Sunnova Uses Two Sets of Books to

Defraud Investors, the IRS, DOE, Lenders and Homeowners

Table of Contents

Section 1: Executive Summary

Sunnova International is a publicly traded residential solar company that has recently come under significant financial pressure. The basis for the financial pressure is a relentless and seemingly uncontrollable cash burn.

The amount of cash burn made little sense to me when reviewing Sunnova's numbers, until I discovered that Sunnova maintains two sets of books. I found the second set of books hidden in an Excel file Sunnova uses to share its financials with investors and I discuss how you can access this data in Section 2. The numbers give insight into how Sunnova may be committing tax, securities, insurance and accounting fraud. Remarkably, what I found is a company that appears to be deliberately misrepresenting many critical financial metrics. These are not slight errors open to interpretation, rather they are shocking in their deliberateness, complexity and audaciousness.

Takeaways from reviewing the second set of books include:

- ***The Operations and Maintenance (O&M) expenses Sunnova reports to the IRS, SEC and Investors are less than the cost the Company actually incurs providing O&M.***
- ***Additionally, while Sunnova receives fees to provide O&M services, those O&M fees are far less than Sunnova's cost to provide the O&M services.***
- ***I believe the reason that Sunnova is understating their true O&M expenses is to increase the investment tax credits (ITCs) and other benefits they claim from the IRS and sell to third parties.***

The misstatement of O&M expenses has far-reaching implications for the accuracy of Sunnova's corporate financial statements as well as the integrity of their ABS securities. I will discuss this in more detail in Section 3. This misstatement also creates a large contingent tax liability and cash flow problems for Sunnova. I will discuss this in Section 4.

For Sunnova to survive they must "sell" more ***counterfeit*** tax ***credits*** to cover the legacy O&M expenses on older systems. When Sunnova does not grow rapidly, they will be unable to pay their legacy costs.

Section 2: Sunnova's Second Set of Books

When Sunnova publishes its quarterly reports, it also publishes an accompanying Microsoft Excel spreadsheet which contains hundreds of metrics regarding the Company and can be downloaded from the Company's IR website. The Excel file repeats the exact same numbers that Sunnova uses in its quarterly statements, but it does so in an easy-to-use format.

A quirk of the Sunnova spreadsheet is that virtually all visible cells are formulas, not values, and the formulas reference parts of the spreadsheet that are hidden and cannot be accessed or viewed without entering a password. However, Sunnova made a serious technical error when creating these spreadsheets because, while the Excel file itself is password protected, the data inside of the Excel file is not password protected. This oversight by Sunnova enabled me to access Sunnova's second set of books.

Because one can highlight hidden cells in Excel, I was able to access the data and formulas Sunnova hid from the public by simply copy-and-pasting the entire spreadsheet (including the hidden cells) into a different Excel file that is not password-protected. The hidden information includes an essentially complete, alternate set of numbers that directly mirrors the numbers Sunnova reports in its quarterly statement, but with key differences that I discuss below.

Since the Excel formulas remain intact, it can be easily proven that the numbers presented to investors in Sunnova's quarterly statements are directly calculated from this hidden, alternate set of numbers. However, I could now see that the difference between the raw hidden data and the numbers presented to investors comes from the addition or subtraction of a data set Sunnova labels "PLUGS", that are entered as values.

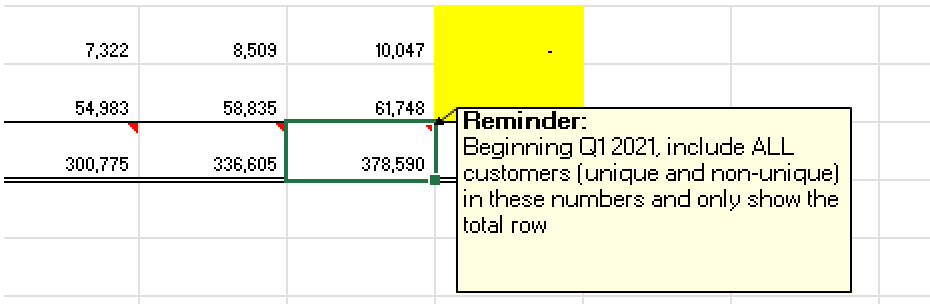
As of the time of writing, Sunnova has not secured the spreadsheet, so this process can currently be replicated by your team.

I believe that the full contents of this Excel file highlight a systematic attempt by Sunnova to understate expenses associated with the O&M of their portfolio of rooftop solar systems. The consequence of the understatement of O&M expenses is to inflate the fair market value (FMV) of Sunnova's systems to generate more ITCs than those systems qualify for under the law. I go into more detail on the economics of this Tax Implications in Section 4.

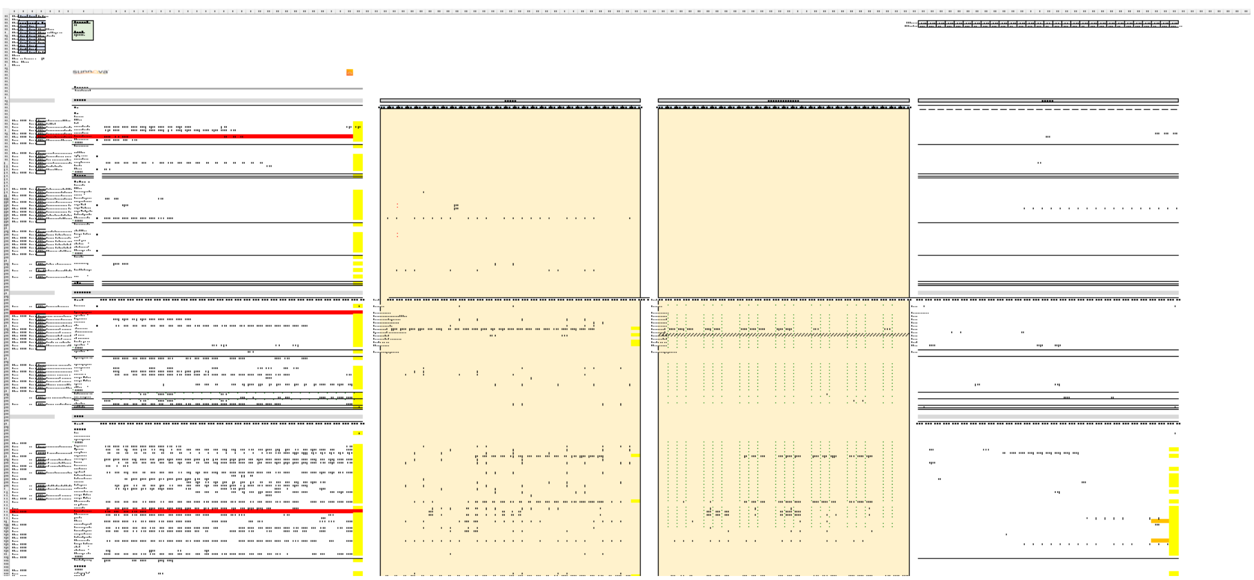
The second set of books includes hidden data, direct from Sunnova, that I believe could be considered misleading or misrepresenting the financial condition of the Company.

