# **Tech Initiatives Proposal Form**

Student Technology Fee – AY 2024

**Employee Due Date: March 22, 2024** (revised from March 29)

**Student Due Date: March 22, 2024**  (revised from March 29)

## **Key Proposal Information**

Note: Enter information in the expandable fields directly after the information requested.

## **Project Title:** Life Cycle Assessment Database and Software

## **Briefly explain what you are requesting (400 characters max):** We are requesting money to purchase an indefinite simultaneous rotating 40-seat licence that will provide access to SimaPro LCA software and the Ecoinvent database for WWU Faculty and Students. Life Cycle Assement calculates the energy requirements, green house gas emissions and other sources of harm to human welfare and the environment associated with economic goods and services. It relies on ‘big’ datasets that incorporate material flows throughout the economy. For example, even a simple paper clip requires myriad raw resources and energy expenditures for its creation. Having this data at Western with the software to analyze it will allow ESCI/ENRG 466 Life Cycle Assessment students to create professional grade projects in cooperation with local businesses. The software will also be used extensively by ENRG, ESCI, CHEM professors and their graduate students for scholarship. Three initial projects involving students will consider electric vehicles, home insulation, and agriculture. It will become the conerstone of the ESCI/ENRG 466 Life Cycle course.

### **Principal Applicant**

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Dept/Org Affiliation (Enter “student,” “faculty,” or “staff”): Faculty, Institute for Energy Studies, ESCI

### **Secondary Applicant**

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Dept/Org Affiliation (Enter “student,” “faculty,” or “staff”): Director, Institute for Energy Studies

## **Important Proposal Notes**

1. Student Technology Fee Mission:

The Student Technology Fee (STF) provides Western students with adequate and innovative technology experiences by:

1. Broadening/enhancing the quality of the academic experience.
2. Providing additional student access to technology.
3. Increasing integration of technology into the curriculum.
4. The STF Committee will accept only complete proposals by the announced deadline. Every section (I-VIII) and all items of this proposal form must be addressed.
5. Disallowed items: The following five items generally **do not qualify** for STF Tech Initiatives funding:
6. Computer lab upgrades. (Existing computer labs are upgraded on a rolling schedule with a separate allocation of STF funds.)
7. Software related to maintenance and/or serial payments.
8. Maintenance contracts on equipment or software.
9. Expendable supplies.
10. Equipment that will not be used directly by students, and/or non-computer equipment or furnishings that are part of the typical classroom environment (such as lighting, portable and fixed media equipment, furniture, chairs, etc.).

## **Proposal Instructions**

### **I. Relationship to STF Objectives / Impact on Student Academic Experience**

1. The STF Committee uses as its primary assessment criteria the three objectives—**quality, access, and integration**—defined in the STF mission (“Note 1” above). Given these criteria, explain how the project would provide positive benefits to students. Focus on what students would gain from the project. Specifically, answer at least one of items a, b, or c below:
2. How would this project *broaden or enhance the quality* of the student’s academic experience through the proposed technology?

Life Cycle Assessment, with international standards in place (ISO 14040) has become well-established in both academia and industry as way to quantify and identify materials and energy flows that yield products and services with lower environmental harm, greenhouse gas emissions and lower monetary cost. Having access to these data will allow students to become proficient in these techniques, broadening possibilities for research and consultation.

1. How would this project *provide additional student access* to technological resources?

This software would be available to all students, faculty and staff at WWU. The software allows for 40 simulataneous users and unlimited non-simultaneous users. Data and work can be saved and resumed.

1. How would this project *increase integration* of technology into coursework?

This software at database would become the conorstone of ESCI/ENRG 466/566 life cycle assessment. Students will become proficient in the software and will conduct research projects for local products and services by conducting LCAs for WWU and local businesses. It will also be used extensively in ESCI/ENRG 482 Greenhouse Gas Mitigation. Graduate Students in ENRG, ESCI, CHEM and many other programs would likely find this software complementary to their research.

1. Would other departments be involved with this project? Enter “No “ or “Yes”. YES

IF “Yes,” describe. IF “No,” enter “N/A”.

Yes, the Institute for Energy Studies is cross-displinary and houses professors in many departments across campus. Initially the software would be used by the ESCI and the ENVS departments. I can readily assume ENRG 430 - Materials and Waste, ENRG 464 - Sustainable Building Design and CHEM 381 - Biofuels would find interest in using LCA in their research and classes.

1. Has any part of this proposed project previously been funded by the Student Technology Fee? Enter “No” or “Yes”. No

IF “Yes,” describe. IF “No,” enter “N/A”.

N/A

1. Is the proposed project a pilot project? Enter “No” or “Yes”. NO

IF “Yes,” describe. IF “No,” enter “N/A”.

