

## **Energy Resources Council Meeting**

Approved Minutes

March 28, 2014

Energy Innovation Center

8 a.m. – noon

### **CALL TO ORDER:**

The meeting was called to order at 8:02 a.m. by Chairman Paul Lang.

### **ATTENDANCE:**

#### **ERC Members Present**

Paul Lang, Tom Lockhart, Carl Bauer, Tom Botts, Jim Anderson, Cindy Crane, Jeane Hull, Indie Burke and David Emery (via phone).

#### **ERC Members Absent**

Rob Wallace, Dick McGinity, David Palmerlee

#### **SER Staff in Attendance**

Mark Northam, Mary Byrnes, Diana Hulme, Don Roth, Rob Hurless, Abby Scott, Trish Steger, Pam Henderson

#### **Others Attending**

Chris Spooner, Richard Horner, Don Collins, Jay Puckett, Khaled Gasem, Wendy Lowe, Michael Urynowicz and Chilton Tippin

### **AGENDA:**

- 1) New Members and Staff Introductions
- 2) Approval of Agenda
- 3) Approval of Minutes - November 15, 2013
- 4) Legislative Update
- 5) Integrated Test Center and LNG Study
- 6) Council Relations—Communications
- 7) Division Updates
  - A) Outreach
  - B) Research
  - C) Academics
- 8) Presentation—Center for Biogenic Natural Gas Research
- 9) Nielson Fellowship
- 10) Financial Overview
- 11) High Bay Research Facility
- 12) College of Engineering Tier 1 Implementation
- 13) Executive Session

- 14) CMI Update
- 15) Barriers to Export Coal Study
- 16) New Business
- 17) Adjournment

## **MEETING DETAILS BY ITEM:**

### **New Members and Staff Introductions**

*Summary:* Chairman Lang welcomed returning board member Jeane Hull and new board member Cindy Crane. SER Director Northam introduced Trish Steger as the new executive administrative assistant and Richard Horner as the new College of Engineering and Applied Science Tier 1 program coordinator.

### **Approval of Agenda**

*Suggestion:* SER Director Northam requested item #5, Integrated Test Center and LNG Study, be removed from the ERC agenda and placed on the ACCTF Agenda.

*Action:* A motion was made by Vice Chairman Lockhart to accept the agenda with the change and seconded by Mr. Bauer. Motion passed without objections.

### **Approval of Minutes - November 15, 2013**

*Action:* A motion was made by Vice Chairman Lockhart to accept the minutes from the November 15, 2014 meeting as presented; action seconded by Mr. Bauer. Motion passed without objection.

### **Legislative Update**

*Summary:* Mr. Hurless provided a detailed overview of House Bill 0001, page 12 ERC Notebook. SER will not be directly responsible for the Tier 1 Engineering initiative or the Engineering building renovation and expansion, but nonetheless would still be called upon for advisement. This would also hold true for the Integrated Test Center. The final list item, \$100,000 originally designated for a glass manufacturing study, reverted to be repurposed per the Mineral committee's request.

*Comments:* SER Director Northam further explained that there were no changes to the SER operating general fund other than the planned \$620,000 reduction. Vice Chairman Lockhart clarified that the committee decided to repurpose the \$100,000 set aside for the glass manufacturing study because there was not an apparent benefit for the state. Both Vice Chairman Lockhart and Sen. Anderson commented that the House and the Senate were very supportive of SER efforts especially in regard to the future of Wyoming, the betterment of the University of Wyoming and the economic impact for the state.

*Action:* None

## **Council Relations-Communications**

*Summary:* Ms. Steger requested all board members review the address list and point of contact information provided on pages 25-26 of the ERC Notebook and to clarify with her any corrections, deletions or additions. She further indicated to the board that any changes or suggestions related to the ERC board meetings or board communications would be welcomed.

*Comments:* Ms. Byrnes noted that the Board Address List was made public by its inclusion in the ERC Notebook.

