

**BEFORE THE
NORTH CAROLINA UTILITIES COMMISSION
JUNO SOLAR, LLC
DOCKET NO. EMP-116, SUB 0**

**REVISED PUBLIC REDACTED PRE-FILED DIRECT TESTIMONY
OF
PIPER MILLER**

July 26, 2021

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

3 .A. My name is Piper Miller. I am Vice President of Development for Pine Gate
4 Renewables, LLC (“Pine Gate Renewables”), and my business address is 130
5 Roberts Street, Asheville, North Carolina 28801. Juno Solar, LLC (“Juno Solar”
6 or “Applicant”) is wholly owned by Birch Creek Development, LLC (“Birch
7 Creek”) and operated in collaboration with Pine Gate Renewables, which
8 manages the development of Juno Solar’s proposed utility-scale solar
9 photovoltaic (“PV”) generating facility.

10
11 **Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL
12 EXPERIENCE.**

13 A. I obtained a Bachelor of Arts degree in Environmental Science and Policy, Summa
14 Cum Laude, from Florida State University. I have worked with Pine Gate
15 Renewables since 2017 and have held various positions, including: Vice President
16 of Development; Director of Development; Market Lead (where I was responsible
17 for spearheading market-entry and development strategy in the Northeastern United
18 States and overseeing Pine Gate Renewables’ pipeline of utility-scale and
19 distributed generation solar projects in the region); Policy Lead (where I worked
20 with Pine Gate Renewables’ Vice President of Market Development to analyze and
21 present new market opportunities for solar development with a focus on regulatory
22 policy and power off-take strategy); and Origination Coordinator (where I

1 performed land evaluation for large-scale solar energy project feasibility and
2 analyzed utility infrastructure and environmental and geographical constraints).
3 Prior to joining Pine Gate Renewables, I worked at the Office of Sustainability for
4 Leon County Government, where I collaborated on policy and program
5 development to craft innovative solutions to community sustainability barriers. I
6 was also responsible for the management of education and outreach programs to
7 promote energy and water conservation, waste reduction, and sustainability
8 throughout the County.

9

10 **Q. PLEASE SUMMARIZE YOUR CURRENT RESPONSIBILITIES WITH**
11 **PINE GATE RENEWABLES.**

12 A. As Vice President of Development for Pine Gate Renewables, I oversee
13 development strategy and execution for Pine Gate Renewables' portfolio of solar
14 projects in the Southeastern United States. My role is deeply integrated with
15 market strategy, regulatory policy, and project finance in order to identify new
16 opportunities for solar project development and successfully bring existing
17 projects to commercial operation.

18

19 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

20 A. No.

21

22 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

1 A. The purpose of my testimony is to demonstrate that Juno Solar’s Application for a
2 Conditional Certificate of Public Convenience and Necessity (“CPCN”) meets the
3 requirements of N.C. Gen. Stat. § 110.1 and Commission Rule R8-63.
4

5 **Q. PLEASE DESCRIBE JUNO SOLAR AND THE PARENT COMPANY OF**
6 **JUNO SOLAR.**

7 A. Juno Solar is a limited liability company incorporated in the State of North Carolina
8 since October 30, 2020. As mentioned previously, Juno Solar is wholly owned by
9 Birch Creek in collaboration with Pine Gate Renewables, which manages the
10 development of Juno Solar’s proposed utility-scale solar PV generating facility.
11

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15
16 **BACKGROUND AND PROJECT FINANCE**

17 **Q. PLEASE DESCRIBE BIRCH CREEK AND PINE GATE RENEWABLES’**
18 **PERSONNEL, TECHNICAL EXPERIENCE, AND FINANCIAL**
19 **CAPABILITY TO OWN AND OPERATE JUNO SOLAR.**

20 A. Birch Creek and Pine Gate Renewables have extensive experience in successfully
21 owning and operating solar PV facilities in North Carolina and across the United
22 States. Birch Creek and Pine Gate Renewables have placed more than 500

1 megawatts (“MW”) DC of solar generating capacity into service to date, with
2 approximately 440 MW DC of capacity currently in construction. Birch Creek and
3 Pine Gate Renewables are currently developing over 8,000 MW DC of solar
4 projects across the country.

