CAPRICORN RIDGE 4 WIND FARM PROJECT

Document Prepared By NextEra Energy Marketing, LLC

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The Capricorn Ridge 4 Wind Farm Project ("The Project") is the second phase of the Capricorn Ridge Wind Farm and became operational on May 20, 2008. The Project consists of 75 GE 1.5 MW wind turbines, with a capacity of 112.5 MW, and is interconnected to a substation owned by the Lower Colorado River Authority ("LCRA"). Meters at that substation provide the source of revenue-quality energy production data. Energy data is provided to the Project Proponent where it is remotely monitored and stored in the Project Proponent's data storage system, and to the Electricity Reliability Council of Texas ("ERCOT") where Renewable Energy Credits ("REC") are generated and tracked on the ERCOT registry. Station service load is provided by Concho Valley Electric Coop and metered separately.

During the monitoring period of this Monitoring Report (January 1, 2017 to December 31, 2017) the Project operated continuously as expected with no deviations or other notable events to report.

The total GHG emission reductions generated in the monitoring period of this Monitoring Report which are available for voluntary sales are 117,283 tCO_2.

1.2 Sectoral Scope and Project Type

The Project falls under UNFCCC CDM sectoral scope 01, "Energy Industries (renewable- /non-renewable resources)".

The Project is not a grouped project.

1.3 Project Proponent

Organization name	NextEra Energy Marketing, LLC
Contact person	Lin Ge
Title	Senior Analyst, Environmental Trading
Address	700 Universe Boulevard Juno Beach, FL 33408
Telephone	(561) 304-5432
Email	Lin.Ge@nexteraenergy.com

1.4 Other Entities Involved in the Project

Organization name	N/A
Role in the project	N/A
Contact person	N/A
Title	N/A
Address	N/A

Telephone	N/A
Email	N/A

1.5 Project Start Date

January 01, 2010

1.6 Project Crediting Period

The Project Crediting Period is 10 years, staring on January 01, 2010 and ending on December 31, 2019.

1.7 Project Location

The Project Location is as follows (in NAD83 coordinates):

Project	Latitude	Longitude
Capricorn Ridge 4 Wind Farm	31.900878° N	-100.817413° W

1.8 Title and Reference of Methodology

The Project uses the following methodology and tools:

- UNFCCC CDM consolidated methodology ACM0002, "Consolidated methodology for grid connected electricity generation from renewable sources," Version 9.0.
- UNFCCC CDM methodological tool Tool07, "Tool to calculate the emission factor for an electricity system," Version 01.1.
- UNFCCC CDM methodological tool Tool03, "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion," Version 02.

1.9 Other Programs

The Project does not participate in any other GHG emissions trading program and has not registered credits under any other GHG emissions trading program.

The Project is a qualified renewable generator in ERCOT's REC Program. A specific number of RECs have been generated, registered, and claimed as RECs in 2015 (via transfer to other parties and/or retirement on behalf of other parties); these RECs are excluded from this Monitoring Report and are identified in documents provided to the VVB as attachments.[1]

To prevent double counting, any and all Project VCUs pertaining to this Monitoring Report and issued under VCS will result in the immediate voluntary retirement of the corresponding quantity

[1] See Attachment 9 "Cap 4 REC retirement screenshot excluded REC" for detail

of Project RECs, where the quantity of RECs is determined by the quantity of the VCUs (in tCO_2) divided by the emission factor $EF_{grid,CM}$ (in tCO_2/MWh). The voluntary retirement of these RECs will render the RECs unusable for use in meeting an RPS requirement.[2] To avoid any doubt of possible double counting of the RECs and/or VCUs in the voluntary market, the following statement will be included in the ERCOT retirement memo field: "Retirement for affecting the conversion of RECs to issued VCUs under VCS Project 468, 4/1/2015-12/31/2015." Evidence of this voluntary REC retirement --including the corresponding vintage, facility ID, serial numbers, quantity of RECs, its retirement status, and specific memo language as noted above-- shall be provided to the VCS registry under which the VCS issuance occurs in the form of a copy of the ERCOT REC Retirement Summary Detail report.[3]

