

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-34, SUB 54

In the Matter of:)
Application of Appalachian State)
University, d/b/a New River Light)
And Power Company For)
Adjustment of General Base Rates)
And Charges Applicable to Electric)
Service)

**POST-HEARING BRIEF OF
NANCY LAPLACA**

In this Post-Hearing Brief (PHB), I want to make the following points:

(1) NRLP’s proposed \$6.00/kW/month charge is far too high and will kill local solar, as it will add fees that equal 80% of the system’s original cost over its lifetime.

(2) NRLP estimates the value of distributed solar at 11.9 cents/kWh (NRLP’s initial estimate was 13.7 cents/kWh), which is almost 2.5 cents/kWh more than NRLP’s 2021 average retail rate of 9.47 cents/kWh.¹ In addition, NRLP should base the monthly solar fee on the actual installed capacity rather than the inverter size.

(3) NRLP’s buy-all sell-all rate (“forced sale”) has resulted in 15 solar systems installed in 15 years. During this 15-year period, the cost of solar declined 90-95%.² In at least two surveys over a decade, 75% to 90% of NRLP’s customers have told them that they want clean energy. As NRLP’s first customer-intervener in a rate case in its 108-

¹ https://www.eia.gov/electricity/sales_revenue_price/pdf/table6.pdf

² If the purpose of NRLP’s forced sale solar scheme was to kill rooftop solar, they were quite successful. If the purpose, however, was to increase distributed solar, NRLP might have figured out after a decade that this tariff wasn’t working, as its percentage of solar electricity is ~0.0016% (estimated output of 15 systems out of ~9,000).

1 year history, I believe that NRLP has willfully ignored what its customers -- and its
2 own students -- want, particularly on a climate-changed planet.³

3 (4) NRLP stated that the “skyrocketing” cost of natural gas in 2022 is why it had to
4 borrow \$7 million as an emergency cash infusion. This \$7 million is ~43% of
5 NRLP’s total revenue requirement of \$16.2 million for 2022, and a giant red flag.

6 (5) NRLP’s isolated distribution system – with only one transmission line in and out of
7 Boone – means that distributed energy is even more important.

8 (6) We are in a climate emergency and need all the clean energy we can get.

9
10 **1. NRLP Proposed \$6.00/kW/Month Charge For Solar Customers Will Kill Local**
11 **Solar, As It Adds 80% Of The System’s Original Cost Over The 30-Year Solar**
12 **System Lifetime.**

13 NRLP’s proposed net metering charge of \$6.00 per installed kilowatt (kW) is so high that
14 few people will be able to afford rooftop solar, resulting in a continuation of zero rooftop solar in
15 Boone.⁴ Utilities that have imposed the same high monthly fee have seen rooftop solar
16 installations fall 95%,⁵ and the same thing will happen in Boone. The table below shows how a
17 \$6.00/month/kW charge would affect my household’s total cost of rooftop solar over its 30-year
18 expected life:

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21 ³ Like many others I know in Boone, I am motivated by a desire to reduce the harmful – and now obvious – effects
22 of climate change by using clean solar electricity. We have already switched to heat pumps and have two Electric
23 Vehicles (EVs) in our household.

⁴ For the record, contrary to Mr. Miller’s statements, I believe we need all types of solar: utility-scale, rooftop,
community, and virtual power plants. Each has its strengths, and in a climate changed world, distributed solar will
only become more valuable.

⁵ <https://grist.org/energy/utility-monopolies-are-hurting-rooftop-solar-can-antitrust-lawsuits-rein-them-in/>

Table 1

Solar System Cost Under NRLP's Proposed \$6.00/kW/month Charge ⁶	
Solar Capacity	10 kW
Cost per kW	\$3,000
Total Cost	\$30,000
30% Federal Tax Credit ⁷	(\$10,000)
NRLP's Proposed SSC of \$6.00/kW/mo	\$60/month; \$720/year \$7,200 every 10 years
NRLP's Proposed SSC Over 30 Year Expected Lifetime of Solar System	+\$21,600
Total System Cost With NRLP Proposed SSC	\$30,000 +\$21,600 \$51,600

2. NRLP Values Distributed Solar at 11.9 cents/kWh (earlier filing 13.7 Cents/kWh) – Far More Than NRLP's 2021 Average Retail Rate Of 9.47 Cents/kWh.⁸

Distributed solar has real value. AppVoices witness, solar expert Mr. Justin Barnes,⁹ found that under all solar scenarios that include avoided distribution costs, distributed solar is worth at least 15% more than retail rates, and that NRLP's system peaks align well with solar production. I agree with Mr. Barnes that rollover credits should be either indefinite, rollover in April or May so that customers can utilize credits built up in the summer or allow the customer to choose.