*Action:* None

## **Division Updates:**

### **Outreach**

*Summary:* Ms. Byrnes reported on the trip to Brisbane, Australia for the International Advanced Coal Technology Conference. Eight students participated, as well as, several UW presenters. A full report and copies of the presentations will be available on the SER website. Of special note was the non-binding agreement with the Commonwealth Scientific and Industrial Research Organization (CSIRO), which was signed as this is a first step toward partnership in the areas of intellectual exchanges and research scientist collaboration on projects of mutual interest. Governor Mead also attended and was taken on a tour of the port in Gladstone, Queensland, which provided an excellent understanding of coal conversion processing and facilities. The governor was also able to meet with the premier of Queensland, members of parliament, Peabody Energy, LINC Energy, WellDog and economic officers from the U.S. Embassy.

The Wyoming Infrastructure Authority stakeholder meeting was held at the Holiday Inn in Laramie on March 27, 2014. Sen. Phil Nicholas provided an excellent overview of Legislative actions, SER Director Northam discussed SER activities and Dr. Rob Godby spoke about wind energy economics.

A joint venture with the College of Law will feature a panel discussion regarding abandoned CBM wells in Wyoming. This event is planned for April 10, 2014.

The Distinguished Speakers Series will host Tom Konrad – “How the Financial Market Shapes the Energy Economy,” and Dr. John Kaldi – “Carbon Capture and Storage: What Are the Big Issues and Opportunities for the Petroleum Industry?” The final speaker for the month will be David Emery.

SER is working jointly with CMI on the Ron Surdam’s retirement and CMI technical symposium to be held April 17, 2014.

Upcoming events currently in the planning stage include the November Energy Law Conference and the August Clean Coal Symposium.

*Comments:* Mr. Bauer informed the board of the mutual benefits to be gained from the memorandum of agreement (MOA) with CSIRO and the possibility of seeking private funds to support the collaborative research. Vice Chairman Lockhart asked if SER had visited West Port Terminal in Canada and if the Chinese partners had also attended the conference. SER Director Northam stated that a visit had not taken place within Canada. Ms. Byrnes confirmed that SER partners from China were in attendance.

*Action:* None

## **Research**

*Summary:* Ms. Hulme reported that she has met with all eight Centers of Excellence and finalized the MOA as well as to discuss new proposals and budgets for the upcoming biennium. The Wind Energy Research center will be terminated as a center under SER as of July 1, 2014; the center has not been able to perform to the necessary standards. SER has met with the center to discuss ways to reintegrate into the SER should they make that decision. The Center for Economic Development and Public Policy has been approached to be more inclusive of additional divisions within the university and to provide more economic development data and models. The center is currently being challenged to provide requests for proposals (RFPs) pertaining to economic impact on natural gas supply and low-carbon energy technologies. It is SER's hope that this will re-energize the center and move it forward. All other centers seem to be on track in terms of performance.

In conclusion, Ms. Hulme announced the In Situ Uranium Research symposium will be held in May and the new drilling simulator has been installed on the second floor of the Energy Innovation Center. She encouraged anyone interested to visit the new lab.

*Comments:* Mr. Botts inquired as to whether support of the Wind Energy Research center would be picked up at a department level within the University of Wyoming, and if there was still consideration to have the wind tunnel in the High Bay Facility. SER Director Northam assured the board that most likely it would receive support from the university and that there were no current plans to house the Wind Energy in the High Bay facility initially, but it could be considered for the second expansion. Sen. Anderson advised the board the legislative bodies have a great interest in investment and return. It is critical to make connections between the technology and the economic outcomes. He urged SER to continue to seek those types of research that can provide the economic data that supports the benefits to the state of Wyoming. Vice Chairman Lockhart reiterated this point of view.

Ms. Crane asked about the timing of the RFPs. SER Director Northam responded that the first one is under way and the second would be in the next six months.

Dr. Northam also announced that Dr. Mohammad Piri was recently awarded the Wyoming Excellence Chair in Petroleum Engineering, recognizing his innovative research in recovery of oil and gas from conventional and unconventional reservoirs. Dr. Piri's research has enhanced both the reputation of SER and the University of Wyoming significantly.

