PREFILED DIRECT TESTIMONY OF JIMMY MERRICK ON BEHALF OF TIMBERMILL WIND, LLC

NCUC DOCKET NO. EMP-118, SUB 0

1	INTRODUCTION
2	Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.
3	A. My name is Jimmy Merrick. I am a Development Manager for Apex
4	Clean Energy, Inc. My business address is 310 4 th St. NE, Suite 300, Charlottesville, VA
5	22902.
6	Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL
7	EXPERIENCE.
8	A. I hold a B.S. in Integrated Science and Technology, with a concentration
9	in Energy, from James Madison University. I started working professionally in the
10	renewable energy industry in 2014 and have been working full time as a developer with
11	Apex Clean Energy, Inc. since June of 2018. I have successfully permitted multiple
12	solar projects in the state of Virginia, totaling approximately 310 MW_{AC} of capacity. $\ I$
13	currently manage a development pipeline of 889 $\ensuremath{MW_{AC}}$ of wind, solar, and storage
14	assets across the states of Virginia and North Carolina.
15	Q. PLEASE SUMMARIZE YOUR CURRENT EMPLOYMENT
16	RESPONSIBILITIES.
17	A. As a Development Manager, my responsibilities include managing all
18	stages of development for projects in Apex Clean Energy Holdings, LLC's ("Apex")
19	portfolio from concept to construction, including project origination, land leasing,
20	transmission, public outreach, environmental permitting, and land use permitting. I also
21	support engagement in the power marketing and financing of projects. I share
22	responsibility for the development of the Timbermill Wind, LLC ("Timbermill") wind

energy facility that has a capacity of up to 189 MW_{AC} located in Chowan County, NC (the
"Facility").

HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION? 25 Q. 26 Α. No, but I will also provide prefiled direct testimony to support the 27 Application for Certificate of Environmental Compatibility and Public Convenience and 28 Necessity to construct the approximately 6-mile 230kV transmission line (the "Timbermill 29 Line") necessary to interconnect the Facility to the existing 230kV Winfall-Mackeys 30 transmission line (the "Winfall Line") owned by Virginia Electric and Power Company 31 d/b/a Dominion Energy North Carolina ("DENC") that will be filed by Timbermill in docket 32 EMP-118, Sub 1 (the "CECPCN Application").

33 Q. WERE YOU INVOLVED IN PREPARING TIMBERMILL'S
34 APPLICATION IN THIS DOCKET?

- 35 A. Yes.
- 36 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to support the Application for Certificate of Public Convenience and Necessity to construct a merchant plant (the "CPCN Application") filed by Timbermill. My testimony provides the Commission with information on Apex, Timbermill, and the development history of the Facility, and expands on topics in the CPCN Application, including the regulatory and permitting process for the Facility and the need for the Facility.

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<u>THE APPLICANT</u>

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Q. PLEASE PROVIDE INFORMATION ABOUT TIMBERMILL AND APEX.

A. Timbermill is a limited liability company registered to do business in North
Carolina. Timbermill was organized for the development of the Facility that is the subject
of this CPCN Application. Timbermill is an indirect subsidiary of Apex Clean Energy
Holdings, LLC ("Apex").

49 Apex is an independent renewable energy company headquartered in 50 Charlottesville, Virginia. Apex has one of the nation's largest, most diversified portfolios 51 of renewable energy assets and has the experience, skills, personnel, and proven 52 capabilities to successfully manage development of the Facility. Apex offers 53 comprehensive in-house capabilities, including site origination, financing, construction, 54 and long-term asset management services, and has a successful track record of working 55 with corporations, utilities, and government entities as partners to bring our projects to 56 fruition.

57 Q. PLEASE DESCRIBE APEX'S EXPERIENCE IN THE RENEWABLE 58 ENERGY INDUSTRY, AND SPECIFICALLY WITH DEVELOPING WIND ENERGY 59 FACILITIES.

A. As a leading independent renewable energy company, Apex develops, constructs, and operates clean energy assets across the United States. Apex is actively developing approximately 11 gigawatts ("GW") of wind projects. To date, nearly two dozen Apex-originated wind facilities are now operating around the country, totaling over 5 GW. Furthermore, Apex serves as the operator for 11 commercial wind farms across North America (totaling an operating capacity of over 2 GW).

