Ecogy Energy
559 Thames St.
Newport, RI 02840

February 22, 2022

RE: 2022 Renewable Energy Growth ("REG") Program Tariff and Rule Changes Docket No. 5202 - Rebuttal Testimony to Direct Testimony of Michael Brennan - Division of Public Utilities

Dear Commission Clerk Luly Massaro,

Ecogy respectfully submits these comments in response to the Division of Public Utilities ("Division") Testimony of Michael Brennan regarding the 2022 Renewable Energy Growth Program Tariff and Rule Changes Docket No. 5202.

Ecogy Energy, based in Newport, RI and founded in 2010, is an experienced developer, financier, and owner-operator of distributed generation projects across the U.S. and Caribbean. Ecogy appreciates Rhode Island's leadership in creating the canopy adder incentive and for exploring incentives and policies aimed at public policy goals, including encouraging optimally sited solar PV systems on rooftops, canopies, brownfields and projects closer to load. Ecogy is a leader in the RE Growth program, having the majority of projects in the medium-scale category for 2019, 2020 & 2021.

Ecogy's focus and niche is on the <1 MW arena, particularly on systems sited on rooftops, parking lots, and brownfields. Ecogy believes that medium-scale projects with sound planning, proper development, and fair incentives for these types of projects, the State, its residents, and the clean energy industry as a whole will ultimately be more successful. **By focusing on such projects constructed in and on the built environment, the development community can preserve precious and limited natural resources while directing the benefits of the RE Growth program to local small businesses, affordable housing, nonprofits and other organizations that need them most.** These benefits, including new revenue streams through lease payments and discounted electricity (through CRDG) will in turn allow such organizations to continue their operations serving the Ocean State, creating jobs, expanding municipal tax bases and stimulating local economies.

Stakeholder Process

Ecogy submitted four comments in 2021, participated in all of the stakeholder meetings, and additionally submitted documentation and data substantiating our comments to Sustainable Energy Advantage ("SEA"). Ecogy has not received a response or feedback from the Division regarding these comments and is concerned that previous comments and data are not reaching parties at the Division but instead being isolated to SEA for review only. Ecogy is concerned that the Division isn't providing their recommendation with full transparency of the stakeholders by simply attending stakeholder meetings without further exploration of stakeholder engagement, comments, and data submission. It would be ideal if the Division asked stakeholders about their

assumptions as stakeholders such as Ecogy are operating in real market conditions compared to the Division contemplating theoretical situations and issues with this competitive process.

Project Costs

In the Division's feedback/input provided to the stakeholder process on page 4, line 16 of the Testimony of Michael Brennan in Docket 5202, the Division acknowledged **"...the likelihood that…"** upward pressures exist on project costs. Increases in project costs due to inflationary pressures and supply chain constraints are not "the likelihood" for solar developers but instead have been proved with credible evidence that they will substantially impact projects by stakeholders, news outlets, and academic institutions. Solar Energy Industries Association ("SEIA") and Wood Mackenzie reported shipping constraints and other supply chain challenges stemming from the global pandemic leading to price increases across the U.S. solar industry in Q2 2021 with effects lasting into 2022.[1] Additionally, NREL reported significant supply chain shortages and component price increases including modules, the highest mark seen in the last 10 years.[2] Ecogy submitted project quotes, equipment quotes, documentation substantiating labor shortages, and the current high inflation which is documentation to support a reasonable adjustment to the project costs used in the ceiling prices. The following table highlights substantiated and documented project cost increases for equipment from our RI portfolio that gives credible evidence for the Division to accept that this is not a likelihood but a market reality.

Equipment Type	Unit Price Quote from Sept 2021	Unit Price Quote from Feb 2022	Change in Price (%)
Panels/Modules	450W: $161.34/Panel or $0.35855/Watt DC	450W: $200.25/Panel or $0.445/Watt DC	24% Increase in last 6 months alone

Equipment Type	Price Quote From August 2021	Price Quote From September 2021	Change in Price (%)
Racking	$24,942 or $0.154/Watt DC	$33,740 or $0.208/Watt DC *Includes 5k reduction from Ecogy	35% Increase in 1 month alone

Also on page 5, the Division stated that they "...supported using the lower end of SEA's estimates for project costs unless compelling evidence emerged to support a different conclusion." Not only has Ecogy provided numerous sources and real-market evidence of higher

[1] https://www.seia.org/solar-industry-research-data Accessed February 18, 2022
[2] https://www.nrel.gov/docs/fy22osti/81900.pdf

projects but anyone that is building anything during this time and in this economy knows the profound impact of costs increasing across the board.

Ecogy believes that the Division is seriously underestimating the volatility of the market and the market price increases since their September 2021 comments in Docket No. 5088. Prices have only continued to increase, making the use of lower end ceiling prices unreflective of current increased project costs which have seen a clear trend over the last 2 years. Our team compared the builder bid costs of two projects in Rhode Island that saw increases of 21% to 33% in costs associated with construction from the same contractors, with the same designs for the same projects (See Table 2 below). To recall, the Division is not supporting any proposed price increase for the Medium-Scale and only a 9% increase for the new 150 kW DC category. This is even while build costs are 21-33% higher, equipment costs are 24 to 35% higher than in previous years and building code requirements are more severe causing less project value.

Project Name	Location	Size (DC)	Total Build Cost April 2021	Total Build Cost Feb 2022	% Increase
Ecogy Energy RI IX LLC	Rumford, RI	249.48 kW	$253,415.96	$308,301.20	21.7
Ecogy Energy RI XII	Exeter, RI	249.9 kW	$233,960.30	$311,320.10	33.1

Figure 1: Shows substantial and real cost increases to build projects in Rhode Island refuting the Division's testimony that there wasn't compelling evidence. These project bid prices are being submitted in redacted form to substantiate these figures. Note that Total Build Cost does NOT include equipment prices, interconnection costs but rather is simply labor to build the project from a RI certified builder.