In accordance with VCS Standard v3.5, Section 3.11.3:

- The relevant REC program to which the RECs will be registered is the Electricity Reliability Council of Texas (ERCOT) State of Texas Renewable Energy Credit Trading Program. The address is:
  Electric Reliability Council of Texas, Inc.
  7620 Metro Center Drive
  Austin, Texas 78744-1654
  Telephone: (512) 225-7000

- The Project is listed in the ERCOT REC tracking system as "Capricorn Ridge Wind II, LLC", Facility ID 00114.

- The monitoring period for which the RECs will be registered is 1/1/2017-12/31/2017.

- Final volumes and serial numbers will be made available to the VCS registry upon issuance of the corresponding VCUs.

1.10 Sustainable Development

The Production Tax Credit (or "PTC"), originally enacted as part of the Energy Policy Act of 1992, is the major U.S. policy in place to promote wind energy development. Most utility scale wind energy projects in the U.S. developed over the last 25 years, including the Project, relied on the tax benefit of the PTC to help make these above-market renewable energy projects financially viable. Because the PTC is a production-based incentive (based on annual kWh of electricity production), any wind project making use of the PTC must incorporate revenue-quality metering as part of their federal tax reporting. This monitoring and reporting requirement is consistent with the Project's VCS monitoring and reporting requirements; therefore, no additional provisions are necessary.

[2] See Attachment 1 "ERCOT Nodal Protocols" for detail
[3] See Attachment 8 "Cap 4 REC retirement screenshot" for detail

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The Project operated as expected during the monitoring period of this Monitoring Report. There were no events that impacted the GHG emission reductions or monitoring. As discussed in Section 1.9 above, some of the Project's RECs have been issued, thereby precluding those MWh to be converted to GHG emission reductions. These MWh have not been included in the Project's total electricity generation, thereby precluding any claims of GHG reductions associated with those MWh under this Monitoring Report.

2.2 Deviations

2.2.1 Methodology Deviations

There are no methodology deviations for the monitoring period of this Monitoring Report.

2.2.2 Project Description Deviations

There are no Project Description deviations for the monitoring period of this Monitoring Report.

2.3 Grouped Project

The Project is not a grouped project.

2.4 Safeguards

2.4.1 No Net Harm

There are no identified environmental or socio-economic impacts of the project. As noted in the May 1, 2018 letter from NextEra Energy Resources, the project operates under the authority of ERCOT and the Public Utility Commission of Texas (PUCT). For calendar year 2017 the project met the ERCOT and PUCT reporting protocols.

2.4.2 Local Stakeholder Consultation

As noted above the project operates under the authority of the PUCT. Stakeholders have a right to file a complaint with the PUCT. Any complaints deemed to be material would be coordinated between the project and the PUCT. Since the May 1, 2018 letter from NextEra Energy Resources indicated no notable operations events, it can be concluded that there were no material complaints relating to the project operations.

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data / Parameter	LE_{2017}
Data unit	tCO2e
Description	Leakage emissions
Source of data	In accordance with methodology ACM0002, no leakage

	emissions are considered.
Value applied:	0
Justification of choice of data or description of measurement methods and procedures applied	In accordance with methodology ACM0002, no leakage emissions are considered.
Purpose of the data	Calculation of leakage emissions
Comments	N/A