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PROJECT AREA AND FACILITY DESCRIPTION

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Q. DESCRIBE THE PROPOSED LOCATION FOR THE FACILITY.

A. The Facility includes approximately 6,300 acres of privately-owned land in Chowan County, North Carolina (the "Project Area"), which includes approximately 123 acres in the Transmission Corridor, as defined below, and approximately 5.5 acres where the Interconnection Switching Station is sited. The maps and layouts at CPCN Application Addendum 3 accurately reflect the location of the proposed Facility, including the Timbermill Line and the Interconnection Switching Station. The Project Area is a large rural area used primarily for agricultural and forestry purposes. OFFICIAL COPY

Apex and its affiliates have entered into voluntary site control agreements with individual private landowners for the Project Area. These agreements afford Apex and its affiliates the right to develop and use the property for wind energy purposes, including ingress and egress, the installation of wind measuring equipment and turbines, collection and transmission lines, and other such activities required to develop, construct and operate the Facility.

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Q.

PLEASE DESCRIBE THE BASIC COMPONENTS OF THE FACILITY.

A. The proposed Facility is a wind energy facility that will generate up to 189 MW_{AC} of electrical power. The Facility will consist of up to 45 Vestas V150-4.2MW turbines (or a turbine model with a substantially similar profile), 34.5 kilovolt ("kV") underground electrical collector lines, a 34.5kV to 230kV Collector Substation owned by Timbermill, the Timbermill Line, an Interconnection Switching Station owned by DENC, an Operations and Maintenance ("O&M") building, access roads, and four permanent meteorological towers. Each component is described in detail in the CPCN Application.

The proposed site layout included as CPCN Application Addendum 3 reflects the boundary of the Project Area and a preliminary layout of all major components of the Facility.

92 Q. WILL THE ELECTRICAL COLLECTOR LINES BE INSTALLED
 93 UNDERGROUND?

A. The electrical collector lines connecting the turbines to the Collector
Substation will be installed approximately 42 inches below the ground to avoid potential
impact from the existing land uses.

97Q.HOW WILL THE FACILITY BE INTERCONNECTED TO THE ELECTRIC98GRID?

99 A. The Timbermill Line, an approximately 6-mile, aboveground 230kV 100 transmission line designed, constructed, owned and operated by Timbermill, will run

Prefiled Direct Testimony of Jimmy Merrick Timbermill Wind, LLC

between the Collector Substation and the Interconnection Switching Station. An
approximately 150-foot 230 kV tap line, designed, constructed, owned, and operated by
Dominion Energy, will run from the Interconnection Switching Station to the Point of
Interconnection on the existing Winfall Line.

105Q.WILL THE TIMBERMILL LINE REQUIRE A CERTIFICATE FROM THE106COMMISSION?

107 A. Yes. Timbermill will file a CECPCN Application for the 230kV Timbermill 108 Line in Docket EMP-118, Sub 1.

109

CONSTRUCTION AND OPERATION CONSIDERATIONS

110Q.WHAT IS THE ANTICIPATED CONSTRUCTION TIMEFRAME AND111PROCESS FOR THE FACILITY?

112 A. Upon receipt of all necessary permits, construction for the Facility is 113 planned to begin in November 2022 and reach commercial operations in October 2023.

114

Q. PLEASE DESCRIBE THE ACCESS ROADS FOR THE FACILITY.

115 Α. Where necessary, new access roads will be constructed between existing 116 roadways and Facility components. Existing roads will be improved where necessary. 117 The new and improved access roads will be all-weather, compacted surfaces. During 118 construction, some existing access roads will be widened to accommodate movement of 119 turbine components and the turbine erection crane. Prior to construction, Timbermill or 120 its contractor will enter into road use agreements with the appropriate road authority to 121 identify haul roads, define use and authorized upgrades, and restoration of roads utilized 122 during construction of the Facility.