In addition, there are also a handful of written annotations (inserted by Sunnova) in the hidden sections of the Excel spreadsheet that provides a glimpse into the analyst's process and arguably their mindset and their intentions. We discuss these where appropriate, but the reader can see that they are common.

For Example, since 1Q2021, there have been written instructions (pictured below) hidden in the Excel file to manipulate customer counts and hide this from investors. We discuss the importance of this in Section 3.



Once you have the Excel file with all the hidden information revealed, you can zoom out and see that there appear to be four different spreadsheets that mirror each other in size and shape sitting next to each other in the same Excel tab.



Sunnova updates its spreadsheet quarterly. It consists of one public set of numbers and three hidden support spreadsheets that Sunnova did NOT intend to be put into the public domain. I refer to each of these four sets of numbers as layers. I believe that the three private layers contain working numbers that Sunnova executives manipulate to arrive at the publicly reported data. The layer on the far left, which is the layer containing the information Sunnova publicly releases, is not labeled. I will refer to this layer as the “Front End Data”. However, from left to right, the spreadsheets are referred to as follows:

1) Unnamed Section, which I call "**Front End Data"**: This refers to the leftmost layer. This refers to the investor numbers which were intentionally released in the quarterly report and are normally visible to the public.
2) "PLUGS": This refers to the center-left layer that Sunnova labels "**PLUGS**".
3) "SQUEEZE CHECKS": This refers to the center-right layer that Sunnova labels "**SQUEEZE CHECKS**".
4) "IN ONES". This is the private tab that has what I will refer to herein as the "**Hidden Data**".

The basic way Sunnova's spreadsheet works is that the numbers in the Front End Data are calculated by taking the numbers in the Hidden Data, and then adding a number in the PLUGS layer. <u>The PLUGS layer contains raw numbers that were manually entered as values.</u> If there is nothing in the PLUGS layer, the formula is adding a zero to the backend numbers, meaning it doesn't change anything. Thus, the PLUGS layer gives Sunnova a way to modify the numbers in the statement layer in whatever way it sees fit, while still making all the formulas look clean and consistent. Sunnova will then hide several rows in the statement layer and present the remaining rows to investors as its quarterly statement.

For the most part at least, the PLUGS numbers do not appear to simply be fictitious. For every plug you find adding a number, you can almost always find a plug elsewhere that subtracts it. In effect, Sunnova is using plugs to move numbers between categories. My argument is that Sunnova is inappropriately moving numbers around to inflate or deflate certain metrics when convenient. Oftentimes, these movements happen within rows that were hidden.

For example, if you go to the 4Q2023 revealed data I have attached, you can see that there are three versions for "number of customers deployed during the period" in the Front-End Data. However, only the version between rows 616 and 625 is visible to investors; the rows containing the other two versions of the numbers were hidden from investors. All three versions have the same total number of customers, but the categories and levels of detail are different. In addition, there are instances where numbers directly shown to investors are calculated directly off the two hidden versions in the Front End Data, so if the numbers in the hidden rows are not accurate, then Sunnova is admitting that some numbers it shows to investors are also inaccurate.

In the two hidden versions, many of the rows appear to be blank. However, if you go to the PLUGS sheet, you can find that Sunnova is using plugs to delete all the customers from one category, and then adding an identical number back into a different category. For example, in rows 591 and 592, you can see that, in the PLUGS layer, every "lease storage" customer has been deleted, but an identical number has been added to the "Lease" row.

Once you work out this basic pattern, you realize that Sunnova privately categorizes customers in much more detail than they show to investors, and the PLUGS layer tells you exactly how the numbers have been moved around.

The Hidden Data on the far right of the sheet is apparently unlabeled, but once you work out how the PLUGS work, then you can start to work out the pattern here as well. The pattern is that whenever a number is given in the Hidden Data, the label for that data is in the same row, but all the way over in column H. So, for example, in cell DY592 in the Hidden Data, you see the number "5,054", and this number is clearly referring to something in the fourth quarter of 2023. The proper label for the number in this cell is all the way over in cell H592 – same row, but dozens of columns away. And you can prove this by looking at the formulas in cell AL592 and accounting for the plugs. It is a bit tedious the first few times you do this, but once you understand the pattern, it becomes very easy to read the Hidden Data in this spreadsheet.

Just for clarification purposes, there are a few exceptions, but they are obvious. For example, if you see a "widgets per customer" metric, the "total number of widgets" might be listed in the same row in the Hidden Data, and then the excel formula just divides that by the number of customers.

Section 3: Sunnova Inflates ITCs by Understating its O&M Expenses

Sunnova finances its portfolio of rooftop solar systems by issuing asset backed securities (ABS). These ABS are rated by the Kroll Bond Rating Agency (Kroll). I have reviewed reports from Kroll, which disclose that Sunnova currently receives a fee of approximately $20 to $24 per Kw[1] to perform O&M and administrative services on solar systems in its securitized portfolio. Kroll models a slightly higher O&M fee of $27 per Kw ($33 per Kw if the system has a battery) as a stress to its cash flows when sizing the bonds it is willing to rate. Please see Appendix 1 for a summary of Sunnova's O&M fees and Kroll's analysis.

Separate from Kroll, Sunnova values its systems using a proprietary discount cash flow model. I believe this method below describes how Sunnova determines the FMV of its solar systems for purposes of sizing ITCs and other non-cash benefits.

> *"Estimated Gross Contracted Customer Value. We calculate estimated gross contracted customer value as defined below. We believe estimated gross contracted customer value can serve as a useful tool for investors and analysts in comparing the remaining value of our customer contracts to that of our peers. Estimated gross contracted customer value as of a specific measurement date represents the sum of the present value of the remaining estimated future net cash flows we expect to receive from existing customers during the initial contract term of our customer agreements, which are typically 25 years in length, plus the present value of future net cash flows we expect to receive from the sale of related SRECs, either under existing contracts or in future sales, plus the cash flows we expect to receive from energy services programs such as grid services, plus the carrying value of outstanding customer loans on our balance sheet. From these aggregate estimated initial cash flows, we subtract the present value of estimated net cash distributions to redeemable noncontrolling interests and noncontrolling interests and estimated operating, maintenance and administrative expenses associated with the customer agreements. These estimated future cash flows reflect the projected monthly customer payments over the life of our customer agreements and depend on various factors including but not limited to agreement type, contracted rates, expected sun*

[1] I have reviewed older transactions for some of Sunnova's competitors where O&M fees were much lower (approximately $15 per Kw).

hours and the projected production capacity of the solar equipment installed. For the purpose of calculating this metric, we discount all future cash flows at 6%.

