and the resident, as the resident then must find a notary and the time to meet, and the installer has to wait until their customer notarizes their documents before they can proceed. Homeowner notarization requirements are an important consumer protection against bad actors. What poses a challenge to installers is when there is inconsistency between municipalities with notary requirements, which can lead to the requirement falling through the cracks. We reached out to the municipality for comment and received no response.

Long Beach

2 Weeks Average Permitting Time[14]

The City of Long Beach is generally a favorable place to install solar, but still has challenges in moving permits through more quickly, and has more significant barriers for storage, including:

- Requirements for handwritten and in-person delivery of applications
- Strict codes restricting the placement of energy storage systems

In 2019, Citizens Campaign for the Environment, a New York based nonprofit focusing on advancing strong environmental policy in the State, reviewed Long Island municipalities on how solar friendly they were. At the time of that study, Long Beach was found to have a six day average turnaround time.[15] Now, that has climbed to about two weeks on average.

The challenges in Long Beach's permitting process comes from the application itself. The application for both solar and energy storage systems is a physical, three page application that has to be handwritten and brought to the building department. Handwriting an application is an outdated process that takes longer than typing, takes longer to review, and can be a challenge for municipal staff – the speed at which they review handwritten applications is dependent on the handwriting of the installer. Requiring the permit to be hand delivered to the building department adds a burden to the installer – the installer may not be located nearby and it takes time away from their other projects.

While solar has a tedious, but straightforward permitting process, it has proven more difficult to permit energy storage systems. This is due in large part to the density of the neighborhoods which can make it more difficult to physically place energy storage systems that are code compliant, as there are strict requirements on setbacks in the code. Each building has to have a set amount of space in between them, which varies depending on the zoning area and lot size, and the placement of even compact energy storage units can infringe on that.[16] We reached out to the municipality for comment and received no response.

Floral Park

4-8 Weeks Average Permitting Time[17]

In interviews with installers, Floral Park was consistently identified as a challenging municipality to work in. This has been the case since at least 2019, when Citizens Campaign for the Environment rated them as having the longest turnaround time for solar permits at 136 days, in their 2019 Long Island Solar Report Card.[18] The slow turnaround time was attributed to the three main factors:

- Initial burdensome application requirements
- The Architectural Review Board (ARB) requirements

In Floral Park, the application requirements include a set of stamped plans with renderings and pictures, a copy of the completed application, a land survey, a glare analysis, elevation documents and others, delivered via email and physically on 11x17 paper. These requirements differ from other municipalities in the State, and require installers to either hand deliver packages or send them via certified mail, creating costs that would not occur for digital applications.

After the application is submitted, it goes in front of the Architectural Review Board (ARB). An ARB is a governing body within a local government that reviews building plans and enforces architectural standards and requirements across a municipality. These standards often vary from one municipality to

14 Permitting timeline based off of interviews with solar installers.

15 Citizens Campaign for the Environment. How Solar Friendly are Long Island Municipalities?. 2019.

16 Long Beach, New York. Appendix A – Zoning. May 7, 2024.

17 Permitting timeline based off of interviews with solar installers and municipal staff.

18 Citizens Campaign for the Environment. How Solar Friendly are Long Island Municipalities?. 2019.

another and can be both de facto and de jure. The Village requires all solar energy systems to avoid glare and preserve the aesthetics of the village, often requiring installers to place them on the back of a house. Before a permit can be approved, it must go through this lengthy ARB process often with multiple meetings. In Floral Park, the ARB meets only once a month.[19]

Once the ARB process is complete and a project is approved by the board, another application must be submitted to the building department which requires a notarized homeowner's authorization, a Nassau County assessors form, and another copy of the land survey, among other documents. As previously mentioned, while homeowner notarization requirements are an important consumer protection against bad actors, the inconsistency between municipalities creates confusion and can lead to missing application requirements. When contacted, Floral Park staff cited the leading causes of delays as installers submitting incomplete applications, leading to entire packages being sent back, and the ARB process with limited (monthly) meetings.

Garden City

4-6 Weeks Average Permitting Time[20]

Garden City is almost identical to Floral Park in the challenges installers report. In their 2019 Long Island Solar Report Card, Citizens Campaign for the Environment ranked them as the third slowest municipality for solar permitting on Long Island, with an average turnaround time of 54 days.[21] The number one issue cited by installers in Garden City is:

- Strict and slow Architectural Review Board (ARB) process

Similar to Floral Park, Garden City requires panels to be placed on the back of the house and applications must go through an ARB process before a permit can be granted. Restricting solar panels to only the back of homes can reduce the amount of energy that can be generated by the panels, which reduces the cost savings of the homeowner in the long term. We reached out to the municipality for comment and received no response.