We are unsure what the Division would be satisfied with in regards to compelling evidence. We see substantiated data, history, inflation, and overall market conditions as being more than satisfactory as compelling evidence. Ecogy has provided numerous sets of data through this process, proving that equipment prices are higher than they were pre-pandemic and this has only been confounded with equipment availability and longer lead times which require higher down payments and more risk onto projects, ultimately reducing the value. Ecogy believes that the compelling evidence submitted previously and within these comments justifies a higher increase in ceiling prices needed to make these projects work and would like an understanding of how much more documentation is needed for the Division to support "**...a different conclusion,**" as written in their testimony. Additionally, we have attached and are submitting documentation substantiating significant price increases on modules and racking which encompass the vast majority of solar equipment needed to complete construction.

Post Tariff Project Revenue Assumption

As stated previously, Ecogy is the leader in the medium-scale category with 10 out of 34 projects in the 2021 First Open Enrollment[3] as well as the majority of projects in previous year's enrollments. In our previous comments submitted on August 20th 2021 and September 30th

[3] http://www.ripuc.ri.gov/eventsactions/docket/5088-NGrid-1stEnrollment%20(6-24-21).pdf

2021, Ecogy expressed concern about the Post Tariff Revenue Assumption. We stated that due to multiple reasons detailed below, the assumption of any post tariff revenue is inaccurate and should not be used as a modeling assumption for the 2022 Ceiling Prices. However, despite our serious concerns and compelling evidence submitted, SEA did not make any changes and is continuing with the same assumptions as before and the Division is doubling down and saying Post Tariff Revenue Assumptions should be even higher. Ecogy is disheartened by this outcome but is still submitting additional comments to provide evidence indicating the issues with this assumption below:

20 Year Lease Agreements: Every one of our 27 Rhode Island projects have a twenty-year lease agreement. Site owners are unwilling to sign a longer lease agreement than twenty years because of the fact that Ecogy can only guarantee certain lease payments for twenty years due to the REG tariff term and also since roof warranties never extend past 20 years but often are 15-years. To sign an agreement past 20-years requires us having certainty of revenue past 20-years which is not the case and in certain markets we are seeing antiquated assets have to be removed because they are no longer economical in current times.

Lending: In all of Ecogy's history developing projects in Rhode Island, no lender has ever allowed us to assign value to any project past the twenty year feed in tariff value term. Ecogy would like to stress that no lender will assign value to a project past the twenty-year guaranteed term as it is uncertain, unquantifiable, and unrealistic. SEA and the Division's modeling assumptions only look at projects that have leverage (which is clearly not the case considering not everyone can qualify for leverage) but even still they model these projects with a loan value based on a tariff term longer than the REG term.

1. **Inverter Warranty**: Inverters are only warrantied for 10 to 15 years. After their useful life inverters must be changed and this cost will be internalized by the owner-operator. This will result in a significant cost for inverter replacement and installation at least once, <u>if not twice during the lifetime of the project.</u> Hence, if SEA models RE Growth projects to have revenue past the twenty-year term then they must include the cost of inverter replacement BOTH at year 12, as shown in the CREST model, and also at Year 20.
2. **Roof Warranty**: Rooftop projects are the majority of the medium-scale projects in the REG program. In all our experience developing projects in 9 states, D.C., and the Caribbean, Ecogy has not seen a roof warranty last longer than 20 years. The most common roof warranty in Rhode Island that we have seen is a Firestone warranty which covers a 15-20 year period. Therefore, the system would have to be removed at the end of the warranty to reroof the property. Under the Post Tariff Revenue Assumption, Ecogy would have to remove our system at year 20, reroof the property and then reinstall the system in order to receive revenue. SEA must consider that reinstalling the solar system after a reroof is essentially half of the total project cost that the owner-operator will have to internalize in addition to the actual reroof cost. If the Division/SEA models a longer term with a post tariff market price, they MUST model in a full system removal and reinstallation which is a significant cost. If they do not model this in, they are giving an unfair advantage to ground-mount systems that do not have this issue and thereby greatly

encouraging ground-mount systems in a state that has had significant pushback and most recently intense support for better land-use.

3. **Size of Net Metering Programs**: In the future, the size of net metering programs may not be able to sustain additional RE Growth projects. Since net metering programs only allow a certain amount of capacity in a given area, if that capacity fills up then legacy projects will not be able to apply. SEA can look to the Community Net Metering Pilot Program where initially 30 MW were made available in 2011.[4] As of September 2021, 29.931 MW were reserved and there is a waitlist of 19.79 MW even while the Synapse report stating that the Community Net Metering Pilot had a cost benefit of 1.22 there has been no action to increase this capacity in Rhode Island.[5] It is unrealistic to assume that once RE Growth projects reach the end of their 20 year term, there will be a guaranteed option for them to enroll in a net metering program. It is highly likely, as can be seen with Community Net Metering, that net metering programs will not have enough available capacity to sustain legacy RE Growth projects applying into the program considering that REG program has an annual solicitation of >30MW - the same size as the Community Net Metering Program total to date.
4. **Project Management Costs:** SEA must also take into account the additional company bandwidth and project management costs that will be required to reapply old RE Growth projects into a new net metering program. Project management costs include expenditures on company time spent re-engineering the system, receiving approval from the PUC, utility, and local AHJ, customer acquisition cost of all of the offtakers, and negotiation cost to extend the lease agreement past 20 years - all with inflation costs taken into account as these prices would be much higher than today's dollars. It is not simply that at the day after year 20 we receive this new Post-Tariff revenue - we would have to spend significant resources to be able to even try and receive this revenue.
5. **NEM Discount**: Ecogy disagrees with the SEA's assumption that the 40% NEM discount is realistic. As stated previously, to assume any NEM value post year 20 is overblown, but a 40% discount to a program which may not be applicable at that time is disingenuous at best. Additionally, SEA has not included the cost of customer acquisition of that offtake, which in a world 20 years from now is also unquantifiable, because likely, many houses, businesses, and municipalities will already have solar and thus will not need or be able to subscribe.