> ***<u>The anticipated operating, maintenance and administrative expenses included in the calculation of estimated gross contracted customer value include, among other things, expenses related to accounting, reporting, audit, insurance, maintenance and repairs. In the aggregate, we estimate these expenses are $20 per kilowatt per year initially</u>****, with 2% annual increases for inflation, and an additional $81 per year non-escalating expense included for energy storage systems. We do not include maintenance and repair costs for inverters and similar equipment as those are largely covered by the applicable product and dealer warranties for the life of the product, but we do include additional cost for energy storage systems, which are only covered by a 10-year warranty. Expected distributions to tax equity investors vary among the different tax equity funds and are based on individual tax equity fund contract provisions."*
>
> *Source: Sunnova 2023 10-K. Page 71.*

Now, contrast the bolded numbers above with Sunnova's actual O&M expenses that are disclosed in the very same 10-K:

> "Operations and maintenance expense increased by $60.3 million in the year ended December 31, 2023 compared to the year ended December 31, 2022 primarily due to higher impairments and losses on disposals, truck roll costs and property insurance costs. **Operations and maintenance expense per weighted average system, excluding net natural disaster losses and non-cash inventory and other impairments, increased from $178 per system for the year ended December 31, 2022 to $251 per system for the year ended December 31, 2023 primarily due to higher truck roll costs and property insurance costs."**

Source: Sunnova 2023 10-K Page 79.

Here, Sunnova says that the actual O&M expense for weighted average system rose to $251 per system in 2023. However, the difference between cost/watt and cost/system is VERY important. Given that Sunnova reports that on average its solar systems are 7.6Kw, this is significantly higher than the $20/watt or $152/system for the reported/modeled cost. I suspect that the $20 figure is the upper bound of what was reported to the IRS.

Why I believe Sunnova manipulates the numerator and denominator in its O&M cost per system calculation to lower its reported O&M cost.

I struggle to understand the $251 per system O&M cost Sunnova provides in its 10-K. First, it is highly unusual to report O&M per system, because the market measures O&M on a per watt basis and this can be seen in most reports by solar participants (i.e., Sunrun or Sunpower who are Sunnova's largest competitors), appraisers, rating agencies, NREL, etc.

Therefore, I turned to the specific definitions Sunnova uses to calculate O&M per system in its 10-K, guided by the Hidden Data and I believe Sunnova is improperly lowering its reported O&M cost per system by manipulating data and using misleading disclosures.

There are two basic ways Sunnova can reduce its calculated O&M cost per system:

> A. Decrease the numerator (i.e., remove legitimate O&M expenses from O&M and/or allocate those costs elsewhere) or
>
> B. Increase the denominator (i.e., include battery or non-solar systems in the counted systems).

I believe Sunnova does both A and B and I can support this assertion with evidence from its 2023 10-K and the Hidden Data.

Here is how Sunnova calculates O&M according to its 10-K:

> Operations and maintenance expense increased by $60.3 million in the year ended December 31, 2023 compared to the year ended December 31, 2022 primarily due to higher impairments and losses on disposals, truck roll costs and property insurance costs. Operations and maintenance expense per weighted average system, excluding net natural disaster losses and non-cash inventory and other impairments, increased from $***178 per system*** for the year ended December 31, 2022, to ***$251 per system*** for the year ended December 31, 2023 primarily due to higher truck roll costs and property insurance costs."
>
> Source: Sunnova 2023 10-K, page 79.
>
> *Operations and Maintenance Expense*. Operations and maintenance expense represents costs from third parties for maintaining and servicing the solar energy systems, property insurance, property taxes and warranties. When services for maintaining and servicing solar energy systems are provided by Sunnova personnel rather than third parties, those amounts are included in payroll costs classified within general and administrative expense. **<u>During the years ended December 31, 2023, 2022 and 2021, we incurred $49.9 million, $21.2 million and $14.3 million, respectively, of Sunnova personnel costs related to maintaining and servicing</u>**

> **<u>solar energy systems, which are classified in general and administrative expense.</u>** In addition, operations and maintenance expense includes write downs and write-offs related to inventory adjustments, gains and losses on disposals and other impairments and impairments and costs due to natural disaster losses net of insurance proceeds recovered under our business interruption and property damage insurance coverage for natural disasters.
>
> Source: Sunnova 2023 10-K, page 74.

We summarize the above as follows:

Numerator	O&M Expenses
Denominator	Weighted Average Systems

Numerator Manipulation

Sunnova reduces the numerator by excluding tens of millions of dollars of O&M expenses it actually incurs providing O&M services on its solar systems.

These exclusions are categorized as:

1) Costs from natural disasters. To be clear, Sunnova defines this in its 10-K as the natural disaster costs, net of insurance recoveries. It seems the logic here is these are non-recurring losses. However, a portfolio of solar systems exposed to the elements around the country will likely always experience some degree of damage/loss that is not fully covered by insurance and thus excluding this item seems odd. ~$3mm. This is not a very large number, but it does go to the mindset of Sunnova.

2) Non-cash inventory and other impairments which ran to ~$50mm in 2023; $5 million 2022 and $1 million in 2021. I do not understand the growth of this line item, nor do I see any logic for this exclusion.

3) Sunnova excludes wages associated with O&M when they are incurred by Sunnova employees. The Company instead runs this expense through G&A. My only guess as to why this is included in G&A as opposed to O&M is to lower the O&M expense numerator. This amount came to $50mm in 2023; $21mm in 2022 and $14mm in 2021. This exclusion from the O&M calculation makes absolutely no sense to me.

Denominator Manipulation

Turning to the denominator, per the 10-K, Sunnova divides its O&M expense (excluding losses from natural disasters and non-cash inventory impairments) by weighted average systems.

The 10-K provides the following disclosure regarding Sunnova's weighted average system count for the year:

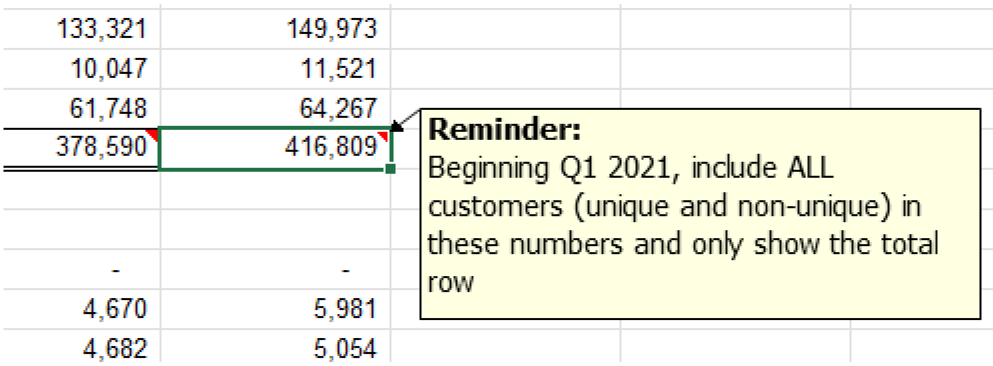
> "Weighted Average Number of Systems. We calculate the weighted average number of systems based on the number of months a customer and any additional service obligation ***related to a solar energy system*** is in-service during a given measurement period. The weighted average number of systems reflects the number of systems at the beginning of a period, plus the total number of new systems added in the period adjusted by a factor that accounts for the partial period nature of those new systems. For purposes of this calculation, we assume all new systems added during a month were added in the middle of that month. The number of systems for any end of period will exceed the number of customers, as defined above, for that same end of period as we are also including any additional services and/or contracts a customer or third party executed for the additional work for the same residence or business. We track the weighted average system count in order to accurately reflect the contribution of the appropriate number of systems to key financial metrics over the measurement period."
>
> Source: Sunnova 2023 10-K, page 68.