*Action:* None

## **Academics**

*Summary:* Dr. Roth opened his report by announcing Dr. Maohong Fan, professor in the Department of Chemical and Petroleum Engineering, has been nominated for the Distinguished Graduate Faculty Mentor Award. Dario Grana, Jack Dvorkin, Mario A. Gutierrez have recently published **Seismic Reflections of Rock Properties**, which is a noteworthy academic contribution. There has been significant growth in student enrollment which Dr. Roth attributed to the Landman program. The program, which is noted for its dual emphasis on law and energy, has received national

accreditation and is being modeled by others. The curriculum continues to be interdisciplinary and workforce focused. SER has had approximately 20 graduates and most have been hired by industries. The Capstone course and the Distinguished Speakers Series continues to be a huge success in assisting students with understanding the real needs of the industries that could be their future employers. The internship program has also provided excellent benefits. Currently, two of the three interns have been hired to work for the companies that brought them in as interns. The summer K12 program, which was initiated by a \$100,000 donation from Exxon Mobile Corp., will again be offered this year.

There is an international search ongoing for the faculty positions in geomechanics, petroleum systems and catalysis. The first search did not yield quality candidates due to market competition. The search will continue until appropriate candidates are identified and, if necessary, a headhunter will be contracted to assist with the search.

*Comments:* SER Director Northam restated the difficulty in acquiring quality candidates and the inability to retain quality staff. Therefore aggressive recruiting must take place. It has been agreed that a contractor is needed to take over the recruitment efforts for the next several years as approximately 25 positions are currently identified to be filled. Mr. Bauer inquired if there was the possibility of requesting assessment of student hires and Dr. Roth responded that the companies have already been very forthcoming in regard to the student interns.

A question was raised regarding why nearly 17 of the students have undeclared majors. Dr. Roth responded that this is a common occurrence. Students enroll in SER programs, but are often undecided which area to pursue until the last two years, when they specialize. Dr. Burke asked if there was a trend for engineering students to be moving into the SER programs and if so, why this was happening? Dr. Roth explained that students are trying to find their individual fit and sometimes as they are exposed to other specialized areas they change their minds or want a broader curriculum. This is often the case with the Landman program and projections indicate that it will continue to grow. It is anticipated that the in the near future enrollment could more than double.

*Action:* None

### **Presentation – Center for Biogenic Natural Gas Research**

*Summary:* Dr. Michael Urynowicz, Center for Biogenic Natural Gas Research, provided a PowerPoint presentation update on the center's project, activity and its ability to attain self-sufficiency by transitioning the funding of the center from grant funding to self-sufficiency through technology commercialization.

*Comments:* SER Director Northam offered his commendations and stated that the Center for Biogenic Natural Gas Research was a great model for developing licensing agreement with the university and bringing funds back to the centers. This center achieves all of the goals envisioned when the centers were developed and is a wonderful example of successful operation. The board engaged in a robust discussion regarding the technology and availability of the technology. Both Sen. Anderson and Vice Chairman Lockhart felt this presentation should be made available to the legislators. Vice Chairman Lockhart suggested the presentation take place during its June meeting to provide a better understanding of the continued benefit of closed wells and to provide this

information to landowners. Mr. Botts spoke specifically to the licensing agreement and how this mechanism would be groundbreaking for future companies coming out of the centers.

*Action:* Dr. Urynowicz was asked to add the Wyoming Legislature to the list of partnerships.

### **Nielson Fellowship**

*Summary:* The current situation at the University of Wyoming poses huge challenges in its ability to retain key faculty. A recent study conducted by Dr. Bill Gern demonstrated nearly a \$10 million loss to the university due to the departure of valued staff and indicated the importance of putting an end to this activity. It is SER's intent to use funding from the director's discretionary funds to create faculty fellowships, which can be offered as a pre-emptive retention incentive to at-risk staff who could be recruited elsewhere. Dr. Northam spoke briefly on the background of the Neilson Fund, which created the Director's Discretionary Fund. These funds have been used primarily to provide the Neilson student scholarships and specialty projects. The fund has grown significantly and continues to produce additional funding. It is the additional funding that will be used for the fellowships. A policy is currently being drafted to govern the process of review and award of the fellowship to ensure integrity and transparency are addressed throughout the process.

*Comments:* Dr. Northam clarified for Mr. Botts that originally the Neilson fund was created by Jim Neilson via a \$5 million donation which was matched by state funds to create a \$10 million fund to be used for educational excellence. Dr. Burke commented on the progressive approach of the initiative and suggested it should be used a model for other colleges within the university. Dr. Northam assured the board that the fellowships would not be SER-inclusive, but rather would be open to any faculty that was involved in energy research and work.