Mr. Barnes pointed out that NRLP's calculations on the costs and benefits of distributed solar are incorrect because the valuation was based on the volumetric residential retail rate, rather than including demand-based cost elements as well, and averaged over all rate classes, not just

⁶ This bid is from an Asheville-based solar installer.

⁷ The 30% solar (federal) tax credit will reduce a qualifying taxpayer's tax owed 1:1. In other words, if my household owes \$10,000 in federal taxes to the IRS, that \$10,000 would be zeroed out by the \$10,000 tax credit, based on a solar system that costs ~\$30,000 installed.

⁸ https://www.eia.gov/electricity/sales_revenue_price/pdf/table6.pdf

⁹ See Barnes Direct, pages 4, 8, 9, 10, 20 and 28.

residential. NRLP also failed to include avoided distribution costs in its valuation of distributed solar, which goes against established practices around the U.S.

Mr. Barnes provides a comparison of NRLP’s estimated solar value versus Mr. Barnes’ estimated solar value in Table 3 of Barnes Direct.¹⁰ For clarity, I have taken some numbers from Mr. Barnes’ Table 3 and created a simpler chart to juxtapose these two views of the value of distributed solar (NRLP versus Barnes). Note that NRLP’s retail rate of electricity was 9.47 cents/kWh in 2021. In this docket, NRLP estimates the value of rooftop solar at 11.9 cents/kWh, and when distribution value of 5.2 cents/kWh is added, equals 17.1 cents/kWh. As someone who has been watching solar costs closely for 16 years, I’m stunned. During the 15 years it took NRLP to put up 15 solar systems, the cost of solar declined 90-95%. (See Attachment A.)

(From Table 3, Barnes Direct, page 28)			
Customer-Sited PV Value by Capacity Contribution			
(i.e. which direction solar system faces: south, southeast or southwest)			
Metric	South Facing Cents/kWh	NRLP Original Cents/kWh	NRLP Corrected Cents/kWh
Solar Value Rate (\$/kWh) (determined by Mr. Barnes)	12.2	13.7	11.9
Values Below This Row Include the Value of Avoided Distribution Costs, (i.e. costs that NRLP will “avoid” due to the value of customer-sited solar)			
Estimated Avoided Distribution Cost in \$/kWh	5.2	5.2	5.2
Solar Value Including Distribution (\$/kWh)	17.4	18.9	17.1
Rooftop Solar’s Value as a % of NRLP’s Retail Rate	117.6%	127.3%	115.3%

¹⁰ See Justin Barnes Direct, page 28.

1 In a related issued, the monthly solar fee (the “SSC”) should be based on the actual
2 nameplate installed capacity, not the inverter size. As more solar is installed across the U.S., and
3 more people move to electrify and get rid of fossil fuels, electric loads will increase. This is
4 illustrated by my household: over the past two to three years, we have replaced our two internal
5 combustion engine (ICE) vehicles with electric vehicles (EVs) and are using mostly electric heat
6 pumps for heat and cooling, rather than a propane HVAC. The result is that our electricity bill
7 has *more than doubled*.

8 **3. NRLP’s Current Buy-All Sell-All Rate Design Has Resulted In Only 15 Solar**
9 **Systems, and a Decade Of Surveys Show That Customers Want Local Clean Solar**

10 NRLP’s current buy-all sell-all (forced sale) has resulted in 15 solar systems over 15 years.
11 During this same period, the costs of solar declined 90-95%. See Attachment 1. At NRLP’s
12 current rate of one solar installation per year, it will take 890 years for NRLP to get to 10% solar
13 penetration.¹¹ NRLP must know that its current “forced sale” rooftop solar rules have *predictably*
14 resulted in close to zero rooftop solar for NRLP customers. Further, NRLP knew from surveys
15 that tying its captive customers to fossil gas until ~2036 – nearly 14 years from now -- is not
16 what its customers want.¹²

17 I want to point out to the Commission that a comment was submitted by Ms. Lynne Mason,
18 who served on Boone Town Council for 18 years, and with her family, owns three restaurants
19 and bars in Boone, and sent a letter to the NCUC asking for fair net metering of \$2.00/kW or
20 less. Blue Ridge Women in Agriculture (BRWIA), a local food distribution organization with

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23 ¹¹ NRLP has 8,900 meters; at a rate of one solar installation per year, it will take 890 years for NRLP to achieve
24 10% solar penetration (~440 meters).

