



**Verified Carbon
Standard**

VERIFICATION REPORT FOR THE UNIVERSITY OF ILLINOIS URBANA- CHAMPAIGN CAMPUS WIDE CLEAN ENERGY & ENERGY EFFICIENCY PROJECT



Document Prepared By Scott Eaton

Project Title	University of Illinois Urbana-Champaign Campus Wide Clean Energy & Energy Efficiency
Version	2-2
Report ID	2-2

Report Title	Verification Report for the University of Illinois Urbana-Champaign Campus Wide Clean Energy & Energy Efficiency Project
Client	Second Nature
Pages	31 pages

Date of Issue	13 May 2022
Prepared By	SCS Global Services (SCS)
Contact	2000 Powell Street, Suite 600, Emeryville, CA 94608, USA http://www.scsglobalservices.com Email: cpollet-young@scsglobalservices.com Telephone: +1 (510) 452-8000
Approved By	Christie Pollet-Young
Work Carried Out By	Lead Auditor: Scott Eaton Auditors: Letty B. Brown, Carolin Stark, Heather Rosa Technical Reviewer: Christie Pollet-Young

Summary:

This report describes the verification of the University of Illinois Urbana-Champaign Campus Wide Clean Energy & Energy Efficiency project (“the project”), an Energy Efficiency project located in Illinois USA, that was conducted by SCS. The purpose of the verification engagement was to conduct, in accordance with the VCS Program rules, an ex-post independent assessment of the GHG emission reductions and removals that have occurred as a result of the project during the monitoring period from 01 January 2018 to 30 June 2019 (“the verification period”). The verification engagement was carried out through a combination of document review, interviews with relevant personnel and on-site inspections. As part of the verification engagement five findings were raised: zero Non-Conformity Reports, five New Information Requests and zero Observations. These findings are described in Appendix A of this report. The project complies with the verification criteria, and SCS holds no restrictions or uncertainties with respect to the compliance of the project with the verification criteria.

CONTENTS

Contents	3
1 Introduction	5
1.1 Objective	5
1.2 Scope and Criteria	5
1.2.1 Scope	5
1.2.2 Criteria	5
1.3 Level of Assurance	5
1.4 Summary Description of the Project	6
2 Verification Process	7
2.1 Method and Criteria	8
2.2 Document Review	10
2.3 Interviews	10
2.3.1 Interviews of Project Personnel	10
2.4 Site Inspections	11
Resolution of Findings	11
2.4.1 Forward Action Requests	12
2.5 Eligibility for Validation Activities	12
3 Validation Findings	12
3.1 Participation under Other GHG Programs	12
3.2 Methodology Deviations	12
3.3 Project Description Deviations	12
3.4 Grouped Project	13
4 Verification Findings	13
4.1 Project Implementation Status	13
4.1.1 Implementation Status of the Project Activity(s)	13
4.1.2 Previously Validated Methodology Deviations	17
4.1.3 Previously Validated Project Design Deviations	17

4.1.4	Previously Validated Minor Changes to the Project Description	17
4.1.5	Overall Conclusion	17
4.2	Safeguards	17
4.2.1	No Net Harm	17
4.2.2	Local Stakeholder Consultation	17
4.3	Accuracy of GHG Emission Reduction and Removal Calculations	18
4.3.1	Data and Parameters Available at Validation	19
4.3.2	Data and Parameters Monitored	20
4.4	Quality of Evidence to Determine GHG Emission Reductions and Removals	22
4.4.1	Nature of Data and Information Supporting GHG Quantification	24
4.4.2	Quality and Quantity of Evidence Used to Determine GHG Quantification	24
4.5	Non-Permanence Risk Analysis	26
5	Verification conclusion	26
	Appendix A: List of Findings	28
	Appendix B: Stakeholder Input and Project Proponent Response	31

1 INTRODUCTION

1.1 Objective

In accordance with Section 4.1 of the VCS Standard (see the below Section 1.2 for full reference), SCS carried out an ex-post independent assessment of the GHG emission reductions and removals that have occurred as a result of the project during the verification period, conducted in accordance with the VCS Program rules. In accordance with Section 2.1.2 of the VCS Validation & Verification Manual, V3.2, the objectives of the verification engagement were to evaluate the monitoring report and assess

- The extent to which methods and procedures, including monitoring procedures, have been implemented in accordance with the validated project description (this included assessing conformance with the monitoring plan).
- The extent to which GHG emission reductions and removals reported in the monitoring report are materially accurate.

1.2 Scope and Criteria

1.2.1 Scope

As defined in accordance with Section 4.3.4 of ISO 14064-3:2006, the scope included

- The project and its activities.
- The carbon pools and/or greenhouse gases included in the project boundary.
- The verification period.

1.2.2 Criteria

In accordance with Section 4.1.8(2) of the VCS Standard (see below for full reference), the criteria for verification were the VCS Version 4, including the following documents:

- VCS Program Guide, V4.0
- VCS Standard, V4.0

1.3 Level of Assurance

In accordance with Section 4.1.8(1) of the VCS Standard, the level of assurance was reasonable.