3.2 Data and Parameters Monitored

Data / Parameter	$EG_{facility,2017}$
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project to the grid in January 1, 2017 – December 31,2017
Source of data	Revenue-quality electricity meters located at the LCRA substation and confirmed by ERCOT. For data not yet confirmed by ERCOT, the latest MV90 data shall be used. "Cap 4 2017 REC Creation Screenshot (Redacted).pdf" and "MV90 CAP RIDGE 4 HOURLY DATA 2017.xlsx" files are provided as attachment.
Description of measurement methods and procedures to be applied	Data is measured continuously with utility grade, revenue-quality kWh electricity meters operated by LCRA. Meters are tested and calibrated to ERCOT EPS and NIST standards.
Frequency of monitoring/recording	Data is reported in real time to the Project Proponent and to ERCOT via separate telemetry systems approximately every two seconds. The data is ultimately stored in 15-minute intervals consistent with both the Project Proponent's market data software and ERCOT's data requirements. An MV90 report is generated for billing purposes, which is consolidated into hourly data.
Value monitored	214,059
Monitoring equipment	A primary revenue meter (PT-0702A256-01) and secondary revenue meter (PT-0702A255-01) are used. The Project Proponent's nMarket data package stores the data remotely at their Florida headquarters.
QA/QC procedures to be applied	The primary and secondary revenue meters located at the LCRA substation were inspected and certified on 28 July 2014. The meters were inspected using the ERCOT EPA meter certification procedure. "EPS meter test report Cap4 2014.pdf" file is provided as attachment.
Purpose of the data	Calculation of Baseline Emissions
Calculation method	N/A

Comments	This value excludes all RECs previously generated and claimed by others. "Cap 4 2017 REC Retirement Screenshot excluded REC (Redacted).pdf" file is provided as attachment.

Data / Parameter	$EF_{grid,CM,2016}$
Data unit	tCO_2/MWh
Description	Combined margin CO_2 emission factor in year 2016
Source of data	Most recent published data for the electricity grid
Description of measurement methods and procedures to be applied	Most recent U.S. EPA eGRID data is year 2016 to represent the monitoring period of January 1, 2017 to December 31, 2017. The applicable electricity grid is the ERCOT interconnection region. Components of the calculation for $EF_{grid,CM}$ (operating margin emission factor, $EF_{grid,OM}$, and build margin emission factor, $EF_{grid,BM}$) are determined in accordance with the UNFCCC CDM methodological tool Tool07, "Tool to calculate the emission factor for an electricity system," Version 01.1.
Frequency of monitoring/recording	eGRID data is published periodically and publicly available on the EPA website.
Value monitored:	0.552
Monitoring equipment	Data contained within the EIA databases (from which the U.S. EPA eGRID data is derived) are reported from individual utilities and other entities that are required to report their plant operating data. Data applied to calculate this parameter includes annual energy production, fuel consumption, fuel type, and fuel type CO_2 emission factor. This reported data is derived from revenue quality electricity meters, official fuel records, and other calculations or DOE factors applied in accordance with DOE reporting requirements.
QA/QC procedures to be applied	Data contained within the EIA databases are reported from individual utilities and other entities that are required to report their plant operating data. The DOE, as a third-party entity, implements a rigorous review the data each year for quality assurance and accuracy. Please see the EIA Quality Guidelines for a complete description of their quality assurance and quality control program: http://www.eia.gov/about/information_quality_guidelines.cfm
Purpose of the data	Calculation of Baseline Emissions
Calculation method	Calculations of this parameter are performed in accordance with the UNFCCC CDM methodological tool Tool07, "Tool to calculate the emission factor for an electricity system," Version 01.1, and calculation details "Emission Factor Calculation.doc" is provided as attachment
Comments	N/A

Data / Parameter	$EC_{PJ,2017}$
Data unit	MWh
Description	Quantity of electricity consumed by the project from the grid in January 1, 2017 – December 31,2017
Source of data	Monthly utility invoices, where the data is measured with revenue-quality electricity meters located at various electricity consuming facilities of the Project. "CVEC 2017.pdf", "CVEC 2016.pdf" and "CVEC Invoice Summary 2017.xlsx" files are provided as attachments.
Description of measurement methods and procedures to be applied	Data is measured continuously with utility grade, revenue-quality kWh electricity meters operated by Concho Valley Electric Cooperative.
Frequency of monitoring/recording	Data is measured continuously and reported to the Project Proponent via monthly invoices.
Value monitored:	1,793
Monitoring equipment	Multiple revenue-quality meters located at the Project site.
QA/QC procedures to be applied	Meters employed are standard revenue-quality meters standard for metering commercial or industrial customers
Purpose of the data	Calculation of Project Emissions
Calculation method	N/A
Comments	N/A