	Year Ended December 31,		
	2023	2022	2021
Weighted average number of systems (excluding loan agreements and cash sales)	219,100	168,400	125,100
Weighted average number of systems with loan agreements	120,400	56,500	27,200
Weighted average number of systems with cash sales	9,300	4,000	600
Weighted average number of systems	348,800	228,900	152,900

Based on a plain reading of the 10-K It appears that Sunnova is using the weighted average number of systems (348,800 for 2023) as the denominator to calculate O&M. If you attempt to use that number in the O&M calculations (348,800 * $251 or about $88 million), you realize that the equations just don't add up, whether or not you exclude the "net natural disaster losses" and "Non-cash inventory and other impairments".

However, if you turn to the Hidden Data, you can find a pretty good explanation as to why this is not correct. **<u>The weighted average number of systems is being manipulated and Sunnova has given its internal financial team written instructions on how they should manipulate that number.</u>** I believe this behavior along with the instructions embedded in the Hidden Data paint a damning picture of what may be an overt attempt by Sunnova to obfuscate its true O&M costs.

Here is a picture of those instructions. You can find them in cell DY587 of Sunnova's 4Q2023 financials. Similar instructions are repeated in similar areas in the financial statements from other quarters.



The reason I believe this rises to intentional data manipulation is that not all of Sunnova's customers have solar systems. Many of them have batteries, and some of them have accessory loans that are not part of a battery or a solar system. Those instructions are telling the analyst preparing the quarterly public spreadsheet to take customers categories that Sunnova knows do not have systems and include them in a row labeled "total weighted average number of systems," <u>and that metric is then directly shown to investors.</u> This is obvious manipulation and misrepresentation of the financial information as a "roof repair loan" is 100% unrelated to the cost of O&M for a PV system. This manipulated data inflates the denominator in the O&M calculation and thus is critically important to all of the constituents who look at Sunnova's financial condition. Increasing this line item decreases O&M expense per system. For all these reasons, I believe the manner in which Sunnova arrives at its weighted average system count is not defensible.

In total, I estimate that Sunnova currently overstates its system count by approximately 100,000 to 150,000 systems, out of a reported system count of 348,800. This degree of overstatement is material. It should be noted that this is part of a pattern of behavior where Sunnova produces extremely misleading customer counts. Please see Appendix 4 for more details on that.

While the weighted average number of systems Sunnova provides in its 10-K is incorrect, it is still possible to calculate the weighted average number of systems that Sunnova must be using in its O&M calculations. This is because Sunnova gives us the formula it uses to calculate nominal O&M-per-system, and it directly reports every other variable involved in that equation, as well as the answer. So, we can simply turn it around and solve for the weighted average number of systems Sunnova has to be using. If you do that, you'll find that in 2019, 2020 and 2023, the entire denominator was equal to the weighted average number of lease and PPA customers. In 2021 and 2022, the entire denominator was equal to the weighted average number of Lease, PPA and Service customers. I give detailed explanations for these calculations in Appendix 4.

However, there are three (more) problems here that this information reveals:

1. Sunnova acquired a company called Sunstreet in 2021. Many of the Sunstreet customers were subsequently added by Sunnova as service customers. Sunnova then added service customers to the denominator of its O&M calculations for 2021 and 2022. In 2023, Sunnova, then removed service customers from the denominator. This means Sunnova changed the way in which it calculated the denominator of its O&M twice in the last five years and, as far as I can tell, never disclosed these changes. In addition, I doubt that it was appropriate to include the service customers in the denominator in the first place.

2. The weighted average number of Lease customers includes battery customers. That means Sunnova is inflating the denominator of its O&M calculations with battery customers on a 1:1 basis. This is inappropriate, because according to Sunnova, its competitors, Kroll and NREL, there are several different ways to calculate the O&M for a battery, but it will always be much lower than the O&M on a solar system no matter which method you use. Therefore, without providing granularity, adding battery systems to a portfolio of mainly solar systems, has the effect of improperly lowering the overall O&M cost per system.

3. Sunnova is contractually responsible for the O&M on many of the systems in its loan portfolio. However, the only way I could find to make Sunnova's O&M figures internally consistent would be if Sunnova simply never included loan customers in the calculations at all. The associated O&M expenses are, presumably, hidden somewhere else in Sunnova's financial statements.

As you can see, the denominator of the O&M calculations is extremely problematic.

What is the Marginal Effect of These Changes?

While there are many ways Sunnova could theoretically calculate O&M-per-system, it is important to remember that we don't have to deal with theory. Sunnova tells us the exact method for how to calculate its reported O&M per system, and I was able to confirm the exact numbers Sunnova was using by looking at the hidden data. I believe that any realistic set of assumptions would require tweaking the formula that we know Sunnova is actually using. In that context, I believe that this is the proper set of assumptions that one could use to calculate O&M expenses:

1. Add the relevant G&A expenses to the numerator.

2. Remove service customers from the denominator. Sunnova did not include these customers in the denominator in the most recent years. Therefore, I think it is reasonable to apply Sunnova's most recent method to all years, so that we can make an apples-to-apples comparison.

3. Adjust the denominator for battery customers. In Sunnova's pre-sale report, Kroll indicates that the O&M expenses on a solar system with a battery were 22% higher than on a solar system without a battery. I felt that would be a company-friendly way to adjust the battery customers.

If you take these realistic set of assumptions, and re-run the O&M formulas accordingly, you find an extreme variance that grows and grows and grows year-over-year.

Adjusted O&M Estimates based on Hidden Data

	Kroll Reported O&M	10-K Reported O&M-per-system	GFS-Adjusted O&M Estimate
2023	$182.40	$251.00	$631.27
2022	$162.64	$178.00	$445.75
2021	$162.64	$146.00	$354.67
2020	$136.80	$184.00	$292.30
2019	$152.00	$142.00	$244.05

As you can see, the O&M expense Sunnova actually pays to maintain its solar systems is substantially greater than the O&M expense Sunnova uses for purposes of determining the FMV of its solar systems or when it discusses the subject with its investors. This compares to Kroll who describes the O&M fee Sunnova is contractually entitled to as approximately $24 per watt or $182 per solar system per year assuming a 7.6Kw system, which is what Sunnova claims is its average size.