¹² 2017 survey results from a PPT given to me by Ed Miller, dated 8/19/19.

1 over 100 local, mostly organic food producers, and a weekly customer base of 250-300
2 customers who purchase meat, prepared foods, vegetables, etc. -- also want fair net metering.
3 Local solar defines sustainability as it goes up quickly, requires little maintenance, requires no
4 fuel, there is no risk of exploding or freezing gas pipelines, there is no waste, and solar provides
5 good-paying, local jobs.¹³

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7 **4. NRLP's Own Testimony States The "Skyrocketing" Cost Of Natural Gas, And
Emergency-Borrowed \$7 Million To Pay For Natural Gas Cost Increases.**

8 NRLP's application¹⁴ states:

9 "Due to the *extraordinarily volatile natural gas market* within the past year, NRLP has
10 *incurred drastic increases in its purchased power costs*. These increases have caused
significant cash flow issues for NRLP." (*emphasis added*)

11 What is remarkable about the statement above is that the \$7 million NRLP borrowed is
12 43% of its total revenue requirement. In other words, above and beyond what NRLP expected to
13 pay for purchased power – which is 85% fossil gas -- NRLP had to borrow \$7 million. Compare
14 this to the hydropower NRLP purchased, which cost ~4 cents/kWh *less* than expected. In other
15 words, NRLP's shortfall would likely have been even worse if not for the unexpected savings
16 from hydropower. In addition, the cost to borrow the money was over 2.5% -- not a small sum.
17 Will NRLP need to borrow money again next year for natural gas price spikes? NRLP knows –
18 as all utilities do – that the cost of natural gas can't be controlled. Prices can be hedged for a
19 short time, perhaps a year, but NRLP has committed its ratepayers to another 15 years of 85%

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23 ¹³ https://www.washingtonpost.com/business/2023/07/28/federal-infrastructure-spending-economy-manufacturing/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most

24 ¹⁴ NRLP application, page 2.

1 natural gas, which is a huge risk. This risk, as the Commission knows, is borne by NRLP's
2 customers, since fuel costs pass directly through to customers and the utility bears no risk for
3 increasing fuel costs.

4 A responsible, long-term view needs to address the fact that natural gas will not last
5 forever. Eventually, we will run out, or it will be so expensive or hard to find that only a few can
6 afford it. Natural gas' contribution to climate change is both oversized¹⁵ (86 times worse than
7 CO2) and growing rapidly.¹⁶ Customers, including friends and neighbors who want self-
8 generated solar to benefit ourselves, increase our community's resilience, bring good-paying jobs
9 that we can be proud of to our community, and reduce toxic air and water pollution. Local solar
10 is a win-win-win. As the U.S. uses more natural gas for electricity production as well as heating,
11 and we export more natural gas overseas as LNG (Liquefied Natural Gas), prices will likely
12 increase, illustrated by the cost volatility of natural gas currently at an all-time high.¹⁷

13 In this worrying new era of increasing climate destruction, during (one of) Texas' intense
14 heat waves this summer, natural gas pipeline operators had to release or flare tons of gas to avoid
15 explosions. Temperatures were so hot that the gas had to be released, or it would explode.¹⁸ As
16 climate changes worsens – and speeds up -- this danger will increase along with temperatures.

17 **5. NRLP's isolated distribution system means that distributed energy is even more**
18 **important.**

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21 ¹⁵ <https://www.greenpeace.org/usa/fighting-climate-chaos/issues/natural-gas/>

22 ¹⁶ <https://www.noaa.gov/news-release/greenhouse-gases-continued-to-increase-rapidly-in-2022#:~:text=The%202022%20methane%20increase%20was,times%20their%20pre%2Dindustrial%20level.>

23 ¹⁷ [volatility of natural gas is at an all-time high](#)

24 ¹⁸ https://www.google.com/search?q=texas+pipeline+operators+released+or+flared+tons+of+gas+to+avert+explosions+during+heatwave&rlz=1C5CHFA_enUS854US859&oq=texas+pipeline&aqs=chrome.1.69i57j35i39i650j0i131i433i512j0i512j46i175i199i512j0i512i2j69i60.7347j0j4&sourceid=chrome&ie=UTF-8

1 The fact that NRLP has only one transmission line coming into Boone means that distributed
2 energy is even more important when transmission lines go down. As we've seen in the recent
3 tragic Maui fires, it's "likely" that a power line started the first blaze.¹⁹ In an era of extreme
4 weather, distributed solar is more important in Boone than in other, larger cities with redundant
5 power lines in case one line goes down.