In fact, contrary to the Division's own testimony- the Division's 2021 testimony in Docket 5088, stated that "some projects bidding at 100% of the ceiling price may be accepting less than optimal returns in order to advance projects.[6]" This analysis further supports the likely scenarios in which **"considerable retirement of otherwise viable solar capacity occurs, as prudent**

[4] http://www.energy.ri.gov/policies-programs/programs-incentives/net-metering.php
[5] http://www.ripuc.ri.gov/generalinfo/Synapse-CRNM-BCA-2021-Redacted.pdf
[6] http://www.ripuc.ri.gov/eventsactions/docket/5088-DIV-Brennan%201-11-21.pdf

owners would shut down operations if revenues failed to cover operating costs." A perfect example of this is that the Post Tariff Revenue Assumption does not come to fruition and that operations must shut down.

Additionally, while the main developer in the REG program is providing evidence that there is no ability to forecast post tariff market prices and they shouldn't be valued at all, the Division is opposing this by proposing that the post tariff market prices should be higher and to utilize an arbitrarily chosen number of 80% of the escalated retail rate proxy. This has no proper justification or foundation in actual data - it is a number that is randomly picked and has not been used in any other market modeling assumption that Ecogy is aware of.

Retail rates are escalating across the U.S. but they are not escalating at the net-metering retail value but rather are going the opposite way. Utilities are pushing more of their charges onto kW and other fixed charges such as the Customer Benefit Charge in the State of New York - thereby decreasing the actual net-metering value while still increasing their revenue. In fact, net-metering is also becoming nonexistent or retroactively canceled or discontinued such as is the case in California and New York through the Value of Distributed Energy Resources. Does Rhode Island truly think that a retail net-metering program will still exist in 20 years and that the state policies will not follow more complex energy paradigms, especially those that are more advanced and progressive in neighboring states?

Debt Terms

All of the modeling assumptions that SEA, CREST, and the Division use, model in debt coverage on the projects as the standard. Ecogy believes that SEA should not assume that all projects can source debt. In Ecogy's experience, it has been impossible to secure debt for a single project below 1MW. We have been forced to create a portfolio of smaller projects totaling <1MW in order to secure debt, which is not always possible, especially with the competitive nature of the RI REG bidding process. Additionally, our lenders and every lender we've talked to do not allow for us to leverage the project past the 20 year REG certificate because of the wild uncertainty of what revenue we will actually receive. Moreover, to lend against one of our 250 kW projects we must cross-collateralized the portfolio which increases project costs and certainly can't be afforded by a one-off owner-operator.

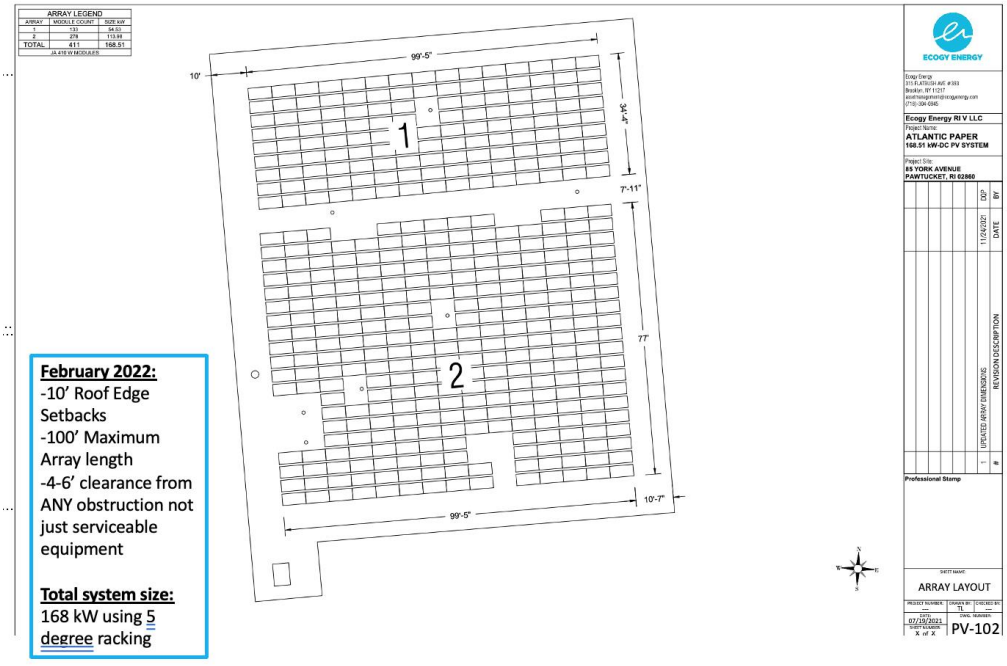
Bifurcation of Medium-Scale Category and Building Code Requirements

Ecogy agrees with the Division's stance on the proposed bifurcation of medium-scale projects, especially as RI has adopted the 2021 International Building Code which requires 10 ft setbacks from the building edge with a parapet wall less than 42" in height. The new building code requires 10 ft setbacks - nearly double what was required in the previous code. With this in mind, it is likely that rooftop projects will begin to trend to smaller sizes in the same square footage, meaning the total incentive received will decrease (smaller system size), or site lease payments will have to increase and thus, total project cost will increase on a per kW basis.

Furthermore, fixed costs affect smaller projects to a much greater degree since there are no savings as a result of economies of scale. For this reason, any required change in size of a project will affect smaller projects much more severely. For example, based on NYSERDA's application data from 2019-2021 in the Con Edison territory showing average turnkey prices, the difference in project costs of projects <200 kW were at $3.45/W compared to a 1 MW project at $2.39/W showing a ~44% increase due to economies of scale.