Lynbrook

At Least 1 Month[22]

In conversations with regional installers, Lynbrook ranks as one of the most challenging and unpredictable municipalities to work in. The main challenges involve the Architectural Review Board, and include:

- Slow and unpredictable Architectural Review Board (ARB) process
- Strict ARB appeal requirement

While Garden City and Floral Park have ARB processes that are lengthy but predictable, Lynbrook's unpredictable ARB requirements delay project approval. While the initial process requires fewer documents than Floral Park, Lynbrook's ARB guidelines are aesthetic in nature and seemingly arbitrary, leading to installers having to change designs several times to be approved. Typically, the ARB requires solar panels to be placed on the back of the house, but there are also no set guidelines or written codes for exterior aesthetics, so there is no baseline to go off of when designing a project. Installers have reported needing to attend several meetings, over six in some cases, for a single project due to unclear requirements or requested changes. For example, while most often the ARB does not approve panels on the front of the house, there are exceptions to the rule that are not always clear, and installers have had projects with front mounted panels both approved and denied. Unpredictability makes it difficult for installers to set timelines and budgets. As one interviewee put it, the time it takes to get a permit can be "months and months and months".

In many municipalities, if an installer is having trouble with the permitting process, they can go to the Mayor or municipal board for assistance. In Lynbrook, however, the municipal code requires a project to be rejected before taking it up with the Mayor or Village Board. Oftentimes the ARB will simply adjourn the meeting instead of rejecting a design, leading to more meetings instead of a quick decision from the Village Board or Mayor. Residents must be in attendance for all ARB meetings, or they will not proceed. Installers must coordinate with their client and the ARB to find a meeting that works for the client – an added headache for the homeowner. The lengthy and unpredictable ARB processes has led to long wait times and installers taking a loss on projects due to difficulty in estimating how long the permitting process will take. We reached out to the municipality for comment and received no response.

Southampton

2 Weeks — Several Months Average Permitting Time[23]

Southampton is a relatively smooth town for the initial solar permitting application, but gets more difficult when closing out the application and setting up the final inspection. "Closing out" refers to completing the entire process – the permit has been approved, the final inspection is complete, and the panels are installed and hooked up to the utility and the home. The challenges in closing out permit applications include:

- All parts of the property need to be up to code by the final inspection
- Homeowners must be present for the final inspection

For the final inspection, all parts of the property must be up to code, regardless of whether or not it has anything to do with a solar permit. For example, a permit could fail if a fence around a pool was not the correct height, or the address number on a house was not sufficiently visible from the street. These requirements are unrelated to the structural integrity of the solar system and the roof, and do not relate to the safety of the system that is

19 Floral Park Architectural Review Board. Solar/Photovoltaic System Review Requirements. May 22, 2023.
20 Permitting timeline based off of interviews with solar installers.
21 Citizens Campaign for the Environment. How Solar Friendly are Long Island Municipalities?. 2019.
22 Permitting timeline based off of interviews with solar installers.
23 Permitting timeline based off of interviews with solar installers.

being installed. It also burdens the homeowner, as they may not be aware that a feature is not up to code, and they then must start another permitting or remediation process.

Additionally, the homeowner must be present during this inspection. Southampton is a seasonal town, so installers have to schedule inspections during the on-season summer months, and must schedule a time when all parties (the homeowner, inspector, and installer) are available. The requirement for homeowners to be present for inspections means there is a very small window of opportunity and ends up drawing out the permitting process,leading to a slowdown in the entire process. We reached out to the municipality for comment and received no response.

WESTCHESTER COUNTY

When the New York State Unified Solar Permit was first released in 2014, many Westchester County municipalities opted to adopt it. Among those early adopters, three stand out as having by far the most residential solar installs. Yonkers, Greenburgh, and Cortlandt each adopted an online, streamlined permitting process for residential solar in 2014 and 2015 in conjunction with the Unified Solar Permit, and now account for nearly half of residential solar installs in the County. The three also have a solar permitting process written into their code, along with 14 additional municipalities in the County. In total, half of the municipalities have adopted a specific solar variation to the building permit, while the rest are still using the standard building permit. Solar variations can range from a specific solar form to reduced permitting fee, and aim to make the solar permitting process easier, leading to more total solar installations in municipalities with variances than without.