6 **6. We Are In A Climate Emergency**

7 The week before the NRLP hearing, July 10 and 11, 2023, the world experienced the three
8 hottest days on record, ending with a heat index of 105 degrees Fahrenheit in Eastern North
9 Carolina on July 29, 2023.²⁰ Heatwaves, floods, droughts, wildfires, and crop failures are
10 increasingly attributed to climate change.²¹ As the head of the United Nations, Antonio Guterres
11 recently stated, "the age of global boiling" has arrived.²² Here's what's at risk:

- 12 • Crop failures – which are underestimated in current models²³ -- and possible famine
- 13 • Worsening climate extremes²⁴
- 14 • Ever-increasing numbers of climate refugees²⁵

19 <https://www.washingtonpost.com/climate-environment/2023/08/15/maui-fires-power-line-cause/>
20 <https://spectrumlocalnews.com/nc/charlotte/weather/2023/07/26/extremely-hot-to-end-the-week-in-north-carolina>
21 <https://www.npr.org/2023/07/25/1189837347/u-s-european-heat-waves-virtually-impossible-without-climate-change-new-study-fi#:~:text=Heat%20waves%20in%20Europe%20last,Washington%2C%20Oregon%20and%20British%20Columbia>
22 <https://www.washingtonpost.com/climate-environment/2023/07/29/un-what-is-global-boiling/>
23 <https://www.axios.com/2023/07/05/crop-failure-climate-models>
24 <https://www.pbs.org/newshour/science/scientists-confirm-global-floods-and-droughts-worsened-by-climate-change>
25 <https://www.unhcr.org/uk/what-we-do/how-we-work/environment-disasters-and-climate-change/climate-change-and-disaster>

- 1 • Accelerating sea level rise, especially as the Greenland ice sheet rapidly disintegrates,
2 and Antarctica’s Thwaites and Pine Island glaciers break apart.²⁶
- 3 • London-based think tank Chatham House says that climate change is sending “mega-
4 shocks” throughout the world economy.²⁷ Sea level rise from rapidly disintegrating
5 glaciers will – not *may* – make many coastal cities unliveable. As we’ve seen, other
6 places are literally burning to the ground.

7 **CONCLUSIONS AND RECOMMENDATIONS:**

- 8 **A. NRLP’s proposed solar fee of \$6.00/kW/month should be reduced to**
9 **\$2.00/kW/month or less.** If NRLP’s proposed \$6.00/kW/month charge is approved,
10 Boone will continue its sad trajectory of a handful of solar roofs in a town where
11 customers have repeatedly shown they want clean energy.
- 12 **B. Buy-All Sell-All Kills Rooftop Solar.** NRLP has had only 15 solar rooftops (out of
13 8,900 total meters) over a 15-year period. NRLP knew that its “forced” sale rate was
14 unpopular and would result in such dismal numbers. There is no good reason to
15 continue this failed rate design.
- 16 **C. NRLP has ignored the clear directive from its customers** over multiple surveys
17 over the period of a decade that they want local clean energy such as rooftop solar.
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23 ²⁶ https://www.youtube.com/watch?v=x4_ymrE319o

²⁷ https://markets.businessinsider.com/news/stocks/heatwaves-climate-change-global-warming-mega-shock-economy-market-outlook-2023-7?mc_cid=693648b1f2&mc_eid=7e24fc0e68