N/A

### **II. Utilization**

List the anticipated number of times and duration per each use—per quarter or per academic year—that students would use the proposed technology, along with the impact of that proposed technology on students. Note: Proposals are funded after careful consideration of both the number of students that will be impacted by the technology and by the quality of that impact.

The Software will be used in two stacked (undergraduate/graduate) courses described below.

ENRG/ESCI 466 -- Life Cycle and Net Energy Analysis -- Offered Fall Quarters, this class has an enrollment cap of 40 students. Students will use the software at minimum 4 hours per week for 10 weeks (40 hours). They will use the software to calucalate the energy required to and greenhouse gases emitted.

### **III. Impact on Existing Resources**

Your proposal must address the project’s potential impact on existing resources. Give special attention to the impact on data transmission networks (e.g., sources accessed, networking equipment, etc.) and personnel (e.g., staffing, administrative support, faculty support, etc.).

1. Describe how existing equipment is used. Contrast this to projected use, if your proposal were funded.

This software and database will need to be 'seated' on machines that access a license file. I envision 5 seats in the Energy Lab (ES-310) aka 'The Joule Box'. I envision the remaining 35 seats to facilitate classes that will use this software to be 'seated' in a campus computer laboratory. The SAL (Spatial Analysis Lab) would make a good fit but that is a highly booked room. I have begun constructive communication with CENV Dean, Teena Gabrielson, regarding CENV lab access. General Computing Labs such as HH233 with 40 seats would also be a good fit. Many options exist throughout campus.

1. Is similar equipment or technology available elsewhere on campus—such as with the Student Technology Center, Classroom Services, Video Services, Western Libraries, a college lab? Enter “No or “Yes”. No

IF “Yes, describe why existing equipment does not meet the needs outlined in this proposal. IF “No,” enter “N/A”.

N/A

1. IF this project would involve the replacement of equipment, including computers:
2. Describe the “before and after” configuration changes. (A spreadsheet reflecting these changes may be attached.) Or enter “N/A”.

N/A

1. Describe the costs and benefits of replacing vs. upgrading. Or enter “N/A”.

N/A

1. Would this equipment be available to students outside of your department? Enter “No” or “Yes”. Yes

IF “Yes,” describe the following (in the field below the a-d list). IF “No,” enter “N/A”.

1. How students would gain access.
2. How equipment availability would be publicized.
3. The hours per week when equipment would be available.
4. Any costs that would result from a-c.

The software would simply be executable on the machines with access to the license file. Software will be publisized by CENV and IES as well as the Energy Tool Lending Library.

1. Would this project involve the check-out of equipment to students? Enter “No” or “Yes”. No

IF “Yes,” discuss whether the Student Technology Center/ATUS Loan Pool could be assigned this task. IF “No,” enter “N/A”.

N/A

1. Does the department have adequate operating funds to provide ongoing maintenance and support? Enter “No” or “Yes”. Yes

IF “No,” describe the funding situation. IF “Yes,” enter “N/A”.

N/A

1. Does the department have adequate personnel to provide ongoing staff support for the project? Enter “No” or “Yes”. Yes

IF “No,” describe the staffing situation. IF “Yes,” enter “N/A”.

N/A

### **IV. Space and Site Information**

1. What is the location for installation of equipment or technology? Be as specific as possible.

As mentioned above, This software and database will need to be 'seated' on machines that access a license file. I envision 5 seats in the Energy Lab (ES-310) aka 'The Joule Box'. I envision the remaining 35 seats to facilitate classes that will use this software to be 'seated' in a campus computer laboratory. The SAL (Spatial Analysis Lab) would make a good fit but that is a highly booked room. General Computing Labs such as HH233 with 40 seats would be a good fit. Many options exist throughout campus.

1. Is this space/location currently assigned to your department or unit? Enter “Yes” or “No”. No

IF “No,” describe the current control of the space. IF “Yes,” enter “N/A”.

The 5 lab seats are assigned to ENRG. The SAL is assinged to CENV and general labs are operated by ATUS.

1. Would site modification be required? Enter “No” or “Yes”. No  
   Note: “Site modification” addresses site alteration—beyond specific equipment installation addressed in section V, Budget Estimate Table, line 13. Site modification significantly impacts infrastructure. This could include addition/integration of other systems required by the equipment install, such as electrical, air, lighting, security, network access, etc.; conversion of a lab or office; etc.

IF “Yes,” describe the site modification required. IF “No,” enter “N/A”.

