

Quantifying Financed Emissions at NAU: A Novel, Data-based Approach to the Fossil Fuel Divestment Movement

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NAU Green Fund Student grant Research Application

Abstract

Measuring and reporting annual greenhouse gas (GHG) emissions at NAU is the foundation of effective climate action. NAU has made great strides to improve accounting and reporting of scope 1 & 2 emissions, however significant data gaps exist when we look at NAU's value chain. Value chain GHG emissions (also referred to as scope 3) are the largest source of emissions for most reporting entities (SBTI, 2018), however these same emissions are often overlooked due to data challenges. In the context of Universities, one aspect of the value chain with very little research focus is financed GHG emissions from endowment investment funds (scope 3, category 15 emissions). University endowments have been under increasing scrutiny as it relates to the fossil fuel divestment movement, however, the call to action has been largely categorical (i.e. divest from all fossil fuel assets) and rarely quantitative (i.e. divest from assets based on GHG metrics). The primary objectives of this proposal are threefold: 1. Analyze NAU's endowment using the Partnership for Carbon Accounting Financials (PCAF) standards (PCAF, 2020); 2. Quantify the impacts of divestment using GHG metrics; 3. Engage with the NAU Foundation about opportunities to proactively align and integrate the endowment investment strategy with NAU's Climate Action Plan (CAP). The results of this research will be considered for publication in a peer-reviewed journal. Based on our review of the literature, this would be the first assessment of financed emissions from a university endowment using the PCAF standards - which represents an opportunity for NAU to position itself on the cutting edge of GHG accounting best practices. If approved, this project will provide much needed data for NAU's scope 3 GHG inventory and allow for a quantitative analysis of the GHG impacts associated with divestment.

Detailed Project Proposal

With the recent draft CAP, NAU is taking a bold step in the transition to carbon neutrality. Commitment to an ambitious GHG reduction goal will undoubtedly inspire innovation and creativity in NAU's fight against climate change. The bedrock of any GHG

reduction goal is good GHG accounting, which is described in detail in NAU's CAP. While there is good data coverage for scope 1 & 2 GHG emissions, scope 3 remains a challenge for NAU. The CAP makes this clear in the introduction:

*The **university recognizes that addressing Scope 3 emissions is necessary for complete carbon neutrality and will develop a plan to address these emissions. However, at present, the university lacks an accounting infrastructure for these emissions. Additionally, many of the units or departments whose activities generate these emissions have not, heretofore, been aware of or valued emissions reductions through their activities. Therefore, this plan makes the practical, yet ambitious commitment that within five years after development of the CAP, the university will generate reliable data on its Scope 3 emissions and commit to means for neutralizing Scope 3 emissions towards a stated end date. (NAU, 2021 - pg. 7)***

NAU's commitment to generate reliable scope 3 data is the impetus behind this Green Fund Student Research Grant application. Scope 3 emissions represent fossil fuel combustion up and down the value chain - which make up the vast majority of total GHG emissions for most reporting entities (SBTi, 2018). Sources of scope 3 emissions are diverse, and data availability to account for these emissions is often a major barrier. The World Resource Institute has defined 15 distinct categories of scope 3 emissions to help organize and streamline accounting efforts (WRI, 2011). This proposal focuses on an often overlooked category of scope 3 emissions - Category 15: Investments.

Scope 3 Category 15: Investments was primarily designed for private financial institutions, however it is also relevant for any reporting entity with investments not included in scope 1 & 2 reporting (WRI, 2011). In the context of higher education, endowments are a significant source of invested wealth with the purpose of supporting the school's academic mission (Deeks, 2017). At NAU, both endowed and current-use funds are managed by the NAU Foundation - a 501(c)(3) organization which "exists for the sole purpose of supporting NAU" (NAU Foundation, 2022). While the NAU Foundation is a separate entity from NAU itself, it's clear that the NAU Foundation is a critical part of NAU's value chain. GHG emissions from the Foundation's investment portfolio must be quantified and accounted for in scope 3 category 15 in order to meet NAU's CAP goal of generating reliable scope 3 data.

GHG accounting is not the first activity to generate interest in the climate change impact of university endowment funds. The fossil fuel divestment movement began in 2011, led largely by students. Student leaders are "pushing their colleges and universities to immediately freeze new investments in the top 200 fossil fuel companies with the largest reserves, and divest their endowments completely of fossil fuel assets over five years as a bold statement against the incompatibility of the fossil fuel industry with a just and livable future." (Grady-Benson, 2014). The success of university divestment campaigns have been mixed, with many universities rejecting fossil fuel divestment based on reasons such as cost, fiduciary

responsibility, and **minimal** impact. **However**, the **fossil** fuel divestment movement **has scored major victories** including the recent **decision** by Harvard to divest **from all fossil fuel assets (Fossil Fuel Divest Harvard, 2021)**. Divestment is a conversation **here** at **NAU**, with the **student group Fossil Free NAU** leading **the effort**. There **is** strong alignment between the **goals of fossil fuel divestment** and carbon neutrality as defined by the CAP, **however** divestment has never been quantified in **terms of impact** on scope **3** GHG emissions for a university. **This research will** bring a novel approach to the **fossil fuel divestment movement**, **focused** on quantification and reporting of scope **3 category 15 GHG** emissions at NAU.

