

**2011-2013 OUS Agency Request Budget
Engineering & Technology Industry Council (ETIC)
Policy Package Proposal
5/05/2010**

Title: ETIC Proposal to Make Sustainable Engineering a Strategic Priority

Agency Request, 2011-2013:

General Fund Request	\$ 12,000,000
Required private support	\$ 12,000,000

Overview

This proposal focuses in a single area: sustainable engineering as described below. Monies allocated to this proposal will be used to establish an ETIC Matching Fund as described below.

Description of Proposed Investment:

ETIC has gone through a strategic planning process that considered a variety of engineering education and research opportunities. When ETIC considered which areas should be selected for its growth strategy it used several criteria. The ideal areas of investment are characterized by

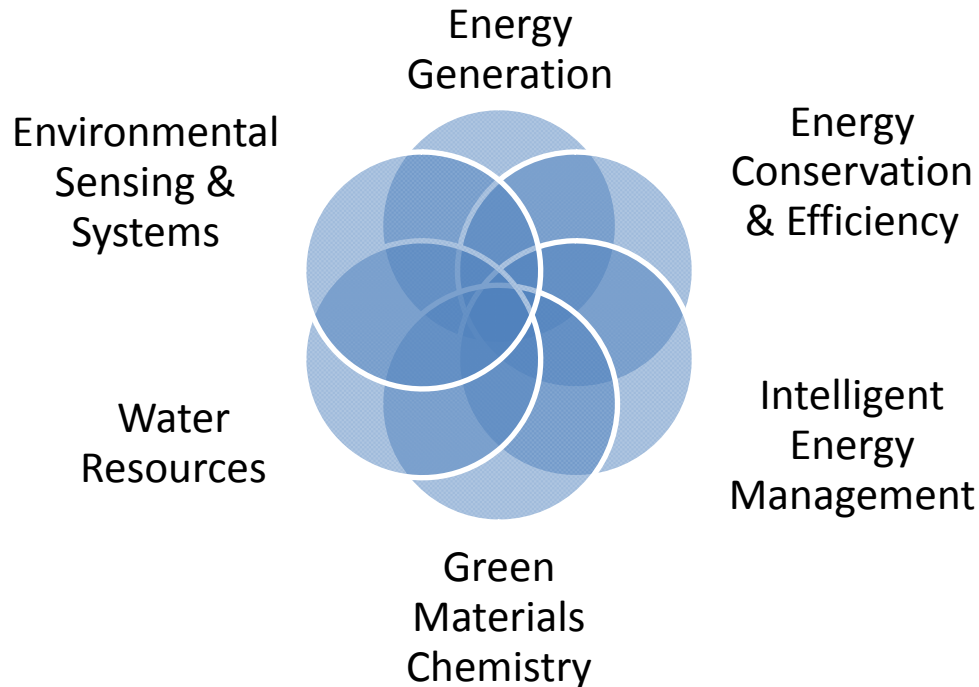
- Leveraging existing expertise and providing opportunity to grow this expertise
- Providing opportunity to collaborate with other Oregon campuses and/or industry partners
- Aligning with existing or emerging industry strengths in Oregon
- Providing opportunity to create a center that will be nationally and globally competitive, attracting the best faculty and the best students
- Aligning with federal funding priorities and opportunities
- Leveraging other strengths unique to Oregon

From these criteria ETIC has established a series of three priorities for investing in engineering education and research: (1) Sustainable Engineering, (2) Neuro Engineering, and (3) Cyber Security. While ETIC believes that all three of these areas represent important opportunity areas for Oregon residents and businesses, at this time ETIC is proposing to focus in the single of highest priority: **Sustainable Engineering**.

Sustainable Engineering includes six sub-categories:

- Energy Generation: Technology that produces electrical and other energy with a minimum carbon footprint
- Energy Conservation & Efficiency: Technology that reduces energy waste and increase efficiency of energy conversion
- Intelligent Energy Management: Technology that allows for improving supply and demand balance
- Green Materials Chemistry: Technology that creates materials with minimum environmental impact

- Water Resources: Technology that increases the supply of clean water and minimizes the environmental impact of waste water treatment
- Environmental Sensing & Systems: Technology that monitors environmental impact and creates systems that make maximum usage of resources with minimal environmental impact.



ETIC has conducted an inventory of existing and potential expertise among the eight ETIC campuses in these sub-categories. While the depth and breadth of expertise varies from campus to campus, all the campuses have both strengths and opportunities that fit the sustainable energy strategy.

To seize this strategic opportunity in a time of extremely restricted state resources, ETIC proposes to reverse its normal investment process. Historically, the ETIC campuses have prepared investment proposals that include forecasts for private support and then asked the state to appropriate an increased investment level first and the campuses have made best efforts to secure the private support that they have forecasted. In most cases they have exceeded the forecast but the Legislature was not provided an advance guarantee that they would do so. In this proposal ETIC proposes that increased state monies associated with this proposal be deposited in a Matching Fund and that these funds be distributed to the campuses only as the forecasted private support is received.

Description of Operation of Matching Fund:

- (1) Monies appropriated for this package will be deposited into a Sustainable Engineering Matching Fund account and not released to the campuses until they are matched by private grants and donations.
- (2) To qualify for a match such grants and donations must meet the following criteria:
 - (a) They must conform to the ETIC Private Support Policy dated 1-23-02.