However, I would argue that that my own estimate is still very likely an underestimate of Sunnova's true O&M expenses, as I did not add "net natural disaster losses" and "non-cash inventory impairment and other expenses" back into the numerator. Personally, I see no reason why these figures should have been excluded from the numerator in the first place. Sunnova is essentially arguing that the O&M expenses, which are likely to recur in a business like Sunnova's business, are not an appropriate number to use for the O&M expense. However, whether you include these expenses or not, the numbers just don't work.

Is this Numerator/Denominator Confusion Intentional?

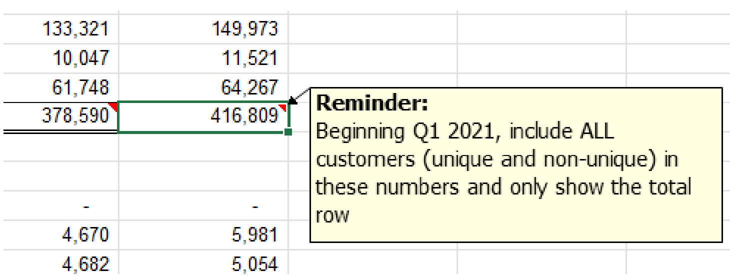
While it is difficult to be 100% certain as to motives, I am convinced that Sunnova is acting intentionally here. What convinces me that this is not attributable to confusion or accident is that Sunnova calculates the O&M for their solar systems using the metric of "cost per system" which is at odds with the rest of the industry which uses "cost per watt".

Cost per watt is the way that O&M is quoted in the solar industry, because it enables comparisons across different companies and use cases. Cost/watt is the way O&M is quoted in the pre-sale reports and appraisals. This is how NREL analyzes every component of the solar ecosystems it tracks. Furthermore, everything boils down to an FMV and the FMV is expressed on a per watt basis with O&M per watt constituting the biggest single expense within FMV.

Not so with Sunnova.

If Sunnova had the "confusion" detailed above and they expressed the units on a per system basis, their erroneous inclusion of the roof loans and such as a solar system would not have led to misleading reporting. By inflating the number of "systems" the cost per system is lowered and then then THAT cost is used to be converted to the cost per watt by dividing by the size of the Sunnova systems, which would ultimately result in the correct answer, if the reporting had been expressed in "cost per watt", which it is not. How do I know this? <u>Simple, Sunnova told me.</u> The analyst used frequent annotations to remind him that it is necessary to remove or move certain data for presentation. Those annotations change over time and provide a timeline on how Sunnova was manipulating the date for purposes of misleading the investment community.

For example:



133,321	149,973
10,047	11,521
61,748	64,267
378,590	416,809
-	-
4,670	5,981
4,682	5,054

Reminder:
Beginning Q1 2021, include ALL customers (unique and non-unique) in these numbers and only show the total row

This is why I believe that Sunnova uses its "unconventional" management accounting to create grossly misleading financial reporting for the investment community and to have significant errors in the accounting and cash distribution within their SPVs. Given how far off the results are from reality, I cannot believe that this is anything other than a well-conceived attempt to commit various types of fraud. Sadly, the complexity of this subterfuge made it difficult for PWC to pick up on this for their audit, however if they have a partner that has any knowledge of the Solar business, this would have been obvious.

Furthermore, KPMG did not pick up on this when they tied out Sunnova's securitizations. While these professionals may not have been a willing participant in this fraud, they obviously did not bother to ask too many questions because the securitizations were a substantial source of revenue. However, a lack of understanding as a defense or explanation really does not hold water for transactions done after the first Muddy Waters report as this fraud was revealed.

It really does not matter which is the correct metric to use, the one that Sunnova says buried in their 10-K or what I can calculate according to the Hidden Data, it is all fatal to the underlying business of Sunnova. However, one must really question what the role of PWC as Sunnova's and the SPV's auditor. Finally, what is Kroll rating? A model from someone that wants to get more cash out of a securitization? Well, that is 100% of the issuers that any rating agency would rate. It appears that these organizations did nothing but enable a seemingly significant misstatement of facts That mislead the investors into parting with massive sums of money on securities that cannot work.

Finally, on August 12, 2022, I spoke to Rob Lane who is the CFO of Sunnova. I specifically discussed the pricing of O&M and the consequence of mispricing O&M to the SPV.

Starting at minute 23:00 of the recording ending at minute 25.

> Tony: *How do you account... How does the IRS know that the cost that you're charging the SPV is indeed a fair one and not deflated? Because if... And I'm going to make up numbers. If Kroll says, or the appraisal says it's 20 bucks, and the reality is it's 50 bucks, then there's a huge in-kind transfer. Do you maintain accounting systems that you can show people that says, you're breaking even on this O&M, or you're making money on the O&M, or the O&M is done at a fair price? How would... How do we know that? Because clearly, if the IRS reads Carson's report, that's a question they're going to ask.*
>
> Rob: *Yeah. So, we do keep records of what we spend on O&M and what comes in on the O&M fees. So that's available if we get audited.*
>
> *And we keep them because in case we get audited. Okay. To show that we're not generating a lot.*
>
> ***<u>I mean, we cannot generate a loss at O&M because then that would be fraud.</u>***

Section 4: Tax Implications

I calculate the direct effect of O&M understatement on FMV overstatement by taking the "modeled" O&M cost and adjusting that figure up to reflect "actual" O&M costs. Keep in mind that if Sunnova were to fail, then a replacement O&M provider would have to assume the O&M responsibilities Sunnova currently undertakes. A replacement O&M provider would charge arms-length fees for that role and those fees will likely be materially higher than Sunnova's current fees, because Sunnova's current O&M fees are less than its actual O&M expenses.

Further, one would assume that Sunnova would have some degree of economies of scale that a replacement O&M provider might not enjoy. Also, a replacement O&M provider should expect to have a 10-20% profit margin on top of its own administrative costs. Therefore, the SPV is going to have to hire an independent O&M provider that will likely be more expensive than the fees currently paid by Sunnova to the SPV or Sunnova's actual costs as reported in their second set of books. I estimate that a replacement O&M provider could have fees that are double (or even more) the current O&M fees being charged by Sunnova.

The impact of understated O&M on the FMV of the solar systems.

The reason Sunnova depresses the O&M expense is to inflate the FMV of its solar systems and by extension, the ITCs (and other tax benefits) it sells to C Corps.

If O&M is understated by $1 per system for a typical 7.6Kw solar system, the present value of that increase in O&M with an annual inflation escalator (typically 2-3%, I will use 3% here) and a 6% discount rate is $20.4 for a 30-year cashflow. So, an incremental O&M of $300 per system annually lowers the FMV of that system by $6,120. If there is a $6/watt FMV, then the decrease in FMV would decrease from $45,600 to $39,480 or a decrease of 13.42%. If O&M reaches $500 per system (2023 estimate from the table on page 15), that would decrease the FMV $10,200 per system or a decrease of just over 22%.