1.4 Summary Description of the Project

The project is located in Illinois, USA, and is a campus-wide clean energy and efficiency project developed by the University of Illinois Urbana-Champaign (UIUC). This project has been carried out following the approved methodology VM0025 and module VMD0038, which provide a set of performance requirements for campuses to achieve Scope 1 stationary combustion reductions, by Carnegies Class, which, averaged over an Additionality Eligibility Period, exceed specified performance standards. It should be noted that the project does not claim emission reductions from decreases in Scope 2 electricity consumption.

No single technology is relied upon to meet the performance standard requirements for this methodology, but rather a series of energy efficiency/clean energy measures have been adopted campus wide. UIUC's energy efficiency campus activities include the following:

Behavior change campaigns	☒ Yes	☐ No
Cogeneration and fuel switch	☒ Yes	☐ No
Lighting Retrofits	☒ Yes	☐ No
On-Site Renewables	☒ Yes	☐ No
Boiler retrofits, central heating and cooling upgrades	☒ Yes	☐ No
Building system retro-commissioning and upgrades, including automation	☒ Yes	☐ No
Weatherization Improvements	☒ Yes	☐ No
LEED Certification/Green Buildings	☒ Yes	☐ No
Other innovative strategies	☒ Yes	☐ No

Since signing the Illinois Climate Action Plan in 2010, the UIUC campus has embraced a fuel optimization strategy: where feasible, they have elected to utilize electricity generated from suppliers with lower carbon emissions and reduce their use of on-site existing coal and gas cogeneration facilities. UIUC has also targeted the HVAC systems of inefficient buildings in order to optimize energy use. Each year, buildings are selected from the top 100 energy consumption buildings on campus for recommission. UIUC elected to employ nine of the nine possible energy efficiency activities.

2 VERIFICATION PROCESS

The verification process consisted of the following activities:

Conflict of Interest Review

Scott Eaton, Lead Verifier, and Letty Brown, Verifier performed all verification activities for this engagement. Christie Pollet-Young, also a Lead Verifier for SCS, internally reviewed the verification upon completion. A Conflict of Interest (COI) assessment was conducted to identify any potential conflicts of interests with the verification on 26 February 2020. No conflicts were identified.

Introductory Meeting

A planning meeting was conducted between the verification team, Second Nature, and UIUC representatives on 27 February 2020. The purpose of the kick-off meeting was to review the scope, objectives, and timeline of audit; confirm verification criteria; determine any changes in the site, sources, GHG management systems or personnel, and to begin gathering information. The following individuals attended the opening meeting: Meredith Kay Moore, the Sustainability Programs Coordinator for UIUC; Ruby Woodside, Climate Programs Senior Manager for Second Nature; Batistrya Jamal Affendy, Climate Program Intern for Second Nature; and Letty Brown and Amber McEldowney of SCS.

Desk Review

SCS received and reviewed the Monitoring Report, project calculations, and supporting documentation to assess initial conformance with the data and documentation requirements provided in the verification criteria. A risk assessment was conducted, and a sampling plan was created to identify key factors that impact the reported emission reductions and removals. A Verification Plan was created to focus on the critical elements presenting potential risk for errors with the Project.

Quantitative Review

An assessment of the emission reduction calculation inputs and procedures was performed to review the quantitative analyses undertaken by the project proponent to convert the raw inventory data into emission reduction estimates.

Findings

Throughout the verification, there is the opportunity for an iterative exchange between SCS and the project proponent to gather additional information for review and examination. This exchange includes Findings—New Information Requests (NIR), Non-Conformity Reports (NCR) and Observations (OBS)—that were issued by SCS to the project proponent. The project proponent is required to sufficiently respond to all NIRs and NCRs in order for SCS to render a verification opinion. At this time any findings that may have been issued have been appropriately addressed by UIUC and subsequently closed by SCS. The Findings Log is attached as Appendix A.

Draft Report and Statement

This step in the verification process includes a final review of the submitted data, completion of the Verification Report, and drafting of the Verification Representation Statement. A draft Verification Report and Statement are completed based on the results of the verification assessment.

Internal Review

The draft report was presented to a SCS Lead Verifier, independent of the verification, who determined the Verification Representation to be justified given the evidence presented. The Verification Report and Verification Representation were then presented to UIUC for review and comment.

Final Report and Statement

Once UIUC approved the report it was then submitted to the VCS for review per the VCS rules. Once VCS approves these documents, they are uploaded to the VCS project database for public view.

NOTE: No validation activities were required during this verification, as there were no material project deviations or methodology deviations.