Ecogy's Project for Atlantic Paper was originally designed to be 184 kW (See Figure 2), however as a result of the 2018 International Building Code and subsequent 2021 revisions and adoption by Rhode Island, the system size has now decreased to 168 kW even with the highest wattage panels Ecogy could find (410W) and by removing a gas line and one obstruction from the roof. This change in capacity has drastically affected our economies of scale as well as our ability to maintain the same lease payments afforded to the project originally.

What is more important to recognize for stakeholders is that the same amount of space on a commercial roof in previous program years will yield a smaller amount of solar capacity even with higher wattage panels and creative solutions to try and yield the maximum capacity. It is for these reasons that we strongly encourage the program to focus and support smaller size categories as the majority of roofs that can support these types of installations are small businesses, affordable housing, nonprofits and places of worship - the backbone and the communities most in need in Rhode Island.



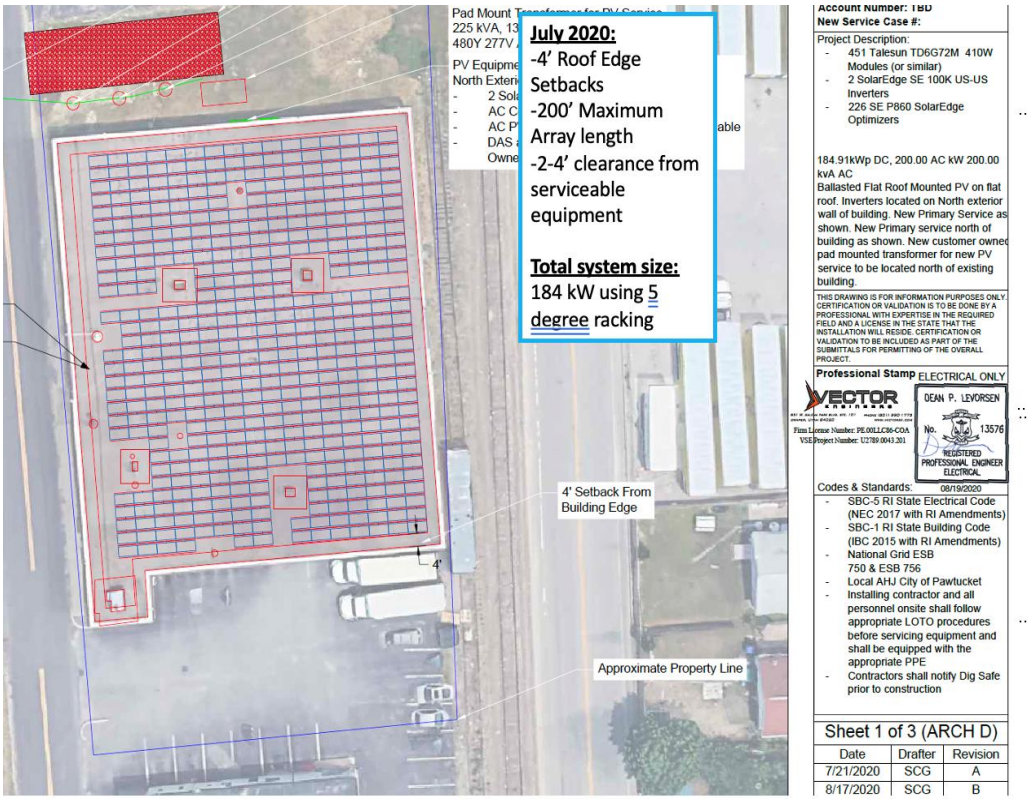


Figure 2: As can be seen in the attached stamped plan sets, the system size has changed dramatically (nearly 10% lower) due to new requirements from the adoption of new building codes.

Ceiling Prices

Ecogy has multiple projects that simply cannot be built with the prices they were offered in the REG program in 2020 and 2021, requiring a re-bid to make the projects economical. Cost pressures and inflationary pressures influenced the amount of lease payments requested by hosts and clients. Therefore, it is not feasible to allow 2020 - 2021 to determine 2022 ceiling prices because they are not representative of which projects will reach the end of the development cycle and actually get built.

That said, for the Medium Solar Class, the Division is too concerned that the ceiling prices currently proposed coupled with the propensity of bidders to submit bids at or extremely near the ceiling price may encourage higher bid prices in 2022 than may be warranted. The Division should not forget that this is a competitive auction and no longer an administratively set bid price. Developers need to make a certain return especially with higher project costs which results in higher bids that can make the project financeable. Ecogy did not find any justification into the Division's assumption and lack of faith in the competitive bidding process which has been used for the last 8 years. There is a reason bids come in close to the largest allowed size in this class, it is so that the projects can actually pencil - so complaining about the bidding system after it's been used successfully is an unusual argument to make.

Projects that Died Due to Cost Pressures with a REG Bid in 2020/2021				
Project Name	**Location**	**Enrollment (Yr)**	**Size (DC)**	**Lease Term (years)**
Ecogy Energy RI VI LLC	East Providence, RI	2020	270 kW	20
Ecogy Energy RI XXI LLC	Warwick, RI	2021	514 kW	20
Ecogy Energy RI XXV LLC	Woonsocket, RI	2021	250 kW	20

Figure 3: These 3 projects could not make a reasonable rate of return due to higher project costs seen by Ecogy. Ecogy had to sacrifice our performance guarantees for 2 of these projects and lost substantial other hard costs as well as the time invested onto these projects.

Ecogy will be reapplying 5 projects in 2022 to get higher ceiling prices as a consequence of the higher project costs not being economical with the previous REG certificates of eligibility afforded to them and not being afforded an extension in the medium scale category past the 24 months (which Ecogy has also submitted comments on in regards to being unfair to Medium-Scale projects).