While Westchester County may have been an early adopter of solar, the rate of installs has not been evenly distributed, nor has the process been unified across the whole county. The permitting process in Westchester can vary widely from one municipality to the next. A village within a town or city can differ greatly from the town or city itself – in the village of Croton-on-Hudson, if you apply for a permit on a Friday, you will likely have it by Tuesday, but in Cortlandt, the larger town, it could take two weeks. As one interviewee said, the process and timeline can vary greatly just a few miles down the road. Today, most municipalities in Westchester county use an online permitting system, but there are still some that use physical applications. Common challenges seen in Westchester County include:

- Strict Architectural Review Board (ARB) processes
- Poor communication from the local government
- Outdated codes or misinterpretation of State codes

Scarsdale

1-6 Months Average Permitting Time[24]

Scarsdale has a simple initial application process, but permits get slowed down in the Architectural Review Board process. Much like Lynbrook on Long Island, Scarsdale has an ARB that focuses on aesthetics of the system, usually requiring the system to be situated on the back of the house, although applications are only required to be reviewed by the ARB if the building inspector refers a project to the board. If an application does not pass in the first meeting, it can take several meetings before they are approved. The ARB (or BAR as they call it in Scarsdale) meets twice a month but only takes up to 18 total applications per meeting, including non-solar applications, so project approvals can be delayed if there is no space to schedule them – up to six months in some cases.[25] Long ARB processes make it difficult for installers to budget properly, driving up costs for homeowners, and the aesthetic nature of the ARB can make it difficult for installers to correctly plan the structure of the panels. We reached out to the municipality for comment and received no response.

Mount Vernon

Up to 3 Years Permitting Time[26]

Mount Vernon has been consistently referred to as the most challenging city for solar permitting in the State. Problems in Mount Vernon include:

- Poor Communication from the local government
- Mismanagement of projects, leading to major permitting delays
- Inconsistent City codes compared to State codes
- Misinterpretation of codes, leading to rejected permits

Mount Vernon is typically very difficult for installers to reach via phone or email, forcing them to go in person to set up meetings. The unresponsiveness leads to projects dragging on for months or sometimes years, or even being cancelled. One installer recently had a project close after nearly three years of back and forth with the City. In that case, the City would have a question, get a response from the installer, and then weeks would pass before the application moves any further. . Despite regular outreach there is no easy way to track where installations were in the permitting process or given a timeline.

Additionally, Mount Vernon's solar code, adopted 2024, is based off of the 2015 NYSERDA code, not the 2023 updated code forcing installers to adjust the way they do business in Mount Vernon versus the rest of the state. City law also dictates that installers must use the standard building application process, instead of the state-approved solar specific process. The standard building application does not include solar specific information, requiring installers to include additional information, adding time and effort to the process.

24 Permitting timeline based off of interviews with solar installers.
25 Scarsdale, New York. Board of Architectural Review. 2024.
26 Permitting timeline based off of interviews with solar installers.

Installers have also had issues where the code interpretation of staff is different from the actual code, leading to rejected permits. For example, installers have had permits rejected for a system design where solar panels were placed on roofs with different elevations on the same building. This is not based on actual code, but rather a differing interpretation of New York State code section R324. Code misinterpretations lead to extended permitting timelines or project cancellations.

For these reasons, residents find it difficult to invest in home solar and battery solutions in Mount Vernon. Installers are reluctant to work there due to the unpredictability of timelines and associated increasing costs. For both installers and residents, having to cancel projects is extremely disheartening, especially for residents trying to reduce their energy bills and their strain on the energy system. Installers refusing to work in a city leads to less competitiveness, and higher prices for installation services. We reached out to the municipality for comment and received no response.

In January 2025, after we had finished the interview process, we heard that Mount Vernon had improved their permitting process.

Yonkers

70 Day Median Permitting Time[27]

Yonkers, the largest city in Westchester County, is frequently described by installers as being a challenging municipality to permit in. While the City does have the most solar systems installed in the county, in the last few years it has become a more challenging place in which to work. Several regional solar installers have recently stopped working with the City, with some saying that it is on track to be the most challenging city in the State to work in. Issues cited by installers include:

- Strict initial application requirements
- Backlogged applications
- Lack of consistency between plan reviewers

The City of Yonkers follows standard NYSERDA requirements, which entails pulling four permits for solar and storage. On top of that, installers are required to submit full size plans, instead of letter-sized digital copies. Delivering full size copies adds time to the process and can increase costs by requiring an employee to physically drop them off. The City is extremely backlogged on permit applications, as well. One permit can take as long as six months to be reviewed. Interviewees have described the Yonkers process as "a slog" to work through since it is such a slow process. This makes it difficult for installers to create a timeline for their customers and makes it difficult to budget out projects, resulting in increased cost for customers.