2.1 Method and Criteria

The verification activities focused on the material aspects of the project that factor into the emissions reduction assertion represented within the monitoring report. These included:

- Evaluation of conformance with VCS rules and requirements
- Evaluation of the project implementation status
- Evaluation of monitoring system and procedures
- Evaluation of the GHG data and calculations
- Evaluation of the GHG emission reduction assertion represented in the monitoring report

The sampling plan is described below:

Parameter	Data Reviewed	Comments
Management system and data tracking	VCS Monitoring Report, Calculation Workbooks, Personnel Interviews, communication, monitoring documentation provided by project proponent.	Reviewed monitoring documentation, and consistency of parameter values throughout documentation, data, and applicable calculation tools.

Sources of emission reductions	Scope 1 and Scope 2 Calculations - as well as - emission source primary activity data	Reviewed Samples of monthly data input contributing to the sum of NPCF energy usage (Project Emissions Adjustments), Project Emissions from Scope 1 sources, and Purchased Electricity. Reviewed invoices for purchased natural gas and electricity. Due to the number of documents available for the monitoring period, only a sample of months were selected, based on a random sample.
Correct application of emission factors	VCS Monitoring Report, Calculation Workbooks, project documentation, and data	Reviewed the SIMAP calculator that is the online replacement to the Campus Carbon Calculator (CCC; previously called the Clean Air Cool Planet calculator), as consistent with the methodology and Second Nature (formerly ACUPCC) guidance. The appropriate eGRID subregion (SRMW) is used in SIMAP to facilitate the conversion of kWh to CO ₂ e
Accurate calculation of emissions	Scope 1 and Scope 2 Calculations - as well as - emission source primary activity data, application of correct emissions factors.	Reviewed the SIMAP calculator output sheets and methodology worksheet, as well as primary Scope 1 and 2 activity data.
Materiality threshold	The sum of omissions, errors, and misrepresentations.	Reviewed the SIMAP calculator output sheets and methodology worksheet, as well as primary Scope 1 and 2 activity data.
Evidence to support additionality tests	Methodology workbook, changes in square feet. (none)	Reviewed monitoring report, Second Nature report, STARS report, and methodology worksheet.
Internal QA/QC	VCS Project Description Document, VCS monitoring report, initial validation report, and communication with project staff.	Reviewed monitoring documentation, previous validation and verification reports, and information provided by project proponent.
Qualifications & Competency	Review project staff qualifications and experience.	Interaction and communication with UIUC project Staff, review of project staff qualifications.

2.2 Document Review

The monitoring report (version 1 dated June 2020; “MR”) was carefully reviewed for conformance to the verification criteria. The following additional documentation, provided by project personnel in support of the aforementioned documents, was also reviewed by the audit team:

Document	File Name	Ref.
VCS Monitoring Report	(UIUC) Monitoring Report_V2018_V2019	1
VCS Project Description Document	PROJ_DECS_1407_60CT2014	2
Methodology Worksheet (Campus-wide Project Evaluation and ER estimates)	(UIUC) Excel Template_V2018_V2019	3
Utilities Summary with NPCF data	(UIUC) CY_FY_June_2020_with_Petascale	4
Calculation of Expected Electric Decrease without Petascale kWh	(UIUC) Illinois SC exclusion_Latest	5
NPCF Energy Use Data	(UIUC) Petascale info_Latest	6
Utility Summary	(UIUC) Utility Summary_Latest	7
Monthly Invoice Summaries	UIUC_INVOICE_100138-UIUC-Electric Jul18 [Sep18, etc]	8
Electricity Invoices	TEM-Prairieland Energy Inc Electricity-Nov18 [Mar19, etc]	9
Natural Gas Invoices	TEM-Prairieland Energy Inc Natural Gas-Jul18 [Mar19, etc]	10
SIMAP Tool Outputs	Carbon References_ Scope 1_ Stationary Fuels _ SIMAP; Carbon References_ Scope 3_ Commuting and Travel _ SIMAP; Updated Methodology _ SIMAP	11

2.3 Interviews

2.3.1 Interviews of Project Personnel

The process used in interviewing project personnel was a process wherein the audit team elicited information from project personnel regarding (1) the work products provided to the audit team in

support of the MR; (2) actions undertaken to ensure conformance with various requirements and (3) implementation status of the project activities.

The following personnel associated with the project proponent and/or implementing partner were interviewed.

Individual	Affiliation	Role	Date(s) Interviewed
Meredith Moore	UIUC	Sustainability Programs Coordinator	25 September 2020
Ruby Woodside	Second Nature	Climate Programs Senior Manager	25 September 2020
Batrisiya Jamal Affendy	Second Nature	Climate Programs Intern	25 September 2020
Anthony Spurlock	UIUC	Associate Director of UES, Budget Resources Planning	20 November 2020

2.4 Site Inspections

No site inspections were conducted during this verification. The supporting documentation and data were very detailed for this project. The data included project documentation, primary data, required calculations, coal, gas and electricity invoices etc. Through additional reviews of the initial validation and verification reports, and interviews with Project Personnel, SCS determined a reasonable level of assurance could be obtained without an on-site visit.