Data / Parameter	$EF_{EL,2016}$
Data unit	tCO_2/MWh
Description	CO_2 emission factor relating to retail electricity supplied to the project in year 2016
Source of data	Most recent published data for the electricity grid
Description of measurement methods and procedures to be applied	Most recent U.S. EPA eGRID data is used (year 2016) to represent the monitoring period of January 1, 2017 – December 31, 2017. The applicable electricity grid is the ERCOT interconnection region.
Frequency of monitoring/recording	eGRID data is published periodically and publicly available on the EPA website.
Value monitored:	0.455
Monitoring equipment	Data contained within the EIA databases (from which the U.S. EPA eGRID data is derived) are reported from individual utilities and other entities that are required to report their plant operating data. Data applied to calculate this parameter includes annual energy production, fuel consumption, fuel type, and fuel type CO_2 emission factor. This reported data is derived from revenue quality electricity meters, official fuel records, and other calculations or DOE factors applied in

	accordance with DOE reporting requirements.
QA/QC procedures to be applied	Data contained within the EIA databases are reported from individual utilities and other entities that are required to report their plant operating data. The DOE, as a third-party entity, implements a rigorous review the data each year for quality assurance and accuracy. Please see the EIA Quality Guidelines for a complete description of their quality assurance and quality control program: http://www.eia.gov/about/information_quality_guidelines.cfm
Purpose of the data	Calculation of Project Emissions
Calculation method	"Emission Reduction Calculation.xlsx" file is provided as attachment
Comments	N/A

3.3 Monitoring Plan

During this monitoring period, the process and schedule have been followed for monitoring the data and parameters in Section 3.2 above.

- The Project Proponent received continuous electric data via telemetry from the LCRA revenue-quality meters (both primary and backup). The meters are industry standard, revenue-grade electronic meters capable of continuous monitoring of kWh to industry recognized standards, and capable of delivering such data via telemetry. The meters are physically located at the Project site at the collection point where the energy is recognized as being delivered to the electricity grid.

- Data was captured and stored in 15-minute intervals with the Project Proponent's market data software package managed at its corporate headquarters by its Energy Marketing department. The electric data was also delivered from the LCRA meters to ERCOT and in the same 15-minute interval basis. ERCOT ultimately reports the data in calendar quarters.

- The Project Proponent's data was consolidated to one-hourly increments.

- The Project Proponent is capable of managing the monitoring, storage, and reporting of data. NextEra Energy Resources is one of the largest owner/producers of renewable energy with over 20,000 MW of electrical capacity. NextEra Energy Marketing, LLC is leading energy marketing in North America and provides daily management of its company's electricity and fuel resources.

- The entire reporting year's data is available (8,760 hourly data points, with no missing intervals). Data provided by the Project Proponent is cross checked against final ERCOT reported data. ERCOT, for purposes of this Monitoring Report, functions as an independent third-party review of the Project's data. The difference between data supplied by the Project Proponent and ERCOT reported data was less than 1%. The LCRA primary and backup meters were demonstrated to have less than ±0.2% error. As

such, the Methodology's requirements for monitoring frequency have been met, target precision and confidence levels have been met, and QA/QC procedures were appropriate for this project type.

- In accordance with Section 3.17.1 of the VCS Standard, Version 3.5, all documents and records are kept for at least two years after the end of the project crediting period.

- The Project incorporates a backup meter to its primary electricity revenue meter as a cross check in the event of any observed non-conformities. Furthermore, the Project Proponent can make use of each wind turbine's SCADA system to cross check against the primary meter. In 2015 there were no non-conformities of the Project's electrical generation data; therefore, a comparison is not provided in this Monitoring Report.