5
6 Pine Gate Renewables is developing the Juno Solar project as a partner in Birch
7 Creek, and has extensive experience developing solar generating projects in North
8 Carolina and throughout the United States. Pine Gate Renewables has operating
9 solar projects in five states, but the majority of its operating projects are located in
10 North Carolina. Pine Gate Renewables has sophisticated in-house development
11 operations and project finance capabilities, and has closed on over \$2 billion in total
12 project capital raised in support of its solar project development. Pine Gate
13 Renewables’ affiliated engineering, procurement, and construction (“EPC”)
14 company, Blue Ridge Power, LLC, is the largest and most experienced EPC firm
15 in the Southeast.

16
17 Key personnel involved with the Juno Solar project are as follows:

18 Piper Miller – Vice President, Development. As Vice President of Development
19 for Pine Gate Renewables, Piper leads utility-scale solar project development and
20 market entry strategy for the company’s solar project footprint in the Southeastern
21 U.S. Overseeing a 5 GW pipeline of solar projects, Piper’s role is deeply integrated
22 with market strategy, regulatory policy, and project finance in order to identify new

1 opportunities for solar project development and successfully bring existing projects
2 to commercial operation. With more than six years in the renewable energy and
3 sustainability sector, Piper has spearheaded market and development opportunities,
4 analyzed regulatory policies, and advised on siting and off-take strategies for
5 portfolios of solar projects across more than ten states on the east coast.

6
7 Sean Andersen – Director, Project Management. Sean has more than six years of
8 experience in the solar industry, where his extensive knowledge of business
9 development and land origination has led teams in the development of utility-scale
10 solar sites. As Director of Project Management at Pine Gate Renewables, Sean
11 conducts due diligence and project analysis for solar PV projects in various states
12 while identifying high-level key project, interconnection, and access constraints.
13 While interfacing with engineering, finance, and construction to ensure effective
14 development of solar projects, he manages consultants, budgets, milestones, and
15 deliverables to ensure the success of projects.

16
17 Mak Nagle – Senior Vice President, Development. Mak is responsible for leading
18 strategic initiatives within the scope of Pine Gate Renewables’ solar development
19 effort. Mak brings more than twenty years of experience in power marketing,
20 business development, market design, transmission operations, and planning. He
21 also provides guidance on technical issues and emerging technologies
22 (e.g., energy storage) while coming up with unique propositions for Pine Gate

1 Renewables' clients. For the past eight years, Mak has successfully negotiated
2 over 2 GW of purchase power agreements ("PPAs") with multiple utilities and
3 electric cooperatives, as well as with University of Richmond in Virginia. Prior
4 to entering the renewable space, Mak worked at Southwest Power Pool, where he
5 was responsible for developing their Day 2 energy market and running
6 transmission studies and planning groups. He has also spent more than six years
7 as a planning engineer in Entergy's Transmission Group, where he was involved
8 in restoring the electric grid after Hurricanes Katrina and Rita.

9
10 Steve Levitas – Senior Vice President, Regulatory & Governmental Affairs.

11 Steve leads Pine Gate Renewables' policy, regulatory, and government affairs
12 efforts, including its engagement in energy market reform and the expansion of
13 off-take opportunities for independently owned solar generation resources. He
14 previously served as Senior Vice President of Regulatory Affairs and Strategy for
15 Cypress Creek Renewables, where he led the company's regulatory and
16 government affairs activities and advised the company about the impact of public
17 policy on its commercial strategy. Prior to joining Cypress Creek, Steve served as
18 Vice President for Business Affairs and General Counsel for FLS Energy and
19 spent more than 20 years in private law practice, concentrating on renewable
20 energy project development and environmental regulatory matters. In 2015 he
21 was the recipient of The Charlotte Business Journal's Energy Leaders Award.