Resolution of Findings

Any potential or actual discrepancies identified during the audit process were resolved through the issuance of findings. The types of findings typically issued by SCS during this type of verification engagement are characterized as follows:

- **Non-Conformity Report (NCR):** An NCR signified a discrepancy with respect to a specific requirement. This type of finding could only be closed upon receipt by SCS of evidence indicating that the identified discrepancy had been corrected. Resolution of all open NCRs was a prerequisite for issuance of a verification statement.
- **New Information Request (NIR):** An NIR signified a need for supplementary information in order to determine whether a material discrepancy existed with respect to a specific requirement. Receipt of an NIR did not necessarily indicate that the project was not in compliance with a specific requirement. However, resolution of all open NIRs was a prerequisite for issuance of a verification statement.

- Observation (OBS): An OBS indicates an area where immaterial discrepancies exist between the observations, data testing results or professional judgment of the audit team and the information reported or utilized (or the methods used to acquire such information) within the GHG assertion. A root cause analysis and corrective action plan are not required, but highly recommended. Observations are considered by the audit team to be closed upon issuance, and a response to this type of finding is not necessary.

As part of the audit process, zero NCRs and five NIRs were issued. All findings issued by the audit team during the audit process have been closed. In accordance with Section 4.1.14 of the VCS Standard, all findings issued during the audit process, and the impetus for the closure of each such finding, are described in Appendix A of this report.

2.4.1 Forward Action Requests

This section is not applicable, as no forward action requests have been issued.

2.5 Eligibility for Validation Activities

SCS Global Services (VVB ID 006) holds accreditation through ANSI for the validation for the relevant sectoral scopes 1 and 3 under the VERRA (<http://verra.org/project/vcs-program/>) (formerly Verified Carbon Standard).

3 VALIDATION FINDINGS

During this verification and upon review of the project documentation, no validation activities were required as there were no material project deviations or methodology deviations. VCS ID 1407 is not a grouped project, and there were no findings relative to the scope of validation requirements.

3.1 Participation under Other GHG Programs

This section is not applicable, as the project is not, at this time, seeking registration under the VCS Program and an approved GHG program.

3.2 Methodology Deviations

No methodology deviations were applied to this project during the current reporting period.

3.3 Project Description Deviations

No project description deviations were applied to this project during the current reporting period.

3.4 Grouped Project

This is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

4.1.1 Implementation Status of the Project Activity(s)

The approved methodology module VMD0038 applies to project activities that result in substantial improvement in a college or university's energy performance through activities that focus on reductions in scope 1 stationary combustion emissions and/or activities that focus on reductions in scope 2 electricity emissions. The project must demonstrate that it has achieved the required substantial reductions in GHG emissions by implementing at least two of the following activities:

- Behavior change campaigns
- Cogeneration and fuel switch
- Lighting retrofits
- On-site renewables
- Boiler retrofits, central heating and cooling upgrades
- Building system retro-commissioning and upgrades
- Weatherization improvements
- LEED certification/green building
- Other innovative strategies

UIUC elected to focus on the reduction in Scope 1 stationary combustion emissions only through the implementation of energy efficiency measures within all applicable categories. For the current monitoring period, UIUC has reported the continued implementation of all of the applicable energy efficiency activities. Upon review of the documentation and information provided by UIUC, with respect to the energy efficiency activities listed above, it was confirmed that there were no material discrepancies between the project implementation and the project description as provided in the monitoring report.

Through communication with Ms. Woodside and Ms. Affendy, it was confirmed that the monitoring plan was implemented as described in the current monitoring report. Ms. Moore and Mr. Spurlock were accountable for carrying out the monitoring activities on behalf of the project proponent. The GHG data was collected, aggregated, stored, calculated, controlled, and reported in accordance with the monitoring plan set out in the monitoring report. Quality control and quality assurance procedures were confirmed by project personnel and documentation provided by Mr. Spurlock. Upon review of the documentation and information provided by UIUC, it was confirmed that there were no material discrepancies between the actual monitoring system and the monitoring plan set out in the Project Description.

It was confirmed by project personnel that the GHG emission reductions or removals generated by the project have not been included in any emissions trading program any other mechanism that includes GHG allowance trading.

It was confirmed by project personnel that the project has not received or sought any other form of environmental credit or has become eligible to do so since validation or previous verification.

It was confirmed by project personnel that the project has not participated or been rejected under any other GHG programs since validation or previous verification.

There were no previously validated methodology deviations for this project listed in the previous verification report.

Through review of the documentation and information provided by UIUC, it was concluded that there were no material discrepancies between current project implementation and the project implementation as described in the project description.

The implementation status of the project activities can be identified as follows:

The steps taken by the audit team to assess each of the following items is specified below.

Item	Verification findings
Existence of any material discrepancies between project implementation and the project description	Through interviews conducted with project personnel and document assessment, the audit team confirmed no material discrepancies between project implementation and the project description.