Projects Reapplying in 2022 or Have Reapplied to Get Higher Ceiling Prices					
Project Name	**Location**	**Enrollment Yr**	**Size (DC)**	**Lease Term (Yr)**	**Rebid Date**
Ecogy Energy RI V LLC	Pawtucket, RI	2021	184 kW	20	2022
Ecogy Energy RI XII	Exeter, RI	2020	250 kW	20	2022
Ecogy Energy RI I LLC	Tiverton, RI	2021	250 kW	20	2022
Ecogy Energy RI IX LLC	Rumford, RI	2020	250 kW	20	2022
Ecogy Energy RI IV	Tiverton, RI	2020	250 kW	20	2022

Figure 4: These 5 projects that add up to 1.25 MW will not be built but which received REG approval in 2020/2021 - negating the Division's testimony that they exceeded their target in 2020. Ecogy would like to reiterate that initial bid enrollments do not reflect project completion success and should not be used for modeling purposes unless the projects reach operation.

Also, on page 8 of the Division's testimony, there was recognition "...that the recent bids were all for projects that were sized close to the largest allowed size in this class (250 kW)." This observation was the reasoning behind the Division proposal that medium-scale ceiling prices should be set at the same level as 2021. The true reason for such observations is that projects can only work at those bid prices if they reach the top of the size category. Average bid sizes that come in at the high point of a category should not determine ceiling price. These Division comments again reflect picking and choosing how they like this competitive bid process with comments that have previously not been brought up. Conversely, this occurrence shows projects do not work at the low end of the category, reflecting financing constraints.

It appears discriminatory that the Division is judging and changing the ceiling prices for projects even though they are in the allowable size range, designed to be as high in kW capacity to make projects work. It is clear that projects that are not 250 kW or smaller have serious challenges in being financeable. It is alarming to Ecogy that the Division has no substantial data to support this claim nor are they considering the feedback of Ecogy who has the most medium-scale projects and has been financing these types of projects for over 12 years. It is contradictory to propose rates per kWh that are similar and below what was proposed by SEA and the DG Board after significant data collection, feedback, and analysis; while simultaneously accepting that costs have increased. **If the Division accepts that projects are accepting lower than optimal returns and that project costs have increased - where is their justification that the ceiling prices should stay at the same levels as previous years?**

Ecogy's lowest REG bids, including Carousel, will not pencil as cost pressures are higher. Many developers are looking to change tilt angles to increase the density on a roof. This is an additional reason why system sizes are increasing, consequently the production factor decreases dramatically. Redesigning a system from a 10 degree tilt to a 5 degree tilt reduces the row spacing by half but decreases production factor by roughly 4%.[7] On page 12, the Division states, **"notably, one project of 170 kW was proposed at 18.67 cents/kWh, which was ~14% below the ceiling price.**" This project is an outlier and does not reflect the competitiveness of the solicitation process and perhaps the project, in the Division's own words based on their 2021 testimony in Docket 5088, accepted suboptimal returns simply to make the project work. Again this outlier has not been built and therefore should not be looked at as substantial evidence.

The Division acknowledges that the medium solar class is shifting to the high end of the system size threshold and then says the commercial solar class doesn't have as big of an issue due to the bifurcation solutions. The Division does not provide substantial evidence justifying bifurcation as a solution for large scale but not working for medium scale projects. Ecogy is concerned with the Division's reasoning for singling out the medium scale categories and not the commercial scale categories, and lack of information presented on percentage increases associated with the bifurcation of the commercial class.

Ecogy stresses the argument that cost pressures have forced developers to downsize their projects to the lower category simply to make them financeable and that they have been proven to not work at the larger category. Ecogy rejects the idea from the Division regarding previous ceiling prices encouraging developers to game the system, but instead were actually acting based on market pressures. If a project does not work at 400 kW at the commercial scale pricing, then the only way to advance the project forward is to downsize.

Alternative Enrollment

The Rhode Island program is the most arduous to participate in regarding timeline and volatility whereas neighboring and regional markets (MA, NY, NJ, DC, etc.) have rolling admissions that promote building confidence. Progressing to a bidding process reflective of market needs similar

[7] https://pvwatts.nrel.gov/pvwatts.php

to competing markets is where RI should be striving to achieve.

MW Allocation

Ecogy agrees with the Division's proposed megawatt (MW) allocation plan for the 2022 REG program. Ecogy understands that more projects should be pushed to smaller categories which may relate to higher per kWh prices, however, these systems have better community support, better land use, provide more benefits to local small businesses, property owners, nonprofits and other organizations that need them most. Throughout our experience developing projects in Rhode Island and states across the East Coast we have observed first hand the benefits that well sited smaller-scale projects have on the communities they serve, on the overall environment and on the state's clean energy goals.

We thank you for careful consideration of these comments and appreciate your support of the clean energy industry in the Ocean State.

Warmest regards,

/s/

Brock D. Gibian
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Ecogy Energy
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[redacted]

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QUOTATION		PAGE
		001 OF 001

QUOTE #	DATE	REV #	REV DATE
1030924	08/30/21	001	08/30/21

QUOTE EXPIRES	PREPARED BY
09/29/2021	[redacted]
SLS [redacted]	INSL [redacted]
FOB SHIPPING POINT	FREIGHT PREPAID

CUS PO #:

JOB NAME:
417 FOREST AVE WEST LG

LN	QTY	MFR	CATALOG #	DESCRIPTION	PRICE	UOM	EXT AMT
01	554	[redacted]	[redacted]	[redacted] BALLAST BAY	25.25	E	13,988.50
02	1,904			RM END CLAMP 32-40MM	1.83	E	3,484.32
03	3,012			KIT 1/4 20 CLIP ON NUT SS 18-8	0.31	E	933.72
04	443	[redacted]	[redacted]	[redacted] WIND DEFLECTOR	13.36	E	5,918.48
05	1,108			WIND DAM CLIP, KIT	0.19	E	210.52
06	387			[redacted] 5/DT WIRE MGMT CLIP	0.92	E	356.04
07	39			[redacted] WD WIRE MGMT CLIP	0.76	E	29.64
08	4	[redacted]		ILSCO LAY IN LUG (GBL4DBT)	5.43	E	21.72