22

1 From 1993 through 1996, Steve served as Deputy Secretary of the North Carolina
2 Department of Environment, Health, and Natural Resources. Prior to his service in
3 state government, Steve was Director and Senior Attorney of the North Carolina
4 office of the Environmental Defense Fund, which he opened in 1988.

5
6 Tripp McSwain – Senior Vice President, Construction. Tripp has more than nine
7 years of experience as a construction professional in the solar industry. As Senior
8 Vice President of Construction, Tripp is responsible for
9 Pine Gate Renewable’s construction planning, execution, and closeout. His
10 duties include overseeing all projects, providing guidance to project teams,
11 developing agreements with contractors, and creating strategies and processes to
12 ensure that budget, safety, and schedule goals are met. Tripp has overseen the
13 installation of numerous projects totaling over 1.5 GW of solar energy. He has a
14 Bachelor of Science degree in Construction Management and Appropriate
15 Technology from Appalachian State University and holds a NABCEP
16 certification.

17
18 Brian Taddonio – Vice President, Engineering. As the Vice President of
19 Engineering for Pine Gate Renewables, Brian has extensive knowledge of PV
20 engineering standards, NEC and utility regulatory compliance, and
21 project development and construction engineering processes with an emphasis on
22 quality control, maintaining project schedules and budgets, and cost

1 reduction. With twelve years of experience in solar development and EPC, Brian
2 has designed more than 300 MW of installed PV capacity, and has gained
3 substantial experience in utility scale PV development, engineering, and
4 construction. At Pine Gate Renewables, Brian leads the engineering team by
5 developing engineering standards and specifications, strategic alliances, and
6 initiatives for cost reduction and avoidance.

7
8 Jason Birn – Senior Vice President, Project Finance. Jason Birn has twenty years
9 of experience as a debt and equity project finance professional in the utility-
10 scale power and infrastructure sector, with a strong foundation in fundamental
11 credit, financial and industry analysis, origination, and commercial
12 execution. As Senior Vice President of Project Finance at Pine Gate Renewables,
13 Jason oversees raising of the requisite capital needed to construct Pine Gate
14 Renewables' entire solar project portfolio. Moreover, he oversees the building
15 and utilization of complex financial models to assess the economic viability of
16 projects, performs front-end valuation and debt sizing analysis, and quantifies all
17 sources of potential third-party capital throughout a project's life cycle.

18
19 Juno Solar and Birch Creek have the financial capability to own and operate the
20 Juno Solar project. Birch Creek's most recent balance sheet and income statement
21 are provided confidentially and under seal as Confidential Exhibit 1(iii).

22

1 Q. **WHAT IS THE CONSTRUCTION TIMELINE FOR THE FACILITY?**

2 A. Construction for the Juno Solar facility is expected to begin in the second quarter
3 of 2023, and commercial operation is expected to occur in the third quarter of 2024.
4

5 Q. **WHAT IS THE EXPECTED SERVICE LIFE OF THE FACILITY?**

6 A. The expected service life of the Juno Solar facility is forty (40) years.
7

8 Q. **WHAT ARE THE ESTIMATED CONSTRUCTION COSTS FOR THE
9 FACILITY?**

10 A. The estimated construction costs for the Juno Solar facility are approximately
11 \$370,690,000.
12

13 Q. **DOES JUNO SOLAR, ITS PARENT COMPANY, BIRCH CREEK, OR
14 BIRCH CREEK'S AFFILIATE, PINE GATE RENEWABLES, HAVE
15 OWNERSHIP INTEREST IN AND/OR THE ABILITY TO CONTROL
16 GENERATING FACILITIES IN THE SOUTHEASTERN ELECTRIC
17 RELIABILITY COUNCIL ("SERC") REGION?**

18 A. Yes. Pine Gate Renewables has ownership interest in and/or the ability to control
19 through leases or contracts numerous solar PV generating facilities in the SERC
20 region. A list of solar PV generating facilities that Pine Gate Renewables owns or
21 controls through leases or contracts in the SERC region is provided confidentially
22 and under seal as Confidential Exhibit 1(iv).