To offset the effect of this additional cost, I can calculate the amount of FMV inflation that Sunnova must employ to be cashflow neutral (i.e., with the excess O&M). To say it in another way, I can calculate the amount or size of the FMV inflation Sunnova must use to ***appear*** economically viable.

I accomplish this by taking the amount of deflation of O&M and translating that to a raw dollar figure for the legacy portfolio excess costs. I can then take various levels of origination and spread that figure over a range of origination volumes.

Given that the FMV inflation is a stock, or a fixed amount of inflated dollars needed, I can show how much inflation of the FMV is necessary (per $/Kw or per system) for different levels of origination that Sunnova needs to achieve for Sunnova to break even with the inflated O&M.

As in all Ponzi schemes, the required FMV inflation increases as Sunnova decreases the rate of new installations. Ponzi schemes must have new sources of money. So, when material business headwinds like NEM3.0 take effect in California, Sunnova must inflate (lie) more to stay afloat.

However, this implicitly assumes that Kroll will simply take the FMV reported by Sunnova (and its appraisals) at face value. In fact, Kroll does its own cashflow analysis and calculates something it calls Aggregate Discount Solar Asset Balance (ADSAB), which is the present value of cashflows that Kroll believes are likely to be generated by the solar systems in the deal it is rating. There is no reason to think that Kroll will be willing to alter their rated bond structure because of the FMV inflation Sunnova is doing.

Given this reality, Sunnova needs to inflate FMV by approximately $2.63[2] to cover each dollar that O&M expense exceeds the O&M fee each year.

Based on my analysis, Sunnova has 219,100 solar systems and in 2023 the actual O&M expense Sunnova incurred was $631. This exceeds the O&M fee of $182 paid to Sunnova from its financing SPVs, so the excess O&M was approximately $449 or $98mm in total ($449 times ~219,100 solar systems). As a result, Sunnova would need to inflate the FMV of its newly originated systems by an amount sufficient to cover the $98mm hole, which would be $258.5 million if achieved through FMV inflation assuming tax equity funds 38% of each solar system.

If Sunnova installs 70,000 systems with an average of 7.6Kw per system, then they must inflate the FMV by $258.5 /70,000 or $3,692 per system. This is $.4958 per watt for the average 7.6 Kw system, a figure that may be possible to achieve by using liberal assumptions to calculate FMV.

If annual originations fall to 50,000 (as would be possible based on recent production and California backlog being finished up), the resulting calculation I estimate is much worse for Sunnova:

$258.5/505,000 or $5,170.00. This is $0.6803 per watt of FMV. The fewer systems Sunnova originates to spread the inflation across, the greater the inflation per system and thus the greater the need to manipulate the data. Sunrun is currently installing approximately 60,000 PV systems per year:

[2] This figure is the additional FMV Sunnova will need to inflate to get to get to get $1 of Tax equity proceeds at a 38% tax equity share of the equity of the partnership flip transaction.

This is a figure that is almost impossible to "manage" for any period of time.

Inflation per Watt of FMV for Breakeven							
	Cash generated from TE ($MM)						
Installs (000)	50	75	100	125	150	175	200
70	0.25	0.37	0.49	0.62	0.74	0.87	0.99
60	0.29	0.43	0.58	0.72	0.87	1.01	1.15
50	0.35	0.52	0.69	0.87	1.04	1.21	1.38
40	0.43	0.65	0.87	1.08	1.30	1.51	1.73
30	0.58	0.87	1.15	1.44	1.73	2.02	2.31
20	0.87	1.30	1.73	2.16	2.60	3.03	3.46

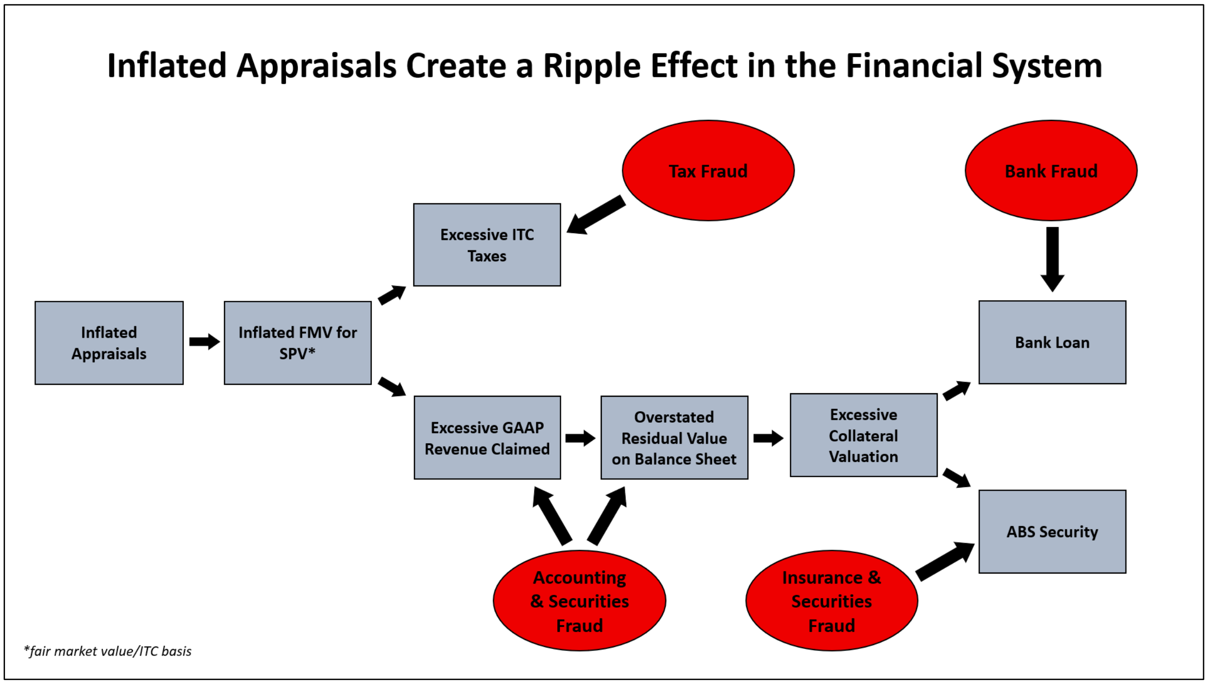
This problem will not go away in the short term unless Sunnova can find a way to inflate the system FMV and/or find many more homeowners to go solar. However, the latter is likely NOT going to happen as California has effectively eliminated ½ of the US residential solar market and NJ, the second largest US residential market, is also currently throttling residential solar.[3] Furthermore, inflating FMV by understating modeled O&M costs is not a "fix" it is just a "postponement" of the inevitable.

However, there are limits to the ability of Sunnova to lie as economic modeling gives way to negative cashflow in the real world. When those limits are hit, Sunnova, and the rest of the companies playing this game, will cease to exist.