N/A

1. Conditional Step 4: If you answered “no” to #2 above, or “yes” to #3 above:

You *may* need to submit a [Space Modification Request](https://app.e-builder.net/public/Processes/StartProcess.aspx?ProcessID=849829b0be0d47c4b6e270345a265b73&PortalTypeID=7) to Capital Planning and Development. The STF Committee will determine if this is necessary during proposal review, and will let you know. The results of the Space Modification Request form would affect lines #15 and #18 of the Budget Estimate Table.

### **V. Project Budget Estimate**

This section details the estimated cost of the project.

Budget Estimate Notes:

1. The STF Committee recognizes your proposed budget as an estimate. Final funding for successful projects will be established after thorough technical review. Some costs may need adjusting due to price changes.
2. The STF Committee may impose special conditions on a proposal before approval. (If interested, see *STF Tech Initiatives Proposal Guidelines, section V, Proposal Modifications*. This document is on the STF website.)
3. Funding is not provided directly to departments for purchases. All purchasing is done via the Office of the VPIT/CIO, and savings are retained in the Student Technology Fee fund.
4. For assistance in preparing your budget, please consult with relevant campus support departments. Four are listed here:

* Academic Technology & User Services (Director), 650-6538
* Budget and Financial Planning Office, 650-4762
* Space Planning and Administration Program Manager, 650-3935
* Purchasing, 650-3340, [Getting Started in the Western Marketplace](https://www.wwu.edu/bservices/purchasing/software.shtml)

1. What funding or contributions are available from your department or other sources? Enter dollar amount, or “N/A”. N/A

Note: The STF Committee encourages matching funds/funding support. “Contribution” is defined as a monetary contribution. For example, a vendor discount is not considered a contribution.

1. *IF you have more than seven line-item expenses,* create a separate spreadsheet of items to purchase, with a subtotal. (You will attach the spreadsheet to this form later, before submitting.)
2. Complete the **Budget Estimate Table** below.

**IMPORTANT:** To complete the Budget Estimate Table (an Excel sheet) within this form, follow these substeps:

1. Double-click anywhere in the table:
   1. For Macs, the table will open in a new window.
   2. For PCs, the table will open in place.
2. Complete the blue-shaded areas only. The remainder of the form will autofill.
3. *IF you have more than seven line-item expenses*, key the “Items to Purchase” area of *this* Budget Estimate Table as follows:
   1. Item to Purchase: “Subtotal from attached spreadsheet”
   2. Quantity: “1”
   3. Item Cost: [the subtotal from the attached spreadsheet]
4. To exit the table area of this form, single-click anywhere outside of the table.



1. Could this project be divided into discrete elements that could be funded separately? Enter “No” or “Yes”. No

IF “Yes,” summarize and prioritize project elements with a cost estimate for each. IF “No,” enter “N/A”.

N/A

Note: A “no” response to question 3 creates an “all or nothing” proposal. That is, if the STF Committee decides not to fund your entire proposal, it will not consider any elements for partial funding. If elements could be funded separately, the applicant is responsible for prioritizing them before submitting the proposal.

1. Are course or lab fees charged for any of the courses that will use this equipment? Enter “No” or “Yes”. No  
   Note: The total funding requested from the Student Technology Fee must consider the amount collected from course fees for equipment replacement and/or equipment acquisition.

IF “Yes,” describe the course fees. IF “No,” enter “N/A”.

N/A

### **VI. Project Schedule**

Describe your overall implementation schedule. Note that project awards are announced during spring quarter (usually May), and that projects are to be substantially completed by the end of the calendar year.   
IF any site modifications are determined to be involved (see section IV, Space and Site Information), your project schedule will be aligned with the schedule provided by Capital Planning and Development.

Upon Funding--Complete Long Trail Sustainability ordering form (attached on eform and available upon request) for SimaPro LCA software and Ecoinvent LCI database. Pricing as of March 31, 2024 is $8750.

Summer 2024--Install software and implement licence file. Establish seats for software in the Energy Lab. Estabish seats in a computer lab in preparation for Fall quarter 2024. Introduce software and data to graduate students. Publicize software access in collaboration with CENV, IES and ATUS websites.

Fall 2024--Excitedly teach ESCI/ENRG 466 with fresh implentation of LCA software and data.

### **VII. Constraints**

List or describe any external or internal factors/constraints that could affect your project schedule, project objectives, or the project budget (e.g., if external approval is required for curricular changes, or if funding must be received by a certain date.)

N/A

### **VIII. Submitting the Proposal / Routing Instructions**

1. Access the e-form [Student Tech Fee Proposals: Routing Form](https://esign.wwu.edu/forms/CIO/_student_tech_fee_proposals_routing_1.aspx) and complete the form as instructed.
2. Attach this completed proposal form to the completed e-form.
3. Attach any supporting materials for your proposal to the e-form.
4. Route the e-form as instructed.