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SITE AND FACILITY DESCRIPTION

Q. ONCE CONSTRUCTED, WHERE WILL THE JUNO SOLAR FACILITY BE LOCATED?

A. The Juno Solar site consists of twenty-five (25) parcels, or a portion thereof, collectively containing approximately two thousand five hundred eighty-six (2,586) acres of land, located along McFarland Road and Green Chapel Church Road in Marks Creek Township, Richmond County, North Carolina. The project will be in the location described above and as shown in the revised high-resolution color maps attached hereto as Exhibits 2(i) and Confidential Exhibit 2(i)(a).

Q. WHAT IS THE CURRENT LAND USE OF THE SITE AND THE ANTICIPATED USE?

A. The parcels for the project are zoned Agricultural Residential (“A-R”) and Rural Residential (“R-R”), and they are currently being used for agricultural purposes. Juno Solar will lease approximately 2,516 acres of the parent parcels (that total approximately 2,586 acres) for the 275-MWAC solar PV facility that will generate solar energy. The area that is not included in the leased area will be able to continue to be used for agricultural purposes.

A color map showing the proposed site boundary, the proposed point of interconnection, and the proposed substation is attached hereto as Exhibit 2(ii)(a).

1 The color maps attached as Exhibit 2(i) and Confidential Exhibit 2(i)(a) have been
2 revised to eliminate sections of the facility that would require additional rights-of-
3 way. Therefore, no additional right-of-way is needed for the facility. The facility
4 will have a minimum building setback of fifty (50) feet where abutting residential
5 property, and a minimum setback of sixty-five (65) feet from public rights-of-
6 way.

7

8 **Q. WHAT IS THE FACILITY'S ANTICIPATED ELECTRICITY**
9 **PRODUCTION CAPACITY?**

10 A. The nameplate generating capacity of the Juno Solar facility is 275 MWAC. The
11 facility's total dependable capacity is 68.75 MWAC.

12

13 **Q. PLEASE DESCRIBE THE BASIC COMPONENTS OF THE FACILITY.**

14 A. Juno Solar is a 275-MWAC PV array, and the source of its power is solar energy.
15 The facility will consist of a single-axis tracking solar array that is DC-coupled with
16 an energy storage system connected behind a single point of interconnection
17 ("POI") to the Duke Energy Progress, LLC ("DEP") Richmond-Laurel Hill 230 kV
18 transmission line. Juno Solar will require two new substations: a new Juno Solar
19 substation constructed by Juno Solar, and a new DEP switchyard constructed by
20 DEP. The facility's substation and DEP switchyard will be located within the parcel
21 boundaries, as shown on Exhibit 2(i). The Juno Solar substation will be located
22 directly adjacent to the POI, and all connections to the substation will be

1 underground. The solar array will consist of a maximum DC output of
2 approximately 385 MWDC. The energy storage system will have an aggregate
3 power capacity of approximately 68.75 MW and 275 MWh (4-hour duration)
4 subject to change during the design process. Color maps showing the proposed site
5 boundary and layout, with all major equipment, roads, electric facilities, and the
6 POI is attached hereto as Exhibit 2(i) and Confidential Exhibit 2(i)(a).