TOTAL: 24,942.94

PLEASE NOTE: THIS IS NOT AN OFFER TO CONTRACT, BUT MERELY A QUOTATION OF CURRENT PRICES FOR YOUR CONVENIENCE AND INFORMATION. ORDERS BASED ON THIS QUOTATION ARE SUBJECT TO YOUR ACCEPTANCE OF THE TERMS AND CONDITIONS LOCATED AT SALES.OUR-TERMS.COM, WHICH WE MAY CHANGE FROM TIME TO TIME WITHOUT PRIOR NOTICE. WE MAKE NO REPRESENTATION WITH RESPECT TO COMPLIANCE WITH JOB SPECIFICATIONS.

[redacted]

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QUOTATION		PAGE	
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QUOTE #	DATE	REV #	REV DATE
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QUOTE EXPIRES		[redacted] BY	
10/02/2021		[redacted]	
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FOB		FREIGHT	
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CUS PO #:
WESTHOUSE[redacted]
JOB NAME:
NEW PRICING [redacted] INCRSE

LN	QTY	MFR	CATALOG #	DESCRIPTION	PRICE	UOM	EXT AMT
01	591	[redacted]	310800	[redacted] BALLAST BAY	33.58	E	19,845.78
02	459	[redacted]	310810	[redacted] WIND DEFLECTOR	15.80	E	7,252.20
03	5	[redacted]	008009P	ILSCO LAY IN LUG (GBL4DBT)	4.37	E	21.85
04	2,025	[redacted]	310820	[redacted] END CLAMP 32-40MM	2.25	E	4,556.25
05	400	[redacted]	310850	[redacted] /DT WIRE MGMT CLIP	1.36	E	544.00
06	41	[redacted]	310851	[redacted] WD WIRE MGMT CLIP	1.14	E	46.74
07	3,207	[redacted]	310860	KIT 1/4 20 CLIP ON NUT SS 18-8	0.36	E	1,154.52
08	1,182	[redacted]	310861	WIND DAM CLIP, KIT	0.27	E	319.14
09	*	9/7/21: DISCOUNT EXTENDED FROM [redacted] TO COMPLETE PROJCT					
10	-1	MISC	[redacted] ONE TIME DISCOUNT	$5000.00 REDUCTION OF PRICE	-5,000.00	E	-5,000.00
11	*	ECOGY PO: WESTHOUSE[redacted]					

TOTAL: 28,740.48

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[redacted]

Quote

Date	Quote #
2/7/2022	70908

Bill To	Ship To
Simon Curtis-Ginsberg Ecogy Energy 67 West St Suite 232 Brooklyn NY 11222	Ecogy Energy 67 West St Suite 232 Brooklyn NY 11222

Expires	Sales Mgr	PO #	Terms	Liftgate?	Shipping Via	Currency
2/9/2022	[redacted]	450W [redacted] 820kW	Prepay	No	EXW	USA

Line	Qty.	Part No.	Description	Unit Price	Line Total
1	1,824	[redacted]	[redacted] Series 450W 144 HALF-CELL Bifacial 1500V 9BB Mono PV Module with Staubli MC4 connectors and short (350mm) leads	$200.25	$365,256.00
2		NOTE	*** Readily available warehouse excess allocation, expected to be available to ship early March 2022. Fluid and limited availability. The lot can be secured upon provision of authorized quote and investment with funds in full with PO.		
3	1	FREIGHT TBD	*** Freight Cost will be provided on final quote. Delivery location must have access for standard 53ft truck with closed trailer, fork lift and pallet jack on site for maneuvering pallets.	$0.00	$0.00

Shipping	
Tax	$32,416.47
Total	$397,672.47

Quo a ions are open for accep ance wi hin 3 business days of he quo a ion da e All produc s subjec o prior sales Orders are usually confirmed wi hin 2 business days By signing below or accep ing he quo a ion and submi ing a PO Buyer agrees ha once confirmed all sales shall be subjec o [redacted] Terms and Condi ions lis ed a [redacted] By signing below Buyer is agreeing o [redacted] Terms and Condi ions **Buyer also agrees ha he projec /clien address lis ed on his quo a ion and/or invoice form is correc [redacted] holds he righ o verify projec /clien address before gran ing paymen erms **

Sign here and return : _____ Date: _____

[redacted]

PURCHASE ORDER

THIS PURCHASE ORDER ("**PURCHASE ORDER**" OR "**PO**") IS MADE AND ENTERED INTO EFECTIVE AS OF SEPTEMBER 3, 2021 BY AND BETWEEN [redacted] (U.S.) INC., A DELAWARE CORPORATION ("**SELLER**") AND ECOGY SOLAR LLC, A DELAWARE LIMITED LIABILITY COMPANY ("**BUYER**").

Seller:	[redacted]	
	Address:	[redacted]
	City, State & Zip Code:	[redacted]
	Contact:	[redacted]
	Phone:	[redacted]
	Email:	[redacted]
Buyer:	Ecogy Solar LLC	
	Address:	315 Flatbush Avenue, Suite 393
	City, State & Zip Code:	Brooklyn, NY 11217
	Contact:	Simon Curtis-Ginsberg
	Phone:	(917) 796-1090
	Email:	simon@ecogysolar.com

GENERAL

This PO shall be subject to [redacted] Solar General Terms and Conditions, attached to and incorporated into this PO as **Exhibit A**. The Contract Documents consist of the following, which, together form the "**Contract**":

(i) [redacted] Solar General Terms and Conditions;

(ii) Terms & Conditions for Transportation Damage Claims, attached to and incorporated into this PO as **Exhibit B**; and

(iii) this Purchase Order.