The implementation status of the monitoring plan and the completeness of monitoring, including the suitability of the implemented monitoring system (i.e., process and schedule for obtaining, recording, compiling and analyzing the monitored data and parameters)	• Through interviews conducted with project personnel and document assessment, the audit team confirmed the implementation status of the monitoring plan and the completeness of monitoring, including the suitability of the implemented monitoring system. • Through a review of calculations (please see Section 2.4) and those responsible for their inputs, the audit team was able to gain a detailed understanding of the steps taken to collect, compile and analyze the inventory data, as detailed in Section 4.5.
The existence of any material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology	• Through interviews conducted with project personnel and document assessment, the audit team confirmed no material discrepancies between the actual monitoring system and the monitoring plan set out in the project description and the applied methodology. • Please see above regarding the project's quantitative meetings and interviews.

Whether the GHG emission reductions or removals generated by the project have become included in an emissions trading program or any other mechanism that includes GHG allowance trading	Through general knowledge of other emission trading programs and other mechanisms that include GHG allowance trading, as well as knowledge of the organizations involved in the project team, the audit team is confident that participation in such programs that may lead to double-counting has not occurred. The SIMAP tool outputs are reported publicly to the Climate Leadership Commitment (formerly the American College & University Presidents' Climate Commitment, ACUPCC) and the Sustainability Tracking, Assessment, & Rating System (STARS), a transparent, self-reporting framework for colleges and universities to measure their sustainability performance. SCS has confirmed that the project is registered with and receiving ratings from both the Climate Leadership Commitment and STARS program. However, the GHG reductions associated with and accounted for within the ACUPCC and STARS programs do not produce carbon or environmental credits. Therefore, it was confirmed by SCS that double-counting of credits does not occur.
Whether the project has received or sought any other form of environmental credit, or has become eligible to do so since validation or previous verification	Please see box above. The audit team is confident that the project has not received or sought any other form of environmental credit or has become eligible to do so since validation.
Whether the project has participated or been rejected under any other GHG programs since validation or previous verification	Please see box above. The audit team is confident that the project has not participated in or been rejected under any other GHG programs since validation or since the previous verification.

Sustainable development contributions	Through interviews conducted with project personnel and document assessment, including close review of Section 1.10 of the MR, the audit team confirmed the project's sustainable development contributions.
---------------------------------------	--

4.1.2 Previously Validated Methodology Deviations

As there exist no previously validated methodology deviations, this section is not applicable.

4.1.3 Previously Validated Project Design Deviations

As there exist no previously validated project design deviations, this section is not applicable.

4.1.4 Previously Validated Minor Changes to the Project Description

As there exist no previously validated minor changes to the project description, this section is not applicable.

4.1.5 Overall Conclusion

In summary, the audit team can confirm that the project has been implemented as described in the validated project description.

4.2 Safeguards

4.2.1 No Net Harm

An assessment of potential negative environmental and socio-economic impacts has been performed in accordance with Section 3.16.1 of the VCS Standard and no such impacts have identified. The audit team has a reasonable level of assurance that there are no known negative environmental or socio-economic impacts of the project activities.

4.2.2 Local Stakeholder Consultation

Not applicable to this project.

4.3 Accuracy of GHG Emission Reduction and Removal Calculations

The approved VCS Methodology Module VMD0038 employs a series of parameters to calculate the project emissions reductions. The parameters are calculated using primary activity data from the university operations and are used in multiple equations throughout the methodology module for both performance tests and emissions reductions calculations. SCS reviewed primary data sources and selected samples of data for comparison in order to confirm the accuracy of the emissions reduction calculations.

Fiscal data is gathered from the energy team and input to the CACP replacement, SIMAP. SIMAP then generates greenhouse gas emissions outputs. These outputs were directly entered into the methodology project calculation template to conduct the applicable performance tests, and to calculate the baseline emissions (BE), project emissions (PE), and emissions reductions (ER) for the monitoring period. The SIMAP outputs are entered into the VCS project template and reported publicly to the Climate Leadership Commitment (formerly the American College & University Presidents' Climate Commitment, ACUPCC) and the Sustainability Tracking, Assessment, & Rating System (STARS), a transparent, self-reporting framework for colleges and universities to measure their sustainability performance. These programs include a stakeholder review process to establish and maintain procedures for accountability. SCS has confirmed that the project is registered with and receiving ratings from both the ACUPCC and STARS program. This standardized approach controls for errors in GHG reporting and reduces the risk of ER calculation errors. However, the GHG reductions associated with and accounted for within the ACUPCC and STARS programs do not produce carbon or environmental credits.

SCS conducted a manual recalculation of a sample of UIUC's primary energy consumption data to crosscheck the values input into the SIMAP calculator. The audit team then crosschecked the inputs into the methodology calculation template to identify transposition errors between datasets. Additionally, the audit team performed a sample of checks to confirm the accuracy of spreadsheet formulae, conversions and aggregations, and consistent use of data and parameters across the calculation worksheets.