We propose three primary objectives for the research. The approaches, methods, and **expected results are described** for each **objective below**:

1. Analyze NAU's endowment using the PCAF standards

Our research team will engage **directly** with the NAU Foundation to collect data on the investment portfolio. **We will** leverage methodology published by the Partnership for Carbon Accounting Financials (**PCAF, 2020**) to guide data collection, **analysis**, and metric calculations. The **outcomes of this process will** be threefold:

1. A gap **analysis** of data availability for each PCAF **metric**;
2. An estimate of the **scope 3 category 15** GHG emissions **for** funds managed by **the NAU Foundation based on best available data**; and
3. A data management plan to **improve data availability in line with** NAU's scope 3 data reliability **goals**.

2. Quantify the impacts of divestment using GHG metrics

After the GHG emissions associated with the current NAU Foundation investment strategy have been quantified, the impact of **divestment on NAU's scope 3 category 15 emissions can** be derived. Working **with** the NAU CAP team, **we will** analyze the **relative impact of scope 3 category 15 emissions compared to** other emission **sources** at NAU. A report **will be generated** to **contextualize** the potential role **of divestment in NAU's journey towards** carbon neutrality.

3. Engage with the NAU Foundation about opportunities to proactively align and integrate the endowment investment strategy with NAU's CAP

Sustainability **is** an exercise that all stakeholders **in** an organization play **a part** in. Here at NAU, the **foundation is** a key stakeholder in our **sustainability journey**. Our **research team will facilitate a workshop with** NAU'S CAP team and **leadership from** the NAU Foundation to explore

investment strategies that meet **both** the fiduciary **responsibility of the** foundation and carbon **neutrality** goals of NAU's CAP.

Conclusion

This research project is an opportunity to meet a clearly stated goal in NAU's CAP (improve scope 3 data), engage a key stakeholder in NAU's sustainability journey (the NAU Foundation), and bring a novel, data-based approach to a major movement taking place across universities worldwide (fossil fuel divestment). By funding this research, NAU will position itself as a leader in university GHG accounting. This may serve as an inspiration for other universities

to conduct similar research and help drive collective climate action. We thank you for your time and consideration of this Green Fund Student Research Grant application.

Contact Information

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2026

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Department: School of Earth & Sustainability

Project Name: **Quantifying Financed Emissions at NAU: A Novel, Data-based Approach**
to **the** Fossil Fuel Divestment Movement

Questionnaire

Focus of project: Emissions
Reduction

1. How **will your** research benefit **the** mission **statement of the** Green Fund and **improve**

sustainability on NAU's campus?

This **research project** intends to **quantify** one of the **most challenging sources of** value chain GHG **emissions - financed emissions**. The **fossil fuel divestment** movement **has made** clear **the importance of** taking **responsibility for the negative environmental impacts of investment** portfolios - namely from the **fossil fuel industry**. The **negative environmental impacts of the fossil fuel industry** are wide ranging, **however** global GHG emissions are paramount. This research **project will reveal** the GHG **emissions impact of NAU's investment portfolio, providing** critical data to **inform** the Climate Action **Plan and support** a **data-based call to action** for **divestment**.

2. **Will your research require** the utilization of any spaces **or infrastructure on campus? If so**, identify the specific locations **and/or infrastructure**, how much of **the space you require**, and what each space **will be used for**.

Meetings with key stakeholders at NAU Foundation will be organized at NAU **Foundation facilities**. No **additional physical space and/or infrastructure will** be required.

3. Will other departments on **campus (other than your own)** be needed **to assist in this project (i.e. Facility Services, Campus Transit)? If so**, identify department **partnerships**.

Project

Budget

The NAU Foundation **will** be a critical stakeholder **in this research project**.

Item

Graduate Research

Hours

Justification

The Project Lead

Will dedicate a minimum

of 200 hours to

manage project
objectives, organize stakeholder
meetings, analyze data, and write a research
paper for
peer-reviewed
publication in a
leading
journal.

Total Funding Requested: \$3000

Project
Timeline

**Quantit
y**

Price per Unit

200

\$15

Action

Parties Involved

Funding Award
Announced

Green
Fund

Month/Year

Dec 2022

Initial Communication to NAU | Project Lead, NAU
Foundation

Jan 2023

Foundation

Establish recurring
project

FFNAU, Project Lead

Jan 2023

meetings **with** Fossil **Free**
NAU group. Identify
interest from students to
provide **project support**

Establish recurring **project**
meeting with NAU CAP
group. Identify interest
from students to provide
project support

NAU CAP group, Project
Lead

Jan 2023

Schedule project **kick-off**
meeting with NAU foundation

Outline data needs with NAU
Foundation
NAU Foundation, Project Lead

Feb 2023

NAU Foundation, Project Lead

Feb 2023

Complete Data
Collection

NAU Foundation, Project
Lead

April

2023

Complete literature **review for Project Lead**

May **2023**

paper

Data Analysis
complete

Project
Lead

May
2023

Initial results delivered to

Project
Lead

May
2023

NAU Foundation. Meeting
scheduled to discuss results
in **context with the NAU CAP**
and the call for divestment.

Draft of manuscript complete Project
Lead

May
2023

Begin peer review
process

Project
Lead

May
2023

End peer **review**
process

Project
Lead

Sep **2023**

Nov **2023**

Final **draft of** paper complete, | Project

Lead ready for publication

**Expected Project Completion Date: Nov
2023**

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