While Sunnova is ultimately motivated to engage in this fraud because it inflates the tax incentives associated with the solar systems, this behavior has a ripple effect through the entire financial system. Sunnova monetizes the tax fraud, by selling equity in its financing partnerships to large C Corps (tax equity) based on the inflated FMVs.

[3]The NJ PUC has changed the rules to approve a Community Solar Project (CSP). Historically, the CSP needed to get approval of the CSP and then get the interconnection agreement approval. CSP's had a very high non-approval rate and the interconnection had a very high acceptance rate, although it may take a long time. The process was recently changed such that the CSP needs to obtain an interconnection agreement BEFORE applying for CSP approval. This will swamp the interconnections with a massive new influx of CSP, most of which will not get past the CSP approval process.
This effectively will drag the interconnection process out many years.
I direct your attention to minute 42 of the following New Jersey Board of Public Utilities.

https://www.youtube.com/watch?v=D_xV_H0Xugc



As you can see, inflating appraisals by understating the O&M starts a series of misstatements that result in massive tax, accounting and securities fraud. Please do not take my word for this. I spoke to Robert Lane, who is the CFO of Sunnova who said:

"I mean, we cannot generate a loss at O&M because then that would be fraud."

Rob Lane. Sunnova CFO August 12, 2022

While I have many disagreements with Mr. Lane, I agree with him on this issue. I believe that Sunnova is systematically understating O&M, generating massive losses in the process, and thus (according to his words), committing fraud.

Section 5: Accounting Implications

Sunnova agrees to provide below market/cost O&M to the homeowner for the life of the loan, lease and/or PPA contract, which is typically 20-25 years with an assumed extension to 30 years. Because the O&M fee paid to Sunnova is less than Sunnova's expense to provide O&M, fulfilling its obligations to the SPVs which owns the solar systems is an income and cash drain for Sunnova (after receiving the initial proceeds from selling tax equity). The arrangement is a series of "in-kind" transfers from Sunnova to what are supposed to be bankruptcy remote SPVs. Essentially, Sunnova accelerates the income of the SPV for today's benefit and repays the SPV back through below cost O&M service.

To express this matter in another way. Sunnova takes cash today and pays it back over 30 years. They are obligated to pay this money back through their O&M contract and do not report it on their balance sheet. Today's transaction only looks economically favorable to Sunnova, because the liability for future losses in the O&M contract are ignored.

So long as Sunnova grows originations, the O&M in-kind transfers can be masked by its receipt of proceeds from a larger number of newly originated systems. When growth slows or stops, the scheme falls apart.

Improper Accounting Treatment of O&M Misdirects SPV Cashflows

A secondary accounting concern is the improper calculation of the profit and loss of the SPV, because of the improper treatment of the in-kind transfer between Sunnova and the SPV caused by underpriced O&M.

The SPVs are organized as limited liability companies that elect to be taxed as partnerships (they typically have two equity partners). According to multiple Operating Agreements I have reviewed, the SPVs elect to be audited under GAAP. However, the SPV's income is calculated ignoring the economic value of the in-the-money O&M contract, which I believe is not proper for an entity that elects GAAP accounting.

One of the key terms in an SPV Operating Agreement is "Profit and Losses". **<u>This is NOT cash</u>.** The Operating Agreement does not say "<u>CASH</u>". Therefore, every dollar that is received from the partnership is not necessarily distributable. First, the partnership must set aside the cash needed to fund reserves required under GAAP. Once those are funded, then the SPV's profit is distributable. Therefore, if there are more "profits" then there is more cash to be distributed. If there are less "profits", then less funds are available to be paid out of the SPV and any excess cash becomes a *de facto* reserve and is held within the SPV.

Therefore, the GAAP amortization of the value of the O&M contract that has been contributed to the SPV decreases the income of the SPV and reduces the distributable cash within the SPV.

I believe that the value of the below market O&M contract should be identified as an asset of the SPV and the value of the PPA contract should be adjusted down by the value of the O&M contract.

Because the below market O&M contract is not an eligible asset (for ITC basis) but is being used to overstate the FMV of the solar systems, this creates a contingent tax liability for the tax equity partner. I believe that the SPV should establish a reserve for this liability, because the SPV has an indemnification obligation running to the tax equity partner.

According to ASC 450, this is not a remote risk given the following:

1) Sunrun (a Sunnova competitor with identical rooftop solar systems) has publicly disclosed it is under IRS audit for overstating the FMV of its solar systems for the last 6 years.

2) The IRS has acted against US Bank for an FMV audit relating to a Spruce transaction.

3) Sunnova has disclosed that they paid a $3 million indemnity payment for tax recapture in their second set of books.

The partnership flip SPVs are audited, under GAAP, by PWC and the ABS transactions are tied out by KPMG. The effect of PWC missing this asset contributed, and associated amortization, to the SPV is that there is too much cash distributed to the Tax equity partner and the Sponsor equity partner and the partnerships are thus under reserved.

KPMG obviously missed this when they tied out the Sunnova transactions, because the SPV cannot meet the obligations to the ABS if GAAP is used and the value of the O&M contract is properly booked. This is likely because Sunnova did not disclose the value of the O&M contract and the high cost of O&M Sunnova provides to the SPV. The accounting and the tying out of the SPV and ABS is not GAAP and thus is incorrect.

Given that the SPV is consolidated into the income and balance sheet of Sunnova due to the Variable Interest Entity accounting rules of GAAP, Sunnova's income is being overstated and their GAAP liabilities are being understated. Sunnova's GAAP audits are incorrect.

Furthermore, Sunnova's financial statements are also missing the IRS indemnity contingent liability that is self-evident when the GAAP accounting of the SPV is corrected. This should be an accrual, or at least a footnote to the financial statements, according to ASC 450.

Section 6: Implications for the SEC and Lenders

Underpaying for O&M will seemingly have no effect on SPV net cashflows if Sunnova is able to continue to subsidize O&M for the life of the securitization. This is essentially the expected outcome in Ponzi finance until growth stops. However, if Sunnova runs out of cash to keep funding the O&M gap, then it will likely file for bankruptcy and thereby default on its O&M contract.

At such a time, the SPV will be forced to obtain a replacement O&M provider at a much higher (market) price. This will result in the SPV having massively higher expenses and hence lower cash available for distribution to the Equity holders (Tax and Sponsor). Thus, debt service for commercial banks, State Chartered Green Banks and ABS securitizations that finance these interests will be insufficient and the cashflow to them will be greatly reduced. In such an event, large losses will likely accrue to these investors.

The NY State Green Bank recently reported a material loss which occurred in just such a fashion.

Therefore, understating O&M has the effect of improperly increasing cashflow to the SPV Equity partners (Tax and Sponsor). It also has the effect of placing a greater risk on the homeowner who depends on the SPV for O&M and other contracted services, especially if Sunnova files for bankruptcy. When cash is distributed from the SPV (and not held in reserve), then the homeowner is bearing the credit risk of Sunnova as O&M provider. The PPAs are owned by a partnership that has elected GAAP accounting, so this risk is contractually supposed to be borne by the equity holders in the partnership.