Through review of the documentation and information provided by UIUC, it was concluded that the GHG emissions reductions have been quantified correctly in accordance with the project description and the applied methodology. Materiality calculation checks were conducted for each Fiscal Year portion of the monitoring period, as well as for the total monitoring period. The Net GHG emission reductions or removals recalculated by the audit team were found to have a less than 5% difference from the value reported. Therefore, the audit team concludes with a reasonable level of assurance that the emission reductions calculations are accurate within the applicable materiality threshold.

4.3.1 Data and Parameters Available at Validation

The data and parameters required at validation include those provided in the table below:

Parameter	Included in Project	
PBSc	☒ Yes	☐ No
PBE _c	☐ Yes	☒ No
B	☒ Yes	☐ No
HDD _{p=y}	☐ Yes	☒ No
CDD _{p=y}	☐ Yes	☒ No
SCAP	☒ Yes	☐ No
E2AP	☐ Yes	☒ No

Data/Parameter	Accuracy of GHG emission reductions and removals	Whether methods/formulae set out in project description have been followed	Appropriateness of default values
PBSc	N/A as this parameter was evaluated during the validation process.	Confirmed that reported values are equal to those in Section 4.1 of PD	N/A as this parameter was evaluated during the validation process
B	N/A as this parameter was evaluated during the validation process.	Confirmed that reported values are equal to those in Section 4.1 of PD	N/A as this parameter was evaluated during the validation process
SCAP	N/A as this parameter was evaluated during the validation process.	Confirmed that reported values are equal to those in Section 4.1 of PD	N/A as this parameter was evaluated during the validation process

4.3.2 Data and Parameters Monitored

The data and parameters required for annual monitoring include those provided in the table below:

Parameter	Included in Project	
SF _{b=x}	☒ Yes	☐ No
SF _{p=y}	☒ Yes	☐ No
F _{b=x, i}	☒ Yes	☐ No
F _{p=y, i}	☒ Yes	☐ No
E _{b=x}	☒ Yes	☐ No
E _{p=y}	☒ Yes	☐ No
Y	☒ Yes	☐ No
ΔE _y	☒ Yes	☐ No
AT _{y,i}	☐ Yes	☒ No
PSH _{b=x}	☒ Yes	☐ No
PSH _{p=y}	☒ Yes	☐ No
PC _{b=x}	☒ Yes	☐ No
PC _{p=y}	☒ Yes	☐ No
ΔF _{y,i}	☐ Yes	☒ No

	Steps taken by audit team to assess...		
Data/Parameter	Accuracy of GHG emission reductions and removals	Whether methods/formulae set out in project description have been followed	Appropriateness of default values
SF _{b=x} ; SF _{p=y}	The square footage values for the project are considered appropriate. The verification of this parameter has been made independently by the audit team through review of historical imagery.	Confirmed that the monitoring methods were followed as set forth in the registered PD through review of calculations documentation.	N/A

	Steps taken by audit team to assess...		
Data/Parameter	Accuracy of GHG emission reductions and removals	Whether methods/formulae set out in project description have been followed	Appropriateness of default values
$F_{b=x,i}$; $F_{p=y,i}$	The stationary combustible values for the project are considered appropriate. The verification of this parameter has been made independently by the audit team through review of utility invoices.	Confirmed that the monitoring methods were followed as set forth in the registered PD through review of calculations documentation.	N/A
$E_{b=x}$; $E_{p=y}$ ΔE_y ;	The scope 2 electricity emissions for the project are considered appropriate. The verification of this parameter has been made independently by the audit team through review of utility invoices.	Confirmed that the monitoring methods were followed as set forth in the registered PD through review of calculations documentation.	N/A
$PSHb=x$; $PSHp=y$	The scope 2 emissions from steam and/or heat for the project are considered appropriate. The verification of this parameter has been made independently by the audit team through review of utility invoices.	Confirmed that the monitoring methods were followed as set forth in the registered PD through review of calculations documentation.	N/A
$PCb=x$, $PCp=y$	The scope 2 emissions from purchased cooling for the project are considered appropriate. The verification of this parameter has been made independently by the audit team through review of utility invoices.	Confirmed that the monitoring methods were followed as set forth in the registered PD through review of calculations documentation.	N/A

4.4 Quality of Evidence to Determine GHG Emission Reductions and Removals

Parameter	Evidence Provided	Evaluation Method	Assessment
$SF_{b=x}$; $SF_{p=y}$	Second Nature, STARS GHG Reports; Campus Map	These documents were reviewed, along with the monitoring report, and affirm that there only a small change in square footage from the previous verification. The square footage value was consistent with ACUPCC/STARS reporting. The campus map was compared with the previous documentation and with aerial imagery. The Project Proponent also confirmed in a telephone interview that the project boundary had not changed, and that the utility meters associated with these facilities has not changed.	The evidence and affirmations provided are of sufficient quality and detail to be verifiable with a reasonable level of assurance and are in conformance with the verification criteria.