- (b) Only cash grants and donations will be counted.
 - (c) Grants and donations for scholarships and fellowships will not be counted.
 - (d) They must be restricted for use for specific educational and research projects or programs that meet the definition of sustainable engineering above.
 - (e) They must be received by a college of engineering, computer science department, or material science program that has historically received support under the ETIC program.
- (3) Private support that conforms to the criteria in paragraph (2) and received between July 1, 2011 and June 30, 2013 shall be eligible to be matched from the Matching Fund.
- (4) Qualifying private grants and donations will be matched from the Matching Fund at no more than dollar for dollar. The actual match ratio will be calculated using the following formula for each participating ETIC Campus:

$$\text{Match ratio} = \frac{\text{Current Biennium Private Support}}{\text{Current Biennium ETIC State Dollars}} \text{ or } 1.0 \text{ whichever is less}$$

Where

Current Biennium Private Support are funds received between July 1, 2009 and June 30, 2011 that are consistent with the ETIC Private Support Policy dated 1-23-02.

Current Biennium ETIC State Dollars are General Fund dollars allocated to the campus under the ETIC program between July 1, 2009 and June 30, 2011.

- (5) While it is ETIC’s intention that one of the outcomes of these investments is an increase in federal research grants, such grants will not be matched by the Matching Fund. They will however be included in ETIC’s metrics for externally funded research.
- (6) Monies from the Matching Fund shall be used for one-time expenses only.
- (7) The monies in the Matching Fund should be divided into equal portions:
 - (a) Half will be reserved for matching by particular campuses using the following allocation table. This will allow the campuses to recruit private dollars for sustainable engineering education and research in confidence that state dollars in the Matching Fund will be available as they secure the private dollars.

Campus	Reservation
Eastern Oregon University	Pool*
Oregon Institute of Technology	5%
Oregon State University	50%
Oregon Health & Science University	Pool*
Portland State University	20%
Southern Oregon University	Pool*
University of Oregon	15%
Western Oregon University	Pool*
Pool	10%
Total	100%

*The pooled funds will be available only to the campuses marked with “Pool” in the reservation percent column and will be available on a first-come-first-serve basis to these campuses.

- (b) Half will be unreserved and be available on a first-come-first-serve basis for any of the above campuses that receives enough qualifying private dollars for sustainable engineering to exceed the amount reserved for them above.
- (8) Any money of type 7(a) that has not been matched by a campus by the end of the 7th quarter of the biennium may become type (7)(b) money and be available on first-come-first-serve basis including any qualifying private funds received by the end of the 7th quarter and not yet matched from the Matching Fund.

Need for the Investment and Resulting Benefits and Value:

Oregon has reached a consensus that sustainability is its main economic development strategy. From the Oregon Business Plan¹ to the Governor's office, Oregon's leaders see the combination of natural (wind, wave, geothermal) and industrial (solar, wind) assets together with our nation's strategic need for larger and local sources of clean energy as a unique opportunity for Oregon. To seize this opportunity Oregon needs to grow its existing strengths in sustainable engineering education and research to produce work-ready engineers and research that will support the growth of these industries.

Connections to Boards Goals:

When it created its Sustainability Initiatives Committee in November 2008, the Board set the goal of making the Oregon University System (OUS) "a recognized international leader in sustainability." Funding this proposal will allow the OUS to take big step in that direction.

Expected Outcomes:

- Significant increases in the number of graduates who are ready to make key contributions to sustainable industries as well as industries that create products and services that focus on sustainability.
- Increases in the depth and breadth of sustainable engineering research enhancing the competitiveness of existing sustainable industries and making Oregon more attractive to companies considering setting up development and deployment businesses in Oregon.
- An 81% increase in the number of work-ready graduates available to Oregon industries by 2020 vs. ETIC's baseline year of 1999.
- A 279% increase in the amount of federally funded research serving as a source of innovation for Oregon's clusters by 2020 vs. ETIC's baseline year of 1999.
- Increasing the global competitiveness of Oregon's sustainable engineering education and research programs and thus Oregon's industries.

Performance Indicators:

- Engineering and Computer Science Degrees (KPM #18²)
- Externally Funded Engineering & Technology Research (internal ETIC indicator)

¹ See page 13 of Oregon Business Plan Policy Playbook at <http://www.oregonbusinessplan.org/pdf/2008%20OBP%20POLICY%20PLAYBOOK,%20INITIATIVE%20AND%20CLUSTER%20GUIDE-FINAL.pdf>

² KPM refers to Legislatively Adopted 2009-11 Key Performance Measures. Engineering and Computer Science Degrees is one of 30 such Measures.

Tables:

	Faculty During Biennium	Staff During Biennium	Total
ETIC-funded FTEs	86	35.5	121.5
New Positions	6	5	11

Total Degrees		
Academic Year Ending June	CSL	Policy Option Package
1999 Actual	1,157	
2009 Actual	1,433	
2015 Forecast	1,752	1,842
2020 Forecast	1,944	2,091

Externally Funded Research -- \$ million		
Academic Year Ending June	CSL	Policy Option Package
1999 Actual	\$33.2	
2009 Actual	\$62.2	
2015 Forecast	\$84.0	\$101.1
2020 Forecast	\$103.8	\$126.0