Except where expressly provided to the contrary in the PO, in the event of any conflict between any of the documents described above, the terms and provisions of this PO shall control over those of the Exhibits.

FORCE MAJEURE

For the avoidance of doubt, Covid-19 impact on Vietnam manufacturing site, including but not limited to site shut down, quarantine etc, are Force Majeure events, and WRO on Hoshine is Change in Law Event, and [redacted] should be given day-to-day extension and other relief for non-performance pursuant to the Force Majeure and change in law clause. Delivery date(s) subject to change due to potential impact from Covid-19, WRO on Hoshine and/or other force majeure or change in law event(s). Buyer will not hold [redacted] liable for delayed shipment(s) or other non-performance due to such reason(s).

PRICE, DELIVERY AND PAYMENT

As full and complete compensation for the DDP delivery of 3.7 MW ("**Requested Product Quantity**") of [redacted] 450 Watt Bifacial photovoltaic modules with Staubli MC4 connectors ("**Product**") delivered to two separate locations as follows: 2.7MW delivered to [redacted] ("**DDP**

Location 1") on or before March 1, 2022 ("**Requested Delivery Date**") and 1MW delivered to [redacted] ("**DDP Location 2**") on or before the Requested Delivery Date the Buyer shall pay to Seller a contract price of $0.355/W + $0.0035/W = $0.35855/W Total ("**Contracted Product Price**") totaling $1,326,635 for 3.7 MW ("**Total Contract Price**"). In the event that the actual quantity of Product delivered to the DDP Location is less than the Requested Product Quantity, the Total Contract Price shall be reduced on a pro rata basis calculated by multiplying the Contracted Product Price by the amount of Product actually delivered to the DDP Location. Payment terms are ten percent (10%) of Price ("**Deposit**") on placing the Purchase Order and the remaining ninety percent (90%) due within thirty (30) days after delivery to the DDP Location.

DEPOSIT TRANSFERRABLE BUT NOT REFUNDABLE

If delays in shipment cause Seller to fail to deliver the Requested Product Quantity to the DDP Location by the Requested Delivery Date, Buyer has the right but not the obligation to cancel the Purchase Order and transfer the Deposit to a different purchase order placed with Seller.

SECTION 201 TARIFF NOT INCLUDED

All prices are exclusive of Section 201 tariff. Buyer hereby agrees to pay Seller all costs resulting from Section 201 tariff applicable to this Purchase Order, whether currently imposed or imposed in the future.

FUTURE TARIFS

If, after this purchase order comes into force, there is any increase in existing tariffs or duties, and/or the imposition of any new tariffs in the U.S. (collectively "New Tariffs"), Buyer shall be responsible for 100% of the increase to the applicable unit price due to the New Tariffs. Buyer may elect to cancel or postpone this order as to any Modules so affected by the New Tariffs by giving a 120 days' notice. In the event that there are any retrospectively levied tariffs or duties imposed on the Modules, including those were already delivered, Buyer shall reimburse Seller the differences accordingly within the earlier of 30 days after Seller makes the payments of levied tariffs or duties or 30 days after delivery. In the event there becomes a reasonable likelihood of retroactive tariffs then Buyer shall issue a letter of credit or establish an escrow account to cover the potential tariff liability prior to the delivery of any Modules.

GENERAL & MISCELLANEOUS PROVISIONS

The Contract is the full and complete agreement between Seller and Buyer with respect to all matters relating to the Contract Documents and supersedes all other agreements between the parties hereto relating thereto and may not be modified without the written consent of both parties.

This Purchase Order may be executed in counterparts, all of which shall be deemed an original and all of which together with the attached and incorporated Exhibits constitute a fully executed agreement even though all signatures do not appear on the same document.

The Contract Documents shall be governed by the law of the State of New York, without regard to principles of conflicts of laws.

[redacted]

[redacted]

[redacted]

[redacted] 249.48kW

Milestone		Description	Date Sent	Date Due	Percentage	Amount
1		Contract Execution/NTP			15.00%	$38,012.39
2		Permits			5%%	$12,670.80
3		Mobilization			15.00%	$38,012.39
4		Equipment staging			12.00%	$30,409.92
5		Racking			7.00%	$17,739.12
6		Panel/Inverter Wire			7.00%	$17,739.12
7		Panels			5.00%	$12,670.80
8		Inverter Install			5.00%	$12,670.80
9		Equipment Install			5.00%	$12,670.80
10		Clean Up			5.00%	$12,670.80
11		Mechanical			5.00%	$12,670.80
12		Substantial			5.00%	$12,670.80
13		Final			9.00%	$22,807.44
				Total		$253,415.96

	Total Cost	Cost Per Watt
AC Inverter Wire	$4,490.64	$0.02
Switchgear/Transformer	$44,906.40	$0.180
Ballast Block	$4,740.12	$0.019
Permits	$12,474.00	$0.050
Labor	$59,570.00	$0.239
Rentals	$9,979.20	$0.040
BOS	$22,453.20	$0.090
Racking	$32,432.40	$0.130
General Conditions	$12,474.00	$0.050
Overhead & Profit	$49,896.00	$0.200
Total	$253,415.96	$1.016
Alternatives		
Engineering	*$24,948.00*	*$0.100*

	Total ManHours	851
249480	Manhour Cost	$59,570

Labor Hours Chart

Description	Total Man Hours
Mobilization	150
PV Back of Panel & Optimizer Wiring	29
PV Homerun Wiring	100
String Inverter & Combiner Box Install	61
Inverter Output Cutout Install	65
Equipment Installation	22
Equipment Grounding	14
Wire Management	29
Data Acquisition System	25
Commissioning/Acceptance Testing	26
Conduit Insta l	35
Racking Install	298
Panel Install	147
Total	851