Installers also cite that there is no consistency between plan reviews. An installer can submit two nearly identical plans and get back widely different comments, which often differ from the code. The type of comments an installer can get depends on the plan reviewer's interpretation of the code. In some cases, installers have had to elevate their concerns to the Building Department's commissioner in order to resolve the issue. This unpredictability can make it difficult for installers to know what information they need to include in their applications, causing applications to be rejected, leading to a resubmission process. Resubmitting an application can significantly lengthen the permitting process, increasing costs for the customer and creating a hassle for homeowners looking to install solar systems. We reached out to the municipality for comment and received no response.

ROCKLAND COUNTY

Ramapo

7 Days Median Permitting Time[28]

Rockland County has slowly become more difficult for solar permitting as solar has become more popular in the State. It is difficult to get a business license in the county, creating a steep barrier for a new solar company to enter. Inspectors in local governments are adopting a stricter "New York City" mentality towards solar, and are being trained to be more critical overall of solar systems, even departing from code. Ramapo is a prime example of the challenges faced in the municipalities across Rockland County. The two main challenges in Ramapo include::

- Poor communication from the local government
- Notarized homeowner authorization/affidavits

In Ramapo, if any comments or questions from the plan reviewers for the installers come out of the plan review, installers must reach out to the building inspector. The building inspector can be difficult to get in touch with, and can sometimes take two weeks to respond to questions. Installers have reported that when they do get comments, they are often unclear. As one installer put it, they received "out of left field" responses on their applications. Delays in response time and unpredictable comments extends the timeline to receive a permit, driving up costs.

The Town also requires a homeowner authorization affidavit, which has to have a wet stamp and be notarized, instead of having electronic signatures. Not every town in Rockland County requires such an affidavit, creating an inconsistency that causes confusion among installersWe reached out to the municipality for comment and received no response.

UPSTATE

The farther north and west you move in New York State, the less complex the permitting process becomes, while more local governments are switching from all paper to some sort of permitting portal. A remaining challenge Upstate, however, is that for some smaller, more rural areas there may be only one person who handles permitting for several different municipalities. Despite having less dedicated staff, the average turnaround time in many areas is about a week. While better than the state average, the timeline could be significantly shortened with an automated

27 Ohm Analytics. Clean Code. December 2024.

28 Ohm Analytics. Clean Code. December 2024.

permitting system. Some of the large cities, such as Albany, may experience a slowdown if too many people are filing permits at once, pushing the process four to six weeks.

In the counties surrounding Westchester County, the biggest challenge is that jurisdictions tend to require a signed and notarized homeowner authorization form and pre site inspection to ensure all parts of a property are up to code before issuing a permit, whether related to the safety of solar energy systems or not. New Paltz, Gardiner, and Hyde Park all require a signed and notarized homeowner authorization form. As previously stated, a signed and notarized homeowner authorization is an important form of consumer protection, but can prove challenging for installers if it is not a requirement in all municipalities in a county. A pre-site inspection also requires coordination with the homeowner and the building department to find a date and time to conduct the inspection, increasing the timeline and adding costs. Pre site inspections are fairly common in Dutchess and Ulster counties.

Gardiner and Newburgh require an inspector to inspect the roof before the permit can be issued. Often, installers will have to coordinate between the homeowner and the local government to determine what time and when to do an inspection, instead of the local government offering times they are available.

Policy recommendations

State and local governments should remove permitting barriers to residential solar projects by creating instant and standardized permitting processes, posting clear rules, basing requirements on safety, and performing remote inspections, among other best practices. These best practices should apply to solar projects that include home batteries and main panel upgrades.