123

Q. PLEASE DESCRIBE HOW THE FACILITY WILL BE MONITORED.

A. Each turbine is connected to a Supervisory Control and Data Acquisition ("SCADA") system via fiber-optic cable, which allows the turbines to be monitored in real time by the O&M staff. The SCADA system also allows the Facility to be remotely

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monitored, thus increasing Facility oversight, as well as the performance and reliability of
the turbines. Not only will the on-site O&M office have full control of the wind turbines,
but a 24/7 remote operations facility will also have control of the individual turbines.
These two teams coordinate to ensure that the turbines operate safely and efficiently. At
least one member of the local O&M staff will be available on-call 24/7/365.

Q. WHAT STEPS WILL BE TAKEN TO PREPARE FOR A POTENTIAL
EMERGENCY SITUATION AT THE FACILITY?

A. Timbermill's contractor will prepare an Emergency Action Plan ("EAP") in coordination with the county emergency management services and fire services. Timbermill will work with the county to obtain 9-1-1 addressing for the Facility access points and components, as well as install appropriate signage and mapping. Timbermill and its contractors will provide training as requested by Chowan County.

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ANTICIPATED LOCAL, STATE AND FEDERAL PERMITS AND APPROVALS

140Q.DESCRIBE THE PERMITS AND APPROVALS ANTICIPATED TO BE141NECESSARY TO COMMENCE CONSTRUCTION OF THE FACILITY.

142 Α. The anticipated local, state and federal permits required for construction of the Facility are set forth in CPCN Application Exhibit 2, and include but are not limited 143 144 to Federal Aviation Administration ("FAA") Determinations of No Hazard, an Individual 145 Permit from the United States Army Corps of Engineers ("USACE"), a Wind Energy 146 Facility Permit and Erosion and Sedimentation Control approvals from the North 147 Carolina Department of Environmental Quality ("DEQ"), and a Conditional Use Permit 148 ("CUP"), zoning permit, grading permit, building permit, and electrical permit from 149 Chowan County.

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Q. WHICH PERMITS HAVE BEEN OBTAINED TO DATE?

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A. The CUP from Chowan County was obtained in 2016 and amended for the current Facility configuration in 2018. All other permits remain in process at this time.

Q. WHAT COORDINATION WITH GOVERNMENTAL AGENCIES HAS APEX UNDERTAKEN TO DATE?

156 Α. Timbermill has engaged with and continues to coordinate with all local, 157 state and federal agencies that will require various regulatory permits, reviews, and 158 approvals for construction of the Facility. Timbermill has engaged with USACE on 159 potential jurisdictional features and is in the process of requesting a jurisdictional 160 determination from the USACE as well as applying for an individual permit pursuant to 161 Section 404 of the Clean Water Act. Timbermill has engaged with the United States 162 Fish and Wildlife Service, with multiple divisions of the North Carolina DEQ, including but 163 not limited to the Division of Water Resources, the Division of Water Quality, the Division 164 of Coastal Area Management, the North Carolina Wildlife Commission, the Division of 165 Cultural Resources, and the Division of Energy, Mineral and Land Resources.

With respect to the local permits for the Facility, Apex has extensively engaged with Chowan County officials since 2015 with respect to local permits. A CUP was obtained in 2016 and subsequently amended for the current Facility configuration in 2018. Apex continues to engage with Chowan County elected officials and County staff members.

171Q.DESCRIBE APEX'S COORDINATION WITH THE DEPARTMENT OF172DEFENSE AND WITH NORTH CAROLINA MILITARY BASES.

A. Apex has conducted extensive diligence with respect to Timbermill and military facilities since 2013. Beginning in 2013, Apex initiated meetings and has maintained communications with base commanders and military related organizations, including, but not limited to, Naval Support Activity Hampton Roads, NAS Oceana,

177 Andrews AFB, Allies for Cherry Point ("ACP"), and Friends of Seymour Johnston ("FOSJ"). Apex filed a turbine layout and Notice of Proposed Construction ("NPC") for 178 179 Timbermill with the FAA on September 22, 2020. The FAA filing initiated a mission 180 compatibility review with the Department of Defense Siting Clearinghouse ("DoD 181 Clearinghouse"). This process is designed to allow all military stakeholders the 182 opportunity to research and resolve any potential impacts Timbermill may have on 183 After years of collaboration between the Navy, MIT's Lincoln military missions. 184 Laboratory, the DoD Clearinghouse, and Timbermill, U.S. Southern Command and The 185 Joint Staff notified the DoD Clearinghouse in June, 2021 that the Facility would not 186 adversely impact U.S. Southern Command's mission and that no mitigation is 187 necessary. Accordingly, the military services and the DoD Clearinghouse cleared all 45 188 turbines in the FAA's Obstruction Evaluation/Airport Airspace Analysis system.