*Action:* Northam to provide a copy of Dr. Bill Gern's white paper to Vice Chairman Lockhart. Further discussion tabled for executive session.

### **Financial Overview**

*Summary:* SER Director Northam reported fiscal year 2013-14 operating budget was on track for full expenditure by the end of the year. Some funds have been recovered from the Centers of Excellence and have been reallocated for instrumentation and equipment upgrades. The Strategic Areas of Concentration budget of \$10million has been utilized in two areas: unconventional coal reservoirs and advanced coal conversion. \$4.5 million has been allocated to the Tier I Phase I initiative. It is expected that all funds will be fully utilized, depending on recruitment of faculty results, by the conclusion of 2016. The FY 2015-16 operating budget of \$19.5 million will reflect payroll increases for faculty, which will eventually cut into SER base budget unless other funds are brought in to assist with the increased expenditures. SER fund raising in the private sector has been very successful and this may be a mechanism to fund chair positions and reduce the additional salary burden. In the past six months, SER has completed a \$15 million fundraising campaign goal to complete the High Bay Research Facility and received an additional commitment of \$5 million, which has yet to be publicly announced. Halliburton has contributed \$6 million for research and facilities, and Saudi Aramco has provided \$2.5 million for research. \$30 million is needed for the Engineering complex and this effort is about to begin. This is a challenging goal and will require the involvement of the University of Wyoming, the governor's office, SER, the ACCTF and everyone involved. There is a need to identify one or two very large donors.

*Comments:* None

*Action:* None

### **High Bay Research Facility**

*Summary:* Dr. Northam referred to the letter, page 54 of ERC Notebook, from SER to the Governor's Taskforce. The letter acknowledges that the fundraising commitments for the facility have been met and lays out the benchmarks for Level I Planning. It concludes with a request to proceed with the facility design and construction. Construction is anticipated to begin in the fall of 2014 and occupation of the facility in 2016. Krista Laursen has been hired as the project coordinator for the build-out of the facility. She reports to the UW president but will work very closely with SER.

*Comments:* None

*Action:* None

### **College of Engineering Tier 1 Implementation**

*Summary:* Dr. Khaled Gasem and Project Coordinator Richard Horner provided an update on the status of the College of Engineering Tier 1 implementation. A total of \$17.5 million is available between the state, the university and the SER for the Tier I implementation initiative. It will consist of three phases, each lasting two years in duration. Phase I funding has been received and implementation should begin as of July 1, 2014. There are three areas of distinction: undergraduate enrollment, research and economic impact. The focus of Phase I will be capacity building. Staffing will include the hiring of 3 research scientists, 9 post-doctorate research associates and adding 45 PhD candidates. Three to four Centers of Excellence will be developed and provided seed funding. Twenty-one proposals have already been received. At least five will be supported initially within the first two years. It is a goal to have success metrics available by 2020, which concludes the final phase of implementation. Mr. Horner spoke specifically to the economic impact of the Tier 1 implementation and the significant role it plays for a university.

*Comments:* Mr. Botts addressed the board and stated many challenges and decisions still confront the taskforce. Currently there is the need to shift from a performance-based culture to a delivery-based culture. The taskforce going forward will be more external in engagement with stakeholders. A statewide awareness program needs to be on the taskforce agenda – a marketing strategy needs to be developed. Vice Chairman Lockhart suggested that the marketing strategy should provide a thorough understanding of Tier I for the public. Mr. Bauer questioned the assessment of the metrics. Dr. Gasem explained that assessment would be done annually and criteria is in place to ensure outcomes, but meaningful results would not be seen until the end of Phase I.

*Action:* None

### **CMI Update**

*Summary:* Dr. Northam informed the board of Ron Sturdam's retirement and the release of a new book, Geological CO<sub>2</sub> Storage Characterization. He further stated that the U.S. Department of Energy projects are completed and the report submitted. Phase II calls for the expansion and growth of the CMI. Mr. Carl Bauer has been contracted on a part-time basis as the interim director to lead this new phase. Mr. Bauer addressed the board and informed them that one proposal has been submitted and another in preparation. Mr. Bauer stressed the necessity to move from carbon

storage to carbon utilization. He has met with most of the stakeholders at this point for discussions