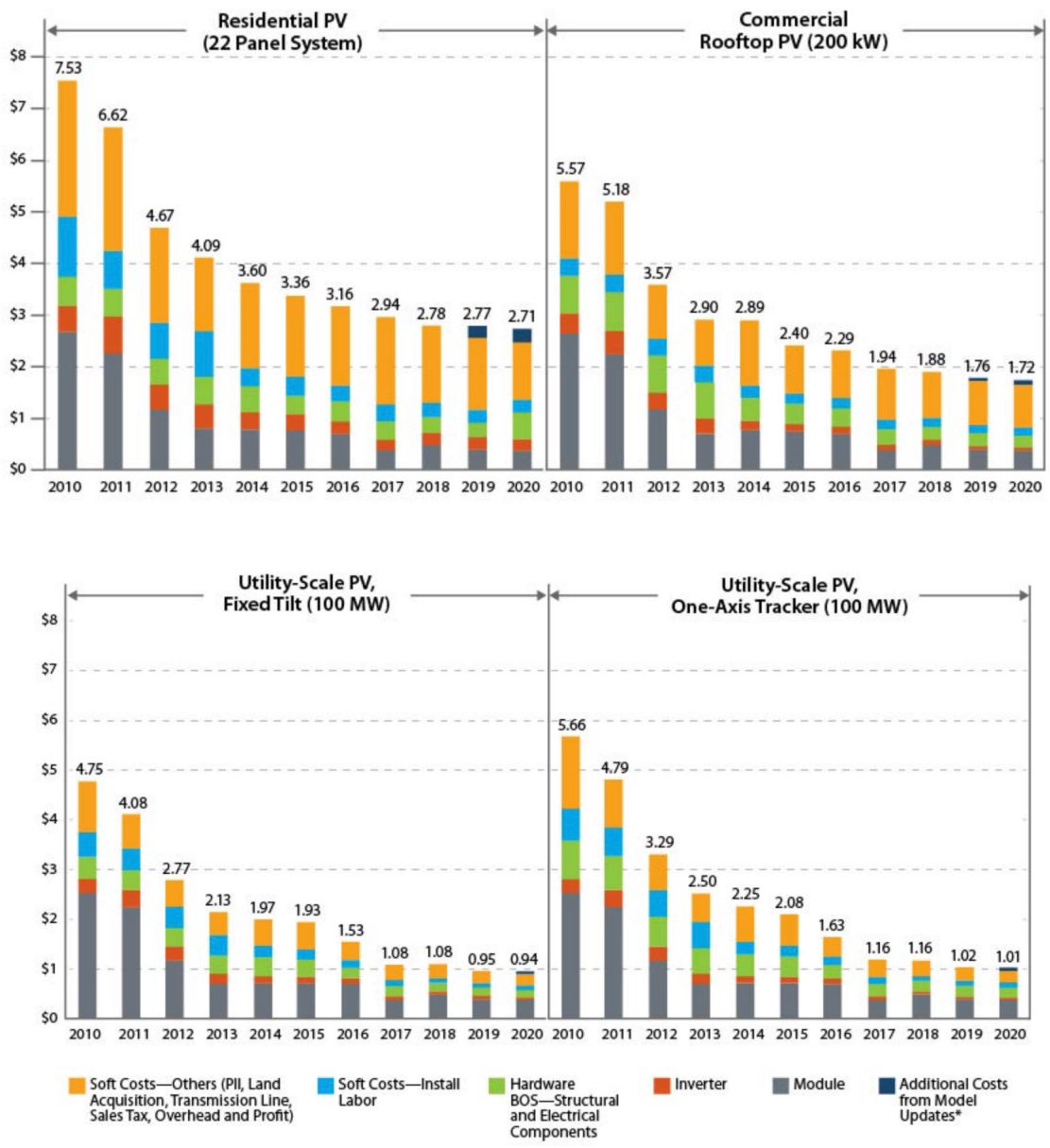
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D. NRLP’s emergency request for an additional **\$7 million to pay for fuel cost increases**– a stunning 43% of its total revenue requirement for 2022 – is a giant red flag.

Submitted electronically this 18th day of August, 2023.

/s/ Nancy LaPlaca, J.D.
239 Wildwood Lane
Boone NC 28607
828-434-3423
Laplaca.nancy@gmail.com

Attachment A²⁸



²⁸ <https://www.nrel.gov/news/program/2021/documenting-a-decade-of-cost-declines-for-pv-systems.html> See the National Renewable Energy Lab’s (NREL’s) 2021 study on solar cost declines since 2010, including residential PV, commercial PV (200 kW), utility-scale fixed tilt, and utility-scale on a single axis tracker.

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CERTIFICATE OF SERVICE

I certify that a copy of the Direct Testimony of Nancy LaPlaca, J.D., has been served on all parties of record or their attorneys, or both, in accordance with Commission Rule R1-39, by electronic delivery.

This 18th day of August, 2023.

Electronically submitted

Nancy LaPlaca