7
8 Juno Solar plans to deploy Eos Znyth Gen 3.0 battery blocks for its battery storage
9 system, individually rated at 175 kW/700 kWh. The American-made Eos Znyth
10 battery energy storage technology is non-flammable in nature and features better
11 resiliency and longer life than competing battery storage technologies. To ensure
12 optimal performance and thermal stability of the batteries, the Eos Znyth units come
13 equipped with a closed-loop forced ambient-air thermal management system. Juno
14 Solar's battery storage system will be DC-coupled, with the blocks feeding into the
15 individual solar inverters. Annual cycles are not expected to exceed 365 per year
16 and the system will not charge from the grid. The single line diagrams and the EOS
17 Znyth Gen 3.0 battery blocks for the battery storage system are provided
18 confidentially and under seal as Confidential Exhibits 2(ii)(b), 2(ii)(b)(1), (2), and
19 (3).

20
21 Non-adjointing parcels will be connected via underground MV connections. Juno
22 Solar has made the decision to eliminate a non-adjointing section of the parcel

1 to the west from the facility in order to avoid having to acquire rights-of-way
2 through non-connected land. To reiterate, the facility will need no additional
3 rights-of-way in order to construct the facility.

4

5 **Q. PLEASE DESCRIBE THE TRANSMISSION FACILITIES TO WHICH**
6 **THE JUNO SOLAR FACILITY WILL INTERCONNECT AND HOW THE**
7 **PROJECT WILL BE INTERCONNECTED TO THE GRID.**

8 A. The Juno Solar facility will connect to the 230 kV 230 kV Richmond – Laurel Hill
9 Duke Energy Progress, LLC transmission line located on-site. As the proposed
10 POI will be on-site, no additional facilities will be necessary beyond the substation
11 within Juno Solar’s site control area. A color map showing the proposed site
12 boundary, the proposed POI, and the proposed substation is attached hereto as
13 Exhibit 2(i).

14

15

NEED FOR THE FACILITY

16 **Q. PLEASE EXPLAIN THE NEED FOR THE JUNO SOLAR FACILITY.**

17 A. [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]

8
9 DEP. In its 2020 Integrated Resource Plan (“IRP”), DEP identifies six different
10 planning scenarios for its resource portfolio. All six scenarios result in increased
11 solar and storage capacity on the DEP system. For example, the “Base with Carbon
12 Policy” scenario would add approximately 5 GW of new solar capacity and
13 approximately 2 GW of storage capacity to the DEP system during the planning
14 period, with substantially more solar and storage called for in scenarios that would
15 achieve the objectives of the Governor’s Clean Energy Plan, which requires 70%
16 of the state’s electric generation to be sourced from clean energy resources by 2030.
17 Solely sourcing this energy from typical sub-100 MWAC solar projects and small
18 storage installations is likely to prove inefficient (if not infeasible). It is therefore
19 in the interest of meeting Duke’s and the State’s renewable goals to bring on-line
20 large, flexible clean energy-generating resources, like Juno Solar.

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]

17
18 **Q. HAS JUNO SOLAR ENTERED INTO A LARGE GENERATOR**
19 **INTERCONNECTION AGREEMENT (“LGIA”) WITH DEP?**

20 **A.** No. The project has submitted an Interconnection Request and is expected to be
21 studied in the Duke Energy Transitional Cluster Study, which is anticipated to begin
22 in mid-2021. It is estimated that a LGIA will be executed in January 2023.

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REGULATORY APPROVALS AND PERMITS

Q. DOES THE RICHMOND COUNTY ZONING ORDINANCE APPLY TO THE JUNO SOLAR PROJECT?

A. Yes.

Q. PLEASE DESCRIBE THE PERMITS AND APPROVALS YOU ANTICIPATE WILL BE NECESSARY TO COMMENCE CONSTRUCTION OF THE FACILITY.

A. A Special Use Permit is required from Richmond County. In addition to the Special Use Permit, Richmond County will require that Juno Solar obtain a Building Permit from the County.

From the State of North Carolina, the facility will require a commercial driveway permit from the North Carolina Department of Transportation, and a stormwater permit and an erosion and sedimentation control plan from the NC Department of Environmental Quality (“NCDEQ”).

In regard to federal permits and approvals, Environmental Impact Assessment (“EIA”)-860 and EIA-923 are required. Also, a FAA Section 777.9 Notice has been completed.