Parameter	Evidence Provided	Evaluation Method	Assessment
$F_{b=x,i}$; $F_{p=y,i}$	Natural Gas Utility Invoices; Plant Production Reports; Methodology Calculator; SIMAP Calculator	The energy use summary and supporting primary evidence sampled for these fuel sources was reviewed for consistency with the Monitoring Report and calculator worksheets. This information is detailed and demonstrates the reporting documentation is derived from the relevant invoices and conforms to the defined monitoring procedures. Natural gas purchase information has to be summarized and input into the calculators appropriately but there is a clear process.	The evidence provided is of sufficient quality and detail to be verifiable with a reasonable level of assurance, and in conformance with the verification criteria.

Parameter	Evidence Provided	Evaluation Method	Assessment
$E_{b=x}$; $E_{p=y}$ ΔE_y ; $PSH_{b=x}$; $PSH_{p=y}$ $PC_{b=x}$; $PC_{p=y}$	Electricity Utility Invoices; Petascale Facility Electricity Consumption Data; Methodology Calculator; SIMAP Calculator	The energy purchase evidence provided and computing facility energy consumption evidence provided were reviewed for consistency with the Monitoring Report and calculators. This information is detailed and demonstrates the reporting documentation is derived from the relevant invoices and monitoring sources and conforms to the defined monitoring procedures. The process for aggregation of the utility information and computing facility was also discussed via phone interview in greater detail to ensure competency and understanding of the flow of information.	The evidence provided is of sufficient quality and detail to be verifiable with a reasonable level of assurance, and in conformance with the verification criteria.

4.4.1 Nature of Data and Information Supporting GHG Quantification

None of the data supporting the quantification of GHG emission reductions and/or removals were hypothetical, projected and/or historical in nature.

4.4.2 Quality and Quantity of Evidence Used to Determine GHG Quantification

The evidence used to determine the GHG reductions and removals for the verification period was of sufficient quantity and appropriate quality. An identification of the categories of evidence used to determine the GHG emission reductions and removals, and a description of the steps taken to assess the sufficiency of quantity, and appropriateness of quality, of each category of evidence, follows.

	Steps taken by audit team to assess...		
Category	Reliability of the evidence, and source and nature of evidence (external or internal, oral or documented) for determination of GHG emission reductions or removals	Information flow from data generation and aggregation, to recording, calculation and final transposition into the MR	Appropriateness of implemented calibration frequency of monitoring equipment
Methodology workbook	Recalculation of calculated quantities from project methodology workbook. Comparison with previous years.	Comparison of recalculated quantities with amounts calculated in SIMAP workbook and reported in MR.	N/A (no calibration necessary)
Utilities Data	Review of original invoices, accompanying descriptions in utilities summary.	Interviewed Utilities Director regarding aggregation process, quality checks, and inputs into relevant tool/workbook sections.	N/A (no calibration necessary)
SIMAP Tool	Equations and Default Values are described on the website for each input.	Inputs from Utilities summary are consistent with these values, SIMAP exports for the emissions values, and the values input in the methodology workbook	N/A (no calibration necessary)

Overall, the evidence used to determine the GHG reductions and removals for the verification period is of sufficient quantity (i.e., all necessary information has been provided to allow the audit team to trace and, as necessary, recalculate the quantification of GHG reductions and removals), and of appropriate quality (i.e., information presented is free of misstatements, whether material or immaterial) to allow the audit team to render a verification opinion.

4.5 Non-Permanence Risk Analysis

The Non-Permanence Risk Analysis is not relevant for this project.

5 VERIFICATION CONCLUSION

Clearly state whether the project complies with the verification criteria for projects and their GHG emission reductions or removals set out in VCS Version 4, including any qualifications or limitations. Confirm that the project has been implemented in accordance with the project description and subsequently validated variations.

Where the audit has included validation activities, clearly state whether the project complies with the validation criteria for projects set out in VCS Version 4, including any qualifications or limitations. Provide a conclusion on the quantity of GHG emission reductions or removals in tCO₂e equivalents achieved by the project during the verification period. Include a confirmation and a breakdown of GHG emission reductions or removals by vintages within the verification period, where relevant.

The audit team asserts, with no qualifications or limitations, that

- The project complies with the verification criteria for projects and their GHG emission reductions or removals set out in VCS Version 4.
- The project has been implemented in accordance with the validated project description and any subsequently validated variations.

Verification period: From 1 January 2018 to 30 June 2019

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	PE Adjustment emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
FY2018 (1 January 2018 – 30 June 2018)	162,818	116,819	6,189	39,810
FY2019 (01 July 2018 – 30 June 2019)	321,404	187,105	46,009	88,290
Total for this monitoring period only (1 Jan 2018 – 30 June 2019)	484,222	303,924	52,198	128,100

APPENDIX A: LIST OF FINDINGS

Please see the above Section 2.5 for a description of the findings issuance process and the categories of findings issued. It should be noted that all language under “Project Personnel Response” is a verbatim transcription of responses provided to the findings by project personnel.