Q. WILL THE FACILITY BE DESIGNED, CONSTRUCTED AND
 OPERATED IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND
 LOCAL LAWS AND REGULATIONS?

- 192 A. Yes.
- 193

BENEFITS FROM THE FACILITY

194Q.PLEASE DESCRIBE THE ANTICIPATED ECONOMIC BENEFITS195FROM THE FACILITY TO CHOWAN COUNTY.

A. Chowan County will realize an increase in tax revenues as a result of the Facility being in its jurisdiction. The estimated taxable investment by Timbermill is \$246 million, which will result in an estimated \$30 million in tax revenue for Chowan County over a 30-year period (in 2020 dollars). The Facility is expected to be one of the largest taxpayers in Chowan County, providing long-term, stable revenue that will allow Chowan County an opportunity to direct significant revenue into education, health care, public health or critical infrastructure, as the County leadership sees fit. In return, the Facility

will require minimal public services, thereby resulting in a substantial net tax benefit toChowan County.

Timbermill will provide a one-time influx of economic activity in Chowan County estimated to support 150 local jobs, invest \$5.5 million in labor income and \$19.8 million in economic output during construction of the Facility.

After construction, a team of approximately 10 employees, based out of an onsite operations center, will be responsible for the operation and management of the Facility. The O&M staff will receive competitive salaries and benefits, as well as training in the operation and maintenance of utility-scale wind energy facilities. In addition, landowners will receive lease and royalty payments during the life of the Facility.

213 Q. PLEASE DESCRIBE ENVIRONMENTAL BENEFITS FROM THE 214 FACILITY.

215 Α. The Facility will rely solely on the local wind resource to generate power. 216 Wind is a form of energy that can be converted into electricity passively, without the 217 need for fuel such as coal or natural gas. As a result, the Facility requires no off-site mining, drilling or transportation of fuel, can produce electricity without emitting air 218 219 pollution, uses virtually no water, and creates no hazardous or radioactive waste. Wind 220 energy also displaces harmful emissions from fossil fuel power plants and offsets carbon 221 emissions, making it a safer generation option for people, wildlife, and natural 222 ecosystems.

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NEED FOR THE FACILITY

4 Q. PLEASE EXPLAIN THE NEED FOR THE FACILITY.

A. Need for the facility is demonstrated by the North Carolina Renewable Energy and Energy Efficiency Portfolio Standard ("REPS"), Dominion Energy's most recent Integrated Resource Plan, the Virginia Clean Energy Economy Act, Duke

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Energy's most recent Integrated Resource Plan, and demand by corporate and industrialentities.

230 North Carolina's REPS

231 G.S. § 62-133.8 established a Renewable Energy and Energy Efficiency Portfolio 232 Standard under which investor-owned utilities in North Carolina are required to meet up 233 to 12.5% of their energy needs through renewable energy resources or energy efficiency 234 measures by 2021 and thereafter. Under the REPS statute, wind gualifies as a 235 renewable energy resource. Investor-owned utilities, electric cooperatives and municipal 236 electric suppliers demonstrate compliance through the purchase of renewable energy 237 certificates ("RECs"). The Facility will provide approximately 465,000 RECs annually for 238 use by those entities that must comply with the REPS requirements. North Carolina has 239 also shown a commitment to clean energy through its Clean Energy Plan finalized by the 240 North Carolina DEQ in October 2019, which sets a statewide carbon neutrality goal by 241 2050.