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COMMUNITY

Q. PLEASE DESCRIBE THE ANTICIPATED BENEFITS OF THE FACILITY TO THE LOCAL COMMUNITY.

A. The Juno Solar facility will bring a variety of financial benefits to Richmond County. Juno Solar anticipates that the County will realize property and real estate tax revenues. Also, the site’s landowners will receive revenue in the form of lease payments each year for the life of the facility, and this revenue will assist them in maintaining agricultural operations on their land.

In addition to these financial benefits, Juno Solar will create community benefits. Local contractors and businesses such as installation, fencing, landscaping, and machine rental companies will receive sales opportunities from the facility’s construction and operations. During the construction process, the facility will offer construction jobs.

Q. WHAT ARE THE EXPECTED ENVIRONMENTAL IMPACTS OF THE FACILITY?

A. By design and by its nature as a solar PV facility, the facility will provide clean renewable power with minimal environmental impacts. The facility will create no air emissions and it will not create any noise impacts outside the fence line. The facility will comply with the NCDEQ permits and exceed all state and local requirements including those regulating erosion and sedimentation in the interest

1 of environmental protection. At the end of the facility's useful life, the facility's
2 materials can be recycled or sold for scrap, and the land can be returned to
3 agricultural use.

4
5 **CONDITIONAL CPCN**

6 **Q. HAS JUNO SOLAR SUBMITTED AN APPLICATION FOR A CPCN**
7 **WITH CONDITIONS?**

8 A. Yes.

9
10 **Q. PLEASE DESCRIBE THE REASONS THAT JUNO SOLAR IS**
11 **REQUESTING A CONDITIONAL CPCN.**

12 A. As background to Juno Solar's Application for a Conditional CPCN, DEP and
13 Duke Energy Carolinas, LLC's (together, "Duke Energy") filed their proposed
14 revisions to Attachment J (Standard Large Generator Interconnection Procedures
15 ("LGIP")) to their Joint Open Access Transmission Tariff with the Federal
16 Energy Regulatory Commission ("FERC") in Docket No. ER-21-1579-000 on
17 April 1, 2021 ("FERC Queue Reform Proposal"). In their filing, Duke Energy
18 requested that FERC approve its FERC Queue Reform Proposal by June 1, 2021
19 so that Duke Energy could immediately "reform" their generator interconnection
20 queueing, study process, and cost allocation process by transitioning to a
21 Definitive Interconnection Study Process, and align the FERC-jurisdictional LGIP
22 with queue reform revisions to the state-jurisdictional generator interconnection

1 procedures recently approved by the North Carolina Utilities Commission and the
2 Public Service Commission of South Carolina. To date, FERC has not yet issued
3 a decision as to Duke Energy’s FERC Queue Reform Proposal.¹

4
5 Once FERC approves Duke Energy’s FERC Queue Reform Proposal and the
6 revised LGIP becomes effective, Juno Solar intends to enter the Transitional
7 Cluster in which Juno Solar and other Interconnection Customers will be grouped
8 together for the Transitional Cluster Study Process and will be able to share any
9 required System Upgrade costs. To be clear, Juno Solar will comply with all
10 applicable provisions and requirements of Duke’s FERC Queue Reform Proposal
11 approved by FERC.

12
13 There are substantial financial security requirements for both “ready” and “non-
14 ready” Interconnection Customers to enter the Transitional Cluster and proceed
15 through the Transitional Cluster study process. The Transitional Cluster study
16 process involves a Phase 1 power flow and voltage study, a Phase 2 stability and
17 short circuit study, and a Facilities Study. To demonstrate readiness (or to
18 establish security in lieu of readiness) for Phase 1 of the Transitional Cluster, an
19 Interconnection Customer must provide one of the following:

¹ On May 26, 2021, FERC issued a deficiency letter to Duke Energy regarding its FERC Queue Reform Proposal. The issues raised in the deficiency letter are not germane to matters before the Commission in this proceeding.