NIR 1 Dated 30 Sep 2020

Standard Reference: VCS Standard v4, section 2.2.1

Document Reference: UIUC Utility Summary; Electricity Invoice Excel Sheets

Finding: There are inconsistencies between some allocations of electricity purchased in the Invoice excel sheets and the Utility Summary. In the example of the July '18 invoice the "Big Bill", "Small Bill--Inc CIPS5", and "Allerton Park & 4-H Camp" allocations in cells I42, I43, and I44 do not match with electricity allocations in the Utility Summary. These categories also do not match in the November '18 invoice, however the "Big Bill" category matches the amount in the Utility Summary (in cell EG375) for the March '19 invoice. Please confirm which columns in the Utility Summary are associated with these three groups of electricity purchased, and provide information supporting the values included in the Utility Summary.

Project Personnel Response: The differences between the Utility Summary and the Prairieland bill are very small. They are typically related to meter changes that would not necessarily be reflected in the Prairieland bill.

Column FN – Allerton

Column EG - Big Bill

Columns GO + GR + GU +GX + HA + HD Small Bill – Inc CIPS5

Auditor Response: This response is helpful. An additional interview with the Utilities Director clarified where the invoice data comes from and the process for entering it specific to the months sampled, noting "The only wrinkle is the PEI invoice which includes dollar estimates related to MISO billing adjustments that are expected to be invoiced in future periods. The units for PEI come from the IP Main Sub DS4 Scaled Usage in column DX. The invoice totals for dollars and units are totaled." These billing adjustments described are indeed minor, and it is confirmed that the appropriate invoice data is being included in the utilities summaries. This finding is closed

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 2 Dated 30 Sep 2020

Standard Reference: VCS Standard v4, section 2.2.1

Document Reference: SIMAP Excel Exports / Tool

Finding: In the CACP Calculator previously used, it was possible to review the equations which resulted in the various GHG amounts and CO2 equivalent. If possible, please provide a screenshot showing the equations as they are applied in the SIMAP tool to calculate the GHG amounts and CO2 equivalent.

Project Personnel Response: Attached

Auditor Response: The SIMAP exports are helpful and demonstrate appropriate inputs and equations. This process was also demonstrated in a meeting. Finding is closed.

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 3 Dated 30 Sep 2020

Standard Reference: VCS Standard v4, section 2.2.1

Document Reference: UIUC Utility Summary; Natural Gas Invoices

Finding: The amounts of natural gas described as purchased in the invoices reflect the amount in column BP of the Utility Summary, however there are additional allocations of natural gas in columns Q, T, and W of the Utility Summary that contribute to project emissions. Please clarify the sources of these emissions and provide a sample of invoices which support their values.

Project Personnel Response: These are small gas bills for gas supplied by vendors other than Prairieland, primarily Ameren.

Total column for all of the natural gas is Column BZ. The invoices are attached.

Auditor Response: The invoices supplied include values consistent with those included in column BZ. Finding is closed.

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 4 Dated 30 Sep 2020

Standard Reference: VCS Standard v4, section 2.2.1

Document Reference: (UIUC) CY_FY_June_2020_with_Petascale.xlsx

Finding: The document "(UIUC) CY_FY_June_2020_with_Petascale.xlsx" references the amount of electricity used by the Supercomputer for the reporting period. Please clarify how this amount is calculated, and provide primary data for the reporting period, if possible. The audit team understands from the previous interview that the power for the supercomputer comes from the Solar Farm and Ameren, so please provide supporting documentation that these sources power the supercomputer facility specifically.

Project Personnel Response: The data is pulled from the Energy Billing System. The meter breakdown is provided in the attached documents; this will be helpful to understand how the amount is calculated. Meters are read electronically which improves the accuracy of the information.

Power from the supercomputer, and all of campus power, comes from co-generation and external purchases (on-campus solar, wind power agreement, grid purchases, co-generation power plant) from the campus grid.

Auditor Response: The EBS document provided is an excel sheet which does appear to include primary data for the facility for the reporting period. The values are consistent with those included in the other calculations.

Bearing on Material Misstatement or Conformance (M/C/NA):

NIR 5 Dated 30 Sep 2020

Standard Reference: VCS Standard v4, section 2.2.1

Document Reference: UIUC) Monitoring Report_V2018_V2019.doc

Finding: The MR includes a row of values in Net GHG Emission Reductions and Removals Table for "Subtract Credits already issued for Project Year 7 1st1/2 (1 July 2017-31 December 2017)". Please provide clarification of how these values for the half year interval were calculated based on the full year of credits issued.

Project Personnel Response: Response provided via email with reference to the previous RP values.

Auditor Response: The previous monitoring report references values consistent with the current monitoring report, the subtraction of the previous reductions carried out appropriately. Finding is closed.

Bearing on Material Misstatement or Conformance (M/C/NA):

APPENDIX B: STAKEHOLDER INPUT AND PROJECT PROPONENT RESPONSE

Not applicable as no stakeholder input was received.