

**Energy Resources Council (ERC)**

**MINUTES**

**May 23, 2019**

**ITC Center**

**Gillette, Wyoming**

**CALL TO ORDER:**

Chairwoman, Cindy Crane, called the meeting to order at 8:42 AM.

**ATTENDANCE:**

**ERC Members Present**

Cindy Crane, WY Senator James Anderson, Carl Bauer, WY House Representative Mike Greear, Tom Botts, Jeane Hull, Dave Emery, Dave True, and Vello Kuuskraa.

**ERC Members Absent**

Laurie Nichols, Rob Wallace, Mindy Benson and Eli Bebout (alternate).

**SER Staff in Attendance**

Mark Northam, Trish Steger, Rachel Ferrell, Richard Horner, Scott Quillinan, Steve Carpenter, J. Fred McLaughlin.

**Members of the Public**

Jim Ford and Jason Beggar

**MEETING ITEMS BY DETAIL:**

**Approval of Agenda**

*Action:* A motion was made by Senator Anderson to accept the agenda as presented. Mr. Kuuskraa seconded it. Motion passed without objection.

**Approval of April 2019 Minutes**

*Action:* A motion was made by Senator Anderson to accept the minutes as presented. Ms. Hull seconded it. Motion passed without objection.

## **SER Budgets** (Full report available upon request)

*Summary:* The operating budget is on target for full expenditure with the final \$400K encumbered. All remaining funds from FY19 will roll over into the FY20 budget. The budget is balanced for FY20 with approximately 50% going toward SER operational budget and 50% intended for various colleges and departments across UW campus. Dr. Northam provided a brief presentation based on his FY20 Budget report to the UW BOT. A full copy of this report is available upon request. Interim UW President, Neil Theobald is aware of the new budget requests and has agreed to offer support. He will continue to meet with Dr. Northam on a monthly basis. His support has already been generous in working with SER's issues with the WyoCloud system. ERC members encouraged Dr. Northam to keep new legislators apprised of the changing requests for funding and the need to remain focused on SER's changing mission and strategic plan. It will be necessary to emphasize how SER's work will enhance research across the university.

*Tasks:* Update the SER Strategic Plan and provide a breakout chart of SER dollars and the impact throughout the UW Campus and across the State of Wyoming.

## **Carbon Engineering**

*Summary:* The current thrust of carbon engineering projects is to start to transfer proven technology solutions out of the laboratory and into practice. Emphasizing and building on previous remarks made by Dr Mark Northam concerning the biennium budget request for FY 2021-22, Richard Horner described the most promising technology solutions that have emerged from the carbon engineering to date, which included:

1. The project led by Dr Pete Stahl and Dr John Oakey, which in concert with local Wyoming Agricultural industry was preparing to conduct a 50 ton demonstration of a 100% coal derived soil amendment and nutrient product in various Wyoming locations early next Spring;
2. The construction of pilot plants to further develop scale up information for two processes that are critical to commercializing a PRB fed coal refinery in Wyoming and have been proven in the laboratory. Both the processes developed by Dr David Bell (thermo-chemical deliberate decomposition of PRB Coal) and Dr Jing Zhou and Dr Joseph Hollis (combined (dry) reforming of CO<sub>2</sub> and methane) have been the focus of patent prosecution and protection as the founding platform to realize this vision and importantly permit the product of coal based carbon products with virtually zero carbon footprint;
3. The demonstration of coal derived high performance building materials through the construction of a small building on campus in collaboration with a local engineering company. This project has been led by Dr Gang Tan;
4. The scale up and performance evaluation of coal derived road paving materials that have been developed in the laboratory, are subject to patent protection and formulations devised to permit field evaluation, with support from a local road asphalt supply company;

5. Third party support to Clean Coal Technologies Inc – CCTI, an emerging technology showcase for beneficiating PRB and improving its energy content (btu) value in Gillette (Fort Union field- site location).

Mr. Horner emphasized that to transfer and move emerging and promising technologies from the laboratory and closer to commercialization was critical to the next stage of carbon engineering derived technology deployment and that the higher costs of demonstrating technology in field environments (relative to laboratory testing) was necessary to attract and excite businesses and investors to become stakeholders in the Wyoming coal refinery. Stepping up the State investment into the tens of million dollar range from the few million dollars funding through the next biennium, was therefore essential to move the technology development feature of the carbon engineering program progressively forward. Such financial commitment by the State would signal to potential non-state private industry stakeholders to similarly take a vested (financial and business) interest in Wyoming's diversification opportunities – in this case the appeal of cheap, abundant high quality resident coal resources.