242 The development of the REPS was intended to diversify the resources used to 243 reliably meet the energy needs of consumers in the State, provide greater energy 244 security through the use of indigenous energy resources available within the State, 245 encourage private investment in renewable energy and energy efficiency and provide 246 improved air quality and other benefits to energy consumers and citizens of the State. 247 The Facility will help achieve all four of these goals. Allowing this Facility to go forward 248 will enable a new, clean, renewable energy resource with low environmental, health and 249 safety impacts, and significant economic development benefits to meet the growing 250 demand for electricity in the State and region.

251 Dominion Energy's Integrated Resource Plan

252 Need for the Facility is also supported by the 2020 Integrated Resource Plan 253 ("IRP") filed by Dominion Energy. The IRP forecasts its load serving entity peak and

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254 energy requirements are estimated to grow at approximately 1.0% and 1.3% annually 255 throughout the 15-year planning period. Each Alternative Plan in the IRP calls for a 256 significant amount of retirement of coal-fired and inflexible, higher cost oil-and natural 257 gas-fired generation, ranging from 3,030 MW to 3,183 MW over the 15-year planning 258 period and 4,651 MW to 13,978 MW over the 25-year planning period. In an analysis of 259 the annual assumed levelized cost of energy of select new renewable capacity options. 260 "onshore wind resources reflect the most economic option in the near-term given the 261 ability to take advantage of production tax credits." Further, Dominion Energy's IRP also 262 states it anticipates it will soon become a full participant in the Regional Greenhouse 263 Gas Initiative, a regional effort to cap and reduce CO_2 emissions from the power sector.

264 Virginia Clean Energy Economy Act and the PJM Region

The Virginia Clean Economy Act ("VCEA"), which established a mandatory renewable portfolio standard aimed at 100% clean energy from Dominion Energy's generation fleet by 2045, requires the development of significant energy efficiency, solar, wind, and energy storage resources, and requires the retirement of all generation units that emit carbon dioxide by 2045 (unless such retirement would threaten grid reliability and security). Notably, the VCEA requires Dominion to seek all necessary approvals for at least 16,100 MW of new solar or onshore wind resources by December 31, 2035.

272 In addition to needs specific to Dominion Energy, significant need exists in the 273 PJM Interconnection ("PJM") region to which the Facility will be interconnected. 274 Summer peak load in PJM is expected to grow by 0.6% per year over the next 10 years, 275 and by 0.5% over the next 15 years. For the Dominion Virginia Power zone, summer 276 peak load growth is expected to grow by 1.2% per year over the next 10 years, and 277 1.0% per year over the next 15 years. The anticipated 10-year summer peak load 278 growth in the Dominion Virginia Power zone represents 4.6% growth over the January 279 2019 load forecast report.

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280 Winter peak load growth in PJM is projected to average 0.4% per year over the next 10-year period, and 0.3% over the next 15 years. Winter peak load growth for the 281 282 Dominion Virginia Power zone is expected to grow by 1.4% per year over the next 10 283 years, and 1.2% per year over the next 15 years. The anticipated 10-year winter peak 284 load growth in the Dominion Virginia Power zone represents 15.7% growth over the 285 January 2019 load forecast report. The PJM service area in Dominion Energy territory. 286 including North Carolina, is expected to average between 1.2% and 1.4% per year over 287 the next 10 years versus the PJM RTO load growth projections to average 0.6% over the 288 next 10 years.

Thus, the PJM projected load increases, announced generation retirements, and renewable portfolio standards provide a need for new resources in the PJM footprint. The Facility, located in the PJM footprint, will help fill this need.

292 Duke Energy's Integrated Resource Plan

293 There is also a showing of need for the Facility in the Duke Energy Progress, 294 LLC ("DEP") and Duke Energy Carolinas, LLC ("DEC") (together, "Duke") IRPs. Duke 295 has a goal of net-zero carbon emissions by 2050 that will "require a diverse mix of 296 renewable, and other zero-emitting, load following resources," including onshore wind. 297 Duke included multiple input assumptions regarding renewable energy in its 2020 IRPs, 298 including "up to 150 MW of onshore Carolinas wind generation, assumed to be located 299 in the central Carolinas, [which] could be selected by the capacity expansion model 300 annually to provide a diverse source of economic energy and capacity." Duke also 301 found that adding onshore wind would benefit winter peak demand, which drives the 302 resource planning process.