1 a. Executed term sheet (or comparable evidence) related to a contract,
2 binding upon the parties to the contract, for sale of the Generating
3 Facility's energy, or the entire constructed Generating Facility, where the
4 term of sale is not less than five (5) years, or

5 b. Reasonable evidence that the Generating Facility is included in a
6 Resource Planning Entity's Resource Plan or Resource Solicitation
7 Process, or

8 c. An executed Provisional Large Generator Interconnection Agreement
9 filed with FERC that is not in suspension with 1) a commitment to
10 construct the facility, 2) a Commercial Operation Date no later than 2024
11 and 3) a security deposit in addition to amount required under Section
12 4.1.2 where the total security deposit represents a reasonable estimation of
13 the potential costs that could be ultimately allocated to the project in the
14 Transitional Cluster Study, or

15 d. Security equal to three million dollars (\$3,000,000). *See* Revised LGIP,
16 § 7.2.1.e.

17
18 There is significant, and increasing, security required for both "ready" and "non-
19 ready" Interconnection Customers progressing through Phase 1 and Phase 2 of the
20 Transitional Cluster study process. Duke Energy informed FERC that these
21 "meaningful" financial readiness requirements are intended to incent only ready
22 or near-ready projects to enter the Transitional Cluster. *See* Duke FERC Queue

1 Reform Proposal, p. 53. The total security required for the Transitional Cluster
2 study process if readiness is provided is as follows: (1) 1 times the Study Deposit
3 to enter Phase 1, and (2) \$3 million to enter Phase 2. The total security for the
4 study process if readiness is not provided is as follows: (1) 1 times the Study
5 Deposit, plus \$3 million to enter Phase 1, and (2) an additional \$2 million (for a
6 total of \$5 million) to enter Phase 2. *See* Revised LGIP, § 7.2.3. Therefore,
7 “ready” projects will have to pay in excess of \$3 million to enter the Phase 2
8 study, and “non-ready” projects will have to pay in excess of \$5 million to be
9 studied in Phase 2.

10
11 If an Interconnection Customer withdraws prior to Phase 2 of the Transitional
12 Cluster study process commencing, no Withdrawal Penalty is imposed and the
13 Interconnection Customer will only be assigned its allocated study costs.
14 However, as noted above, to enter Phase 2 of the Transitional Cluster, an
15 Interconnection Customer is required to either (a) make a significant financial
16 commitment of \$3 million and demonstrate definitive readiness, or (b) provide
17 significant additional security of \$2 million (for a total of \$5 million) if the
18 Interconnection Customer cannot demonstrate definitive readiness prior to Phase
19 2 commencing. If the Interconnection Customer withdraws after entering Phase 2
20 and prior to executing an LGIA, Duke Energy will use the security as payment for
21 (a) the final invoice for study costs and (b) the Withdrawal Penalty, after which
22 any remaining amount of security shall be returned to Interconnection Customer.

1 Therefore, an Interconnection Customer that enters Phase 2 of the Transition
2 Cluster process will be at significant financial risk in the event that they are
3 required to withdraw from the study process. Among the reasons that an
4 Interconnection Customer might need to withdraw from the study process is if the
5 Commission were to deny a CPCN application or revoke an issued CPCN. As
6 demonstrated by prior Commission decisions, the Commission could decide to
7 deny a CPCN where it believes that the Levelized Cost of Transmission
8 (“LCOT”) for any required System Upgrades assigned to the Interconnection
9 Customer (which under Duke Energy’s FERC-approved Open Access
10 Transmission Tariff and LGIA are reimbursed in part by North Carolina retail
11 customers) are too high.²