INSTANT PERMITTING

One of the most effective ways to remove permitting barriers to families installing solar is to issue permits for code-compliant systems instantly. Multiple instant permitting platforms are available today. These platforms ask the contractor a series of questions to verify the solar system's design is up to code, and then approve the permit application automatically, allowing installation to begin. SolSmart, a federally funded program that recognizes local governments for encouraging solar development, has set instant permitting as the standard to receive platinum level certification.[29]

The most common instant permitting platform is SolarAPP+ (Solar Automated Permitting Platform), which was developed by the federal Department of Energy's National Renewable Energy Laboratory beginning in 2019 and is now being run by a nonprofit, the SolarAPP+ Foundation. Since SolarAPP+ launched in 2021, more than 250 cities and counties in 13 states across the country have signed up for the platform.[30] Many other cities and counties offer instant solar permitting using private-sector platforms such as Symbium or by building their own software.[31]

CLEAR AND CONSISTENT PERMITTING PROCESSES

New York should enforce their standard statewide processes and requirements for residential solar permitting, including adopting a mandatory version of the Unified Solar Permit. New York should standardize all components of the permitting process, such as the application, required documentation, code requirements, code interpretations, and steps to receive a permit. Local governments should not create amendments in building safety codes as national model codes and state codes already take into account variations in climate, geology, topography, environment, and housing.

All components of a solar system, such as a battery, and related work, such as a main panel upgrade, should be part of the solar permit application and follow the same standardized permitting process.

Where local processes persist to receive a residential solar permit, municipalities should post the process and requirements on their websites. All plan reviewers should adhere to the process and requirements set online to eliminate variation within the permitting office.

PERMITTING REQUIREMENTS BASED ON HEALTH AND SAFETY

Review of residential solar permit applications should be limited to the determination of whether the proposed system meets all health and safety requirements of building safety codes. Local governments and Architectural Review Boards should not deny a solar permit based on the aesthetics of the solar system, and should eliminate planning and zoning rules that can impede a homeowner from installing solar on their roof or a battery on their property. Rooftop solar should be allowed in historic districts and on historic homes.

ONE PERMITTING AUTHORITY PER PROJECT

Frequently, many jurisdictions – cities, counties, multiple departments within cities and counties such as the fire department and building department, other units of local government such as independent fire districts, and state entities – can be involved in permitting a single residential solar system. To streamline the permitting process, one authority should conduct permitting for all components of the system. If needed, government units can sign memoranda of understanding to allow one jurisdiction to enforce requirements that fall under another jurisdiction's purview. However, such agreements are often unnecessary in part because the code requirements are similar across subjects (e.g., the residential code requirements for home batteries mirror the fire code requirements for home batteries).

29 SolSmart. Moving from Gold to Platinum Designation with SolarAPP. 2023.
30 SolarAPP+. Where is SolarAPP+ available?. 2024.
31 Symbium. In which cities and counties can I use Symbium to secure an instant solar permit?. 2024.

REMOTE INSPECTIONS

Once a residential solar project is permitted and constructed, installers should have the option for a remote inspection, either via photos or recorded videos. The permitting office or a qualified and licensed third party should be able to conduct the inspection. Such inspections eliminate the need for the installer to make an additional trip to the job site at a later date and wait, frequently hours, for the inspector to arrive. The National Fire Protection Association (NFPA) has created a standard for remote inspections and the International Code Code Council (ICC) has created recommended best practices.[32] [33] These inspections should be offered at no greater cost, and shall be available with no greater delay, than in-person inspections.

Additionally, no more than one inspection per project should be required unless the first inspection is failed. In the event that different government units conduct inspections on different components of the system, the government units can sign memoranda of understanding to consolidate the inspections into one.

32 National Fire Protection Association. NFPA 915, Standard for Remote Inspections. 2024.
33 International Code Council. Recommended Practices for Remote Virtual Inspections (RVI). May 2020.

Research Methodology

This study was conducted over several weeks. To get an understanding of the state of solar in New York, we reviewed the NYSERDA Solar Electric Program Report dating back to 2000 through the year to date.[34] This dataset provides information on all installations in the State, both completed and in the pipeline, over the last 24 years. This data was used to identify specific towns and cities that may be difficult to work in, as it showed total project timelines. After the initial research, interviews were conducted. 13 solar installers, industry representatives, and advocates were interviewed. Multiple interviews were set up with several of these companies and organizations throughout the Fall of 2024 to get a broader view of permitting problems throughout the state. Interviewees identified the most challenging jurisdictions they have worked in, and shared what made them difficult. Additional informal interviews were also conducted at the New York Solar Summit in November 2024. Once the initial interviews were complete and jurisdictions were identified, all jurisdictions were contacted via email for an interview. The New York City Department of Buildings and Floral Park Department of Buildings were interviewed. No other municipality responded to the request for comment.

34 New York State Data. Solar Electric Programs Reported by NYSERDA: Beginning 2000. December 2024.

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