**Presentation – Integrated Test Center (ITC)** (Full report available upon request)

*Summary:* Jason Begger presented to the council an update on the ITC. Current tenant support and operations include Efficient Fuels Additive, LLC. (EFA), a technical and operations contractor, Hladky Construction, a site services contractor, the Environmental Protection Agency (EPA)/ Department of Environmental Quality (DEQ), and Wyoming Infrastructure Authority (WIA). Membrane Technology and Research (MTR) has a successful CO<sub>2</sub> capture research portfolio. The University of Kentucky (UK) uses a solvent-based CO<sub>2</sub> capture system. MTR and UK both have funding from U.S. Department of Energy for phase I and is collaborating with Wyoming ITC for phase II and III of the project. TDA Research is a skid-based hybrid membrane/sorbent test system that will begin testing June 2019. There have been several meetings since July 2016 to the present between the state of Wyoming, UW-SER, Japan Coal Energy Center (JCOAL), Kawasaki Heavy Industries (KHI), Japan Ministry of Environment, and US based EPC firms (Engineering, Procurement, and Construction). XPRIZE is a competition that will grant space for new testers such as Breathe, led by Dr. Sebastian Peter, whose team is producing methanol using a novel catalyst, among other scientific researchers. For better business development, active over passive recruitment process is encouraged, as is engaging with researchers and stakeholders. A better relationship with the International Carbon Capture Test Centre Network and the National Carbon Capture Center are also a few of the items on the list of improvements that can be made for business development. Those involved in coordinating these opportunities include UW-SER, Center for Economic Geology Research, Enhanced Oil Recovery Institute, Wyoming Integrated Test Center, Wyoming Corridor Initiatives, and ENDOW. Currently there is a congressional delegation developing policy on AML, 45Q, and the USE IT Act. At the state level, there can be incentives and rules for UW-SER, International Organization for Standardization (ISO), Public Service Commission (PSC), and National Association of Regulatory Commissioners (NARUC). New financing options include foundations with high technology and sovereign wealth funds.

Additional steps would be to explore alternative financing mechanisms, finalize business and operations plans, gain additional tenants, and to improve current partnerships

### **Presentation – Advanced Carbon Products Innovation Center (ACPIC)**

*Summary:* Phil Christopherson was not available to present so Jim Ford stepped in to provide a brief update on ACPIC. Currently located in the Union Industrial Park, ACPIC has three tenants: Atlas Carbon, ACPIC is seeking a business-ready grant through the City of Gillette in the amount of \$3.7M – 4.2M. They will present to the Wyoming Business Council on June 3 and June 4, 2019. If successful in their presentation, funding should be available by July 1, 2019 and land purchase could take place as early as mid-July 2019.

### **Center for Energy Policy & Economics** (Full report available upon request)

*Summary:* The new Interdisciplinary Energy Policy Initiative will consist of an interdisciplinary organization to help develop and integrate effective and pragmatic energy policies and strategies that benefit the region, state, and the nation. The organization will: (1) support policymakers, decision-makers, and scientists within and outside of the UW community; (2) form a conduit for UW research that can directly benefit Wyoming's policymakers, citizenry, and economy through effective policy development and assessment; and (3) communicate results via publications, briefings, etc., including an annual symposium with published proceedings. Applied research will be conducted initially under two tracks: (1) one focused on the State of Wyoming and the rest of the western states to respond to low-carbon policies in existing markets; and (2) another track focused on developing national and international policy to do the same while also creating the widest range of options possible to address low-carbon policies.

Energy regulation research studies from collaborators across the UW campus are underway on the following topics: Renewable energy portfolio standards, environmental regulations affecting the coal industry, regulation of oil and gas, regulations affecting international trade in energy, regulations affecting investment in energy infrastructure and policy analyses.

Mr. Coddington spoke to the various policy support offers to the SER and the State of Wyoming. He also has held several informal consultations, public speaking engagements, policy-related meetings and collaborations, as well as lectures and curriculum development. A full list is available in the ERC Notebook May 2019.

### **New Business:**

*Summary:* A meeting was held with new Governor Gordon. The Governor has appointed Randall Luthi as his new Chief Energy Advisor. SER will ensure engagement with the new advisor and begin to secure support for the SER budget requests for the upcoming year. It is also anticipated that SER will hold quarterly meetings with Governor Gordon. An agreement outlining the process

for the executive search has been signed by UW BOT Chairman-Dave True, UW President-Laurie Nichols, ERC-Chairwoman-Cindy Crane and ERC-Vice Chairman- WY Senator Jim Anderson. The Search Committee members have all received their charge letters and a first meeting is planned for June 10, 2019. A budget has been agreed upon and will be paid by the UW Provost and SER. The position description and a candidate brochure are under development and a short list of four search firms has been decided. A meeting was held with the UW Provost to discuss the search process agreement. SER committed to an efficient, legal search and agreed the UW Provost will be involved at some point in the interviewing process. Chairwoman Crane will be meeting with the interim UW President, Neil Theobald to bring him up to date on the process for the search. Mr. True encourage Chairwoman Crane to keep the UW BOT abreast of the process as it went along pursuant to UW regulation 1-102P. Ms. Samantha Velez was introduced to the ERC. Ms. Velez has been hired as the SER Outreach Coordinator.

**Adjournment**

Representative Greear motioned for the meeting to adjourn. The motion was seconded by Ms. Hull. The meeting adjourned at 11:40 PM. All interested members were encouraged to take a brief tour of the ITC and the Dry Forks Station.

Respectfully submitted:

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Cindy Crane  
ERC Chairwoman

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WY Senator, Jim Anderson  
ERC Vice Chairman