12
13 This situation creates a “catch 22” for FERC-jurisdictional Interconnection
14 Customers, like Juno Solar, that have to enter the Transitional Cluster (or the
15 eventual DISIS Study process) and, as discussed above, must make substantial
16 financial posting and face multi-million-dollar withdrawal penalties if they exit
17 the study process. If, based on Juno Solar’s LCOT, the Commission were to deny
18 or revoke Juno Solar’s CPCN after it enters Phase 2 of study, Juno Solar would be

² In the case of Friesian Holdings, LLC, the Commission denied a CPCN application on these grounds. *See Order Denying Certificate of Public Convenience and Necessity for Merchant Generating Facility*, issued on June 11, 2020 in Docket No. EMP-105, Sub 0. The Commission has also considered revoking CPCNs on similar grounds. *See Order Requiring Further Testimony*, issued on May 7, 2021 in Docket No. EMP-102, Sub 1; *Order Granting Motion, Reopening Record, Receiving Additional Evidence into the Record, Requiring Public Staff Recommendation, and Providing Notice of Timeline for Issuance of Final Order* issued on August 13, 2020 in Docket No. EMP-107, Sub 0.

1 required to forfeit millions of dollars. But Juno Solar cannot determine the
2 amount of its System Upgrade costs and its LCOT without first completing the
3 study process. The solution to this patently unfair and unreasonable situation,
4 which Pine Gate Renewables has discussed on multiple occasions with Duke
5 Energy and the Public Staff, is for the Commission to issue a Conditional CPCN
6 that will remain in effect so long as the LCOT for any required System Upgrades
7 assigned to Juno Solar is at or below an acceptable defined amount.

8
9 While Duke Energy has not yet studied whether any System Upgrades will be
10 required to interconnect Juno Solar and the other projects in the Transitional
11 Cluster, and if so, the System Upgrade costs that will be assigned to Juno Solar,
12 Juno Solar, in conjunction with a third-party engineering firm, has completed a
13 robust injection analysis of the project to identify any transmission overloads and
14 potential System Upgrade costs. The study modeled an array of planning and
15 dispatch scenarios, and found minimal System Upgrades needed under all but the
16 most conservative planning scenarios (*e.g.*, the full volume of the interconnection
17 queue coming into service). As previously stated, Juno Solar intends to enter the
18 Transitional Cluster and will go through the interconnection study process with
19 DEP to identify any specific System Upgrades needed to interconnect the project.
20 Juno Solar believes that the LCOT for any required System Upgrades assigned to
21 the project will be an amount that will be acceptable to the Commission (*i.e.*, no
22 greater than \$4.00 per MWh.) Therefore, Juno Solar is proposing a CPCN with a

1 condition that the LCOT for any assigned System Upgrades be no greater than a
2 specific defined amount of \$4.00 per MWh. With a Conditional CPCN, Juno
3 Solar will be able to enter the Transitional Cluster and incur the associated
4 financial exposure without an unacceptable level of uncertainty about whether the
5 issued CPCN will remain in effect.

6
7 **Q. WHAT CONDITIONS OF APPROVAL ARE JUNO SOLAR**
8 **REQUESTING BE MADE PART OF THE CPCN APPROVAL?**

9 A. Juno Solar is requesting that the Commission issue a CPCN with the following
10 conditions: (1) the LCOT for any required System Upgrades assigned to Juno
11 Solar will be no greater than \$4.00 per MWh; (2) if at any point in the study
12 process, Juno Solar is informed by Duke Energy that its allocated System
13 Upgrade costs are such that its LCOT will exceed \$4.00/MWh, Juno Solar shall
14 promptly file with the Commission a report documenting the cost of any assigned
15 System Upgrade costs and the LCOT for the System Upgrades; and (3) if the
16 LCOT for any required System Upgrades assigned to Juno Solar is greater than
17 \$4.00 per MWh, the CPCN will automatically terminate and be of no further force
18 and effect unless Juno Solar requests further proceedings to consider whether the
19 CPCN should not be terminated, in which case the CPCN will not be terminated
20 unless so ordered by the Commission.

21
22 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

1 A. Yes.

2