- The Project Proponent provided Project electrical consumption data in the form of monthly invoices from its retail energy service provider, Concho Valley Electric Cooperative. Concho Valley Electric Cooperative, for purposes of this Monitoring Report, functions as an independent third-party review of the Project's electrical consumption data.

- Other third-party data identified in Section 3.2 above and relied upon to determine total Emission Reductions are sourced from independent governmental sources. In particular, the U.S. DOE EIA data (from which the U.S. EPA eGRID data is derived) is widely recognized as the most accurate source of U.S. electricity data available. The U.S. DOE EIA implements a quality assurance program which is publicly available on their website.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

In accordance with Equations (8) and (9) of the Methodology, Baseline Emissions, BE_{2015}, is calculated as follows:

$$BE_{2017} = EG_{facility,2017} \times EF_{grid,CM,2016}$$

where:

BE_{2017} =	Baseline emissions from January 1, 2017 to December 31, 2017 (tCO_2)
$EG_{facility,2017}$ =	Quantity of net electricity generation supplied by the Project to the grid from January 1, 2017 to December 31, 2017 (MWh)
$EF_{grid,CM,2016}$ =	Combined margin CO_2 emission factor for grid connected power generation in year 2016 (which is the most recent year of available data to apply to 2017) (tCO_2/MWh)

$EG_{facility,2017}$ is the Project's net MWh (after previously issued REC sales are excluded). This value is 214,059 MWh.

$EF_{grid,CM,2016}$ is calculated at 0.552 in accordance with the UNFCCC CDM methodological tool Tool07, "Tool to calculate the emission factor for an electricity system," Version 01.1, and detailed in Attachment "Emission Factor Calculation.doc".

The resulting calculation of Baseline Emissions, BE_{2017}, is:

$$BE_{2017} = 214{,}059 \text{ MWh} \times 0.552 \text{ tCO2/MWh}$$
$$= \mathbf{118{,}099\ tCO_2}$$

4.2 Project Emissions

In accordance with Equation (1) of the Methodology, Project Emissions, PE_{2015}, is calculated as follows (excluding parameters associated with geothermal and hydro power plants):

$$PE_{2017} = PE_{FF,2017}$$

where:

PE_{2017} =	Project emissions from January 1, 2017 to December 31, 2017 (tCO_2)
$PE_{FF,2017}$ =	Project emissions from fossil fuel consumption from January 1, 2017 to December 31, 2017 (tCO_2)

As related to the Project, Project Emissions are solely due to grid electricity supplying power to the project. The Methodology references UNFCCC CDM methodological tool, "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion," Version 02; this tool is intended for direct combustion of fossil fuels. Referring to Equation (1) of this tool, and recognizing the fuel type *i* is electric consumption of the project (FC = EC_{PJ}) and the fuel CO_2 coefficient is the electric grid CO_2 emission factor ($COEF=EF_{EL}$):

$$PE_{EC2017} = \sum_{j} EC_{PJ,j,2017} \times EF_{EL,j,2016}$$

where:

$PE_{EC,2017}$ =	Project emissions from electricity consumption in January 1, 2017 to December 31, 2017 (tCO_2)
$EC_{PJ,j,2017}$ =	Quantity of electricity consumed by the project electricity consumption source *j* in January 1, 2017 to December 31, 2017 (MWh)
$EF_{EL,j,2016}$ =	Emission factor for electricity generation for source j in year 2016 (the most current year of data available for 2017) (tCO_2/MWh)
j =	Sources of electricity consumption

$EC_{PJ,j,2017}$ is the MWh of electricity consumed by the project from January 1, 2017 to December 31, 2017. Adjustments are made to account for some electricity consumption sources being shared with other phases of the wind farm (see below), and to exclude the amount of energy associated with previously issued RECs. This calculation is provided to the VVB under separate cover. The final calculated value of $EC_{PJ,j,2017}$ is 1,793 MWh.