In summary, by misstating O&M, Sunnova improperly reports the following financial items:

1) ITCs sold to C Corps such as US Bank, Google and Facebook and many others
2) Income
3) Assets,
4) Its residual portfolio
5) Collateral for warehouse facilities
6) Collateral for ABS
7) Collateral for the insurance policy that is in the ABS securitization.
8) Corporate liabilities

Contingent liabilities

Sunnova is, in fact, generating an enormous loss on the O&M. They are today and they were when Mr. Lane denied it was the case. This can be validated by reading Sunnova's Financial statements and Sunnova's second set of books.

The Effect on the True Sale and Non-Consolidation Analyses for the SPVs

Sunnova relies on asset-backed warehouse lines and securitizations to fund its business. These transactions require the transfer of assets from Sunnova's balance sheet to the SPV pursuant to a heavily scrutinized transaction whereby the receivables exit Sunnova's bankruptcy estate. The lawyers who put together the transactions rely on a combination of heavily negotiated legal documents and officer's certificates from corporate executives as to the facts and circumstances of the transaction to ensure the SPV can stand on its own and honor its financial obligations under most circumstances.

The analysis relies on the SPV being an independent entity from the parent. If there is reliance on the parent, then the SPV can be consolidated in the event of the parent bankruptcy. Rating agencies rely on the non-consolidation opinion as an underlying support for the rating that they provide. If there is a material risk to having the SPV's consolidated, then there is an existential risk to the rating of the ABS security.

Rating Agencies ended up with material liability during the MBS mess for providing poor ratings. They used the defense of 1st amendment speech. It did not work, they paid. Kroll should logically not want to compound their errors. The ABS with no rating and a warehouse line with no ABS takeout will effectively cut off this line of financing to the originators.

Section 7: How the Understating O&M Harms Homeowners

Sunnova and its residential installer competitors all have horrific reputations amongst their customer base when it comes to providing O&M to their customers. This is due in large part to the understated O&M fees. There simply is not enough money flowing to Sunnova under the O&M contracts to cover the true expense of servicing the fleet of deployed solar systems.

For years this gap has been covered out of corporate working capital, but as interest rates rose, the pace of rooftop solar adoption slowed (in large part due to California state regulatory action) and other headwinds in the business arose, Sunnova has been unable to keep subsidizing its growing O&M expense and homeowners are crying out for help.

I believe that it is inevitable that these SPVs are going to have significant financial problems when these companies go bankrupt. When this happens there will be no further subsidies from Sunnova to the SPVs and the SPVs will be under pressure from the stake holders. The top of the waterfall is the homeowner contract that is senior to the equity in the SPV. If the cash that is supposed to be retained under the contracted waterfall is not respected, then the homeowner could get stuck with the liability for O&M and any other unreserved expenses of the SPV. This cannot be avoided entirely but can be mitigated by early action and the proper direction of the cashflows within the SPV.

Given that the "waterfall" for the partnership flip SPV is a waterfall based on GAAP income, then under reporting the true cost of the O&M means that the GAAP profit is overstated. To say this another way, when Sunnova enters a contract with the SPV for O&M services and it is at a very cheap rate, that contract is an asset that is transferred to the SPV. The contract must be amortized by the SPV over time. When there is amortization for the additional O&M, then the income of the SPV is decreased. This decreases the amount of GAAP income that is to be allocated. Given that the GAAP income is less than the cash generated (due to the accrual) the excess cash would stay in the SPV. This additional cash in the SPV is owned by the SPV and available to honor the commitments made by the SPV through the PPA contract….commitments made to the homeowners. This accounting accrual does nothing other than bring the true and correct cost into the SPV for purposes of calculating Profit which is the basis for cashflow distribution.

This accrual issue is also relevant in other matters, such as accruing for other expenses in the SPV, such as system removal and such. Basically, design of the SPV was to increase ITC benefits for Sunnova, but the consequence of this ITC inflation is to expose the Homeowner to as much Sunnova counterparty risk and transaction structural risk as possible.

Section 8: Conclusion

Sunnova finds itself in desperate financial straits. The information I discovered hidden in Sunnova's second set of books highlights that this company is likely going to confront an existential crisis driven by out-of-control O&M spending in the near term. I previously believed this was the path the Company was on, but with the Hidden Data, my certainty has increased.

Finally, the discovery of a second set of books and information that Sunnova publicly disseminates warrants a dive deeper into the Company's business practices by regulators.

I note the following material considerations as you and you colleagues consider the contents of this submission:

- Tax Fraud
- Securities Fraud
- Accounting Fraud
- Insurance Fraud
- Bank / Green Bank Fraud
- Impact on the Homeowner
- Impact on the United States Government's attempts to encourage the widescale adoption of solar and other carbon neutral technologies that the US must adopt to comply with the Paris Agreement.

I have submitted numerous Whistleblower Submissions to various agencies that have detailed significant errors or fraud in the structure of these types of securities and monetization of the tax credits. I would like to recap some of the recent submissions:

1) The FMV is not based on an Arms-length price, even though such pricing is now widely available.
2) The Cost of system removal is not properly accounted for under ASC 450. Thus, inflating the income of the SPV and leaving the liability for this Asset Retirement Obligation (ARO) on the homeowner, not the SPV.
3) The length of the underlying contact is significantly shorter than the modeled cashflows and is thus speculative revenue and not allowable under IRS code 1603.
4) The modeled cashflow has a recursive ITC. The standard way of determining the cashflow under the income method is to take an ITC on the ITC. Then that additional ITC is also modeled to get and ITC. This recursive ITC it taken to the limit (if you remember your high school calculus). The standard calculation of a 30% ITC is to divide the present value of the cashflow by .7 or to turn a 30% ITC into a 43% ITC.

On June 20, 2023, the U.S. Court of Federal Claims issued an opinion and order, denying plaintiffs' motion for summary judgment in *Alta Wind I Owner-Lessor C, et al. v. U.S*. This opinion clearly addresses the recursive ITC and clearly says that is the incorrect treatment. <u>This logic underlies 100% of the FMV calculations in residential solar PPA transactions</u>

5) The Partnership flip transaction assumes ZERO credit losses for the life of the transaction.
6) The partnership transaction has no provision for a cost of homeowner renegotiation of their underlying contract.
7) The panel decay factor is too low.
8) The discount rate assumed when the cashflows are present valued is significantly too low.
9) From a whistleblower filed in early 2023, Sunrun made up $6 billion of systems out of thin air and Sunnova exaggerates the size of their systems.

I anticipate submitting another whistleblower report in the near future regarding Sunnova's system count. Based on the evidence I have reviewed, I believe that Sunnova has significantly fewer solar systems than it reports to the SEC. This report will build on my May 25, 2023 report that said that Sunnova had anomalies in their system count that I was unable to explain.

Thank you for taking the time to consider this submission and as always, I stand ready to answer any questions you may have or to help you to better understand nuances of this complex major fraud.