The Duke IRPs also include a discussion of Duke's corporate commitment to reduce CO₂ emissions from power generation by at least 50% from 2005 levels by 2030, and achieve net-zero emissions by 2050.

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306 Corporate Demand for Clean Energy

307 According to Renewable Energy World, 2019 was "a record year for renewable 308 energy procurement with corporate buyers purchasing over 7 GW of renewable energy 309 capacity" in the United States.¹ Corporate buyers included major corporations such as 310 AT&T, Google, Facebook, Microsoft, Walmart, Starbucks, Amazon, and many more.² 311 According to BloombergNEF, in 2020, corporations purchased even more (23.7 GW) 312 than the record-breaking amounts in 2019 (20.1 GW) "despite a year devastated by the 313 pandemic, a global recession and uncertainty about U.S. energy policy ahead of the presidential election."³ The report found that "to not only maintain, but grow, the clean 314 315 energy procurement market under these conditions is a testament to how high sustainability is on many corporations' agendas."⁴ Wind projects in PJM's territory are 316 317 well positioned to meet the robust demand of corporations.

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MANAGERIAL AND TECHNICAL CAPABILITY OF APEX

319 Q. PLEASE DESCRIBE APEX'S TECHNICAL AND MANAGERIAL

320 CAPABILITY TO CONSTRUCT AND OPERATE A WIND POWER FACILITY.

A. As an Apex subsidiary, Timbermill will have full access to the managerial and technical capabilities of Apex to construct and operate the Facility. Apex brings the experience of having successfully developed 24 wind and solar facilities with a total operating capacity of more than 5 GW and serving as the operator for 11 commercial wind farms across North America (totaling an operating capacity of over 2 GW).

 $^{^{1}\} https://www.renewableenergyworld.com/solar/reba-corporate-renewable-energy-buyers-set-new-record-in-2019/$

 $^{^{2}}$ Id.

³ https://about.bnef.com/blog/corporate-clean-energy-buying-grew-18-in-2020-despite-mountain-of-adversity/#:~:text=Partnership-

[,]Corporate%20Clean%20Energy%20Buying%20Grew%2018,2020%2C%20Despite%20Mountain%20of%20Adversity&text=New%20York%20and%20London%2C%20January,published%20by%20BloombergN EF%20(BNEF).

⁴ Id.

326 Apex has one of the most experienced renewable energy development teams in 327 the industry with more than 250 professionals with expertise in wind and solar resource 328 assessment, GIS, land management, permitting, transmission and interconnection, 329 turbine procurement, project finance, engineering, and construction management. 330 Included as Merrick CPCN Direct Exhibit 1 is information on Apex's executive team. In 331 construction management specifically, Apex employs responsible and experienced 332 onsite construction managers to ensure that projects are built in compliance with all 333 applicable local, state and federal laws and regulations, approved construction plans, 334 and in a way that respects community and landowner concerns and results in a high-335 quality facility that will operate smoothly for years to come.

336 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

337 A. Yes.

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339

Merrick Direct Exhibit 1

Apex Executive Team

Mark Goodwin, President and Chief Executive Officer – previously with Horizon Wind Energy, EDPR, and Vestas; former naval officer and helicopter pilot, BS in aerospace engineering from the U.S. Naval Academy, MBA from the Kellogg Graduate School of Management.

344 Sandy Reisky, Founder and Chairman – Founder and president of Greenlight
345 Energy (wind energy), Axio Power (utility-scale solar), Columbia Power (wave energy
346 technology); and Greenlight Biofuels (waste-to-energy). BS from the McIntire School of
347 Commerce at UVA.

Jim Trousdale, Chief Financial Officer – 20 years of international and domestic
finance experience, including in renewable energy. Previously with Fortis, CIT,
Citigroup, and Greenlight Energy. BA and an MA/SFS from Georgetown University,
MBA from Columbia.

Ken Young, Chief Operating Officer – Previously with Vestas Wind Systems,
 former army infantry officer. BS in political science and systems engineering from West
 Point, MBA from the University of Notre Dame.