$EF_{EL,j,2014}$ is determined from the U.S. EPA eGRID2014 database which reports both power plant MWh and power plant fuel types.[3] All power plants in ERCOT were used and totals of MWh and CO_2 emissions were weight-averaged to determine this parameter. All electricity consumption sources are served by the same set of plants in the same ERCOT region. A summary is provided in the table below:

Table 1

Year	Tonnes CO_2 from all fossil fuel power units in ERCOT (tCO_2)	Generation from all power units in ERCOT (MWh)	$EF_{EL,2016}$ (tCO_2/MWh)[4]
2016	177,340,462	389,939,062	0.455

j denotes the source of electricity consumption. For the Project there are several sources of electrical consumption, some of which are directly used by Capricorn Ridge 4 and others are shared across all phases of the project. Regarding the latter, the portion attributed to Capricorn Ridge 4 is determined by applying a capacity share factor to the total kWh metered, where the capacity share is (Capricorn Ridge 4 MW capacity)/(Total Capricorn Ridge wind farm MW capacity). All electricity consumption sources are served by the same local energy service provider, Concho Valley Electric Cooperative.

The resulting calculation of Project Emissions, $PE_{EC,2017}$, is:

$$PE_{EC,2017} = 1{,}793\ MWh \times 0.515\ tCO_2/MWh$$
$$= 815\ tCO_2$$

4.3 Leakage

In accordance with Section 5.6 of the Methodology, there are no leakage emissions.

4.4 Net GHG Emission Reductions and Removals

Total Emissions Reductions are calculated in accordance with the Methodology, Equation (13):

$$ER_{2017} = BE_{2017} - PE_{2017}$$

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
2017	118,099	815	0	117,283

[3] Source: https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid

[4] Tonnes CO_2 from all power units in ERCOT/Generation from all power units in ERCOT

APPENDIX A: ATTACHMENTS

	Document Description	Source	Filename
1	ERCOT Nodal Protocols; Section 14: State of Texas Renewable Energy Credit Trading Program	http://www.ercot.com/content/mktrules/nprotocols/current/14-070114_Nodal.doc	ERCOT Nodal Protocols Section 14.doc
2	Calculation of emission factor and emission reduction (eGRID data)	NextEra Energy Marketing, LLC	Emission Reduction Calculation.xlsx
3	Emission factor calculation methodologies description	NextEra Energy Marketing, LLC	Emission Factor Calculation.doc
4	Project energy consumption; invoices summary	NextEra Energy Marketing, LLC	CVEC Invoice Summary 2017.xlsx
5	Project hourly MWh from MV90 data; summary	NextEra Energy Marketing, LLC	MV90 CAP RIDGE 4 HOURLY DATA 2017.xlsx
6	ERCOT Metering Design Proposal for Project	NextEra Energy Marketing, LLC	Cap Ridge 4 meter design specs.pdf
7	ERCOT report showing REC creations	NextEra Energy Marketing, LLC	Cap 4 2017 REC Creation Screenshot (Redacted).pdf
8	ERCOT report showing REC retirements	NextEra Energy Marketing, LLC	Cap 4 2017 REC Retirement Screenshot (Redacted).pdf
9	ERCOT report showing REC retirements (excluded)	NextEra Energy Marketing, LLC	Cap 4 2017 REC Retirement Screenshot excluded REC (Redacted).pdf
10	Meter calibration test; primary meter and backup meter	NextEra Energy Marketing, LLC	EPS meter test report CAP 4 2016.pdf
11	Project energy consumption; invoices	NextEra Energy Marketing, LLC	CVEC 2017.pdf
12	Site map	NextEra Energy Marketing, LLC	Site Map WCR 4.pdf
13	EIA Information Quality Guidelines	U.S. DOE EIA website; http://www.eia.gov/about/information_quality_guidelines.cfm	About EIA - Policies - U.S. Energy Information Administration (EIA).htm
14	ERCOT generation data	U.S. EPA eGRID data: https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid	eGRID2016_data.xlsx eGRID2012_Data.xlsx Also available to download from website
15	ERCOT report showing REC Ownership	NextEra Energy Marketing, LLC	Cap 4 2017 REC Ownership (Redacted).pdf