[redacted] 249.48kW

Milestone		Description	Date Sent	Date Due	Percentage	Amount
1		Contract Execution/NTP			15.00%	$35,094.05
2		Permits			5%%	$11,698.02
3		Mobilization			15.00%	$35,094.05
4		Equipment staging			12.00%	$28,075.24
5		Racking			7.00%	$16,377.22
6		Panel/Inverter Wire			7.00%	$16,377.22
7		Panels			5.00%	$11,698.02
8		Inverter Install			5.00%	$11,698.02
9		Equipment Install			5.00%	$11,698.02
10		Clean Up			5.00%	$11,698.02
11		Mechanical			5.00%	$11,698.02
12		Substantial			5.00%	$11,698.02
13		Final			9.00%	$21,056.43
				Total		$233,960.30

	Total Cost	Cost Per Watt
AC Inverter Wire	$4,498.20	$0.02
Switchgear/Service Consolidation	$24,990.00	$0.100
Ballast Block	$4,748.10	$0.019
Permits	$12,495.00	$0.050
Labor	$59,780.00	$0.239
Rentals	$9,996.00	$0.040
BOS	$22,491.00	$0.090
Racking	$32,487.00	$0.130
General Conditions	$12,495.00	$0.050
Overhead & Profit	$49,980.00	$0.200
Total	$233,960.30	$0.936
Alternatives		
Engineering	*$21,241.50*	*$0.085*

	Total ManHours	854
249900	Manhour Cost	$59,780

Labor Hours Chart

Description	Total Man Hours
Mobilization	150
PV Back of Panel & Optimizer Wiring	29
PV Homerun Wiring	101
String Inverter & Combiner Box Install	61
Inverter Output Cutout Install	65
Equipment Installation	22
Equipment Grounding	14
Wire Management	29
Data Acquisition System	25
Commissioning/Acceptance Testing	26
Conduit Insta l	36
Racking Install	299
Panel Install	147
Total	854

[redacted] **249.48kW**

Mi estone	Description	Date Sent	Da e Due	Percentage	Amount
1	Contract Execut onNTP			5.00%	$ 6,2 5.18
2	Permi s			5%%	$15, 15.06
3	Mob liz ion			5.00%	$ 6,2 5.18
	Equipment staging			3.00%	$36,996.1
5	Racking			7.00%	$21,581.08
6	Panel/Inverter Wire			7.00%	$21,581.08
7	Pane s			5.00%	$15, 15.06
8	Inverter Ins all			5.00%	$15, 15.06
9	Equipment Install			5.00%	$15, 15.06
10	Clean Up			5.00%	$15, 15.06
11	Mechanical			5.00%	$15, 15.06
12	Subs an ial			5.00%	$15, 15.06
13	Final			9.00%	$27,7 7.11
			Total		$308,301.20

	Total Cost	Cost Per Wa t
AC Inver er Wire	$17, 63.60	$0.07
Switchgear Transformer	$,905. 0	$0.18
Ba last B ock	$6,257.00	$0.025
Civil	$6,257.00	$0.025
Labor	$136,160.00	$0.5 6
Rentals	$12, 7 .00	$0.050
BOS	$27, 2.80	$0.110
General Conditions	$7, 8 . 0	$0.030
Overhead & Profit	$ 9,896.00	$0.200
otal	$308 301 20	$1 236
Alternatives		
Eng neer ng	$17,500.00	$0.070

Labor Hours Chart

Descr ption	otal Man Hours
Mobi lzation	150
PV Back of Panel & Optim zer Wiring	29
PV Homerun Wiring	100
String Inve ter & Combiner Box Install	61
Inverter Output Cuircut Install	65
Equipment Insta la ion	22
Equipment Grounding	1
Wire Management	29
Data Acquisit on System	25
Commiss oning/Accep ance Testing	26
Conduit Insta l	35
Racking Install	298
Panel Install	1 7
otal	881

[redacted] **249.9kW**

Mi estone	Description	Date Sent	Da e Due	Percentage	Amount
1	Contract Execut onNTP			5.00%	$ 6,696.02
2	Permi s			5%%	$15,566.01
3	Mob liz ion			5.00%	$ 6,696.02
	Equipment staging			3.00%	$37,358. 1
5	Racking			7.00%	$21,792. 1
6	Panel/Inverter Wire			7.00%	$21,792. 1
7	Pane s			5.00%	$15,566.01
8	Inverter Ins all			5.00%	$15,566.01
9	Equipment Install			5.00%	$15,566.01
10	Clean Up			5.00%	$15,566.01
11	Mechanical			5.00%	$15,566.01
12	Subs an ial			5.00%	$15,566.01
13	Final			9.00%	$28,018.81
			Total		$311,320.10

	Total Cost	Cost Per Wa t
AC Inver er Wire	$12, 95.00	$0.05
Switchgear Serv ce Conso idation	$2 ,990.00	$0.100
Ba last B ock	$6,2 7.50	$0.025
Civil	$33, 86.50	$0.13
Labor	$136,6 0.00	$0.5 7
Rentals	$12, 95.00	$0.050
BOS	$27, 89.00	$0.110
General Conditions	$7, 97.00	$0.030
Overhead & Profit	$ 9,980.00	$0.200
otal	$311 320 10	$1 246

Labor Hours Chart

Descr ption	otal Man Hours
Mobi lzation	150
PV Back of Panel & Optim zer Wiring	29
PV Homerun Wiring	101
String Inve ter & Combiner Box Install	61
Inverter Output Cuircut Install	65
Equipment Insta la ion	22
Equipment Grounding	1
Wire Management	29
Data Acquisit on System	25
Commiss oning/Accep ance Testing	26
Conduit Insta l	36
Racking Install	299
Panel Install	1 7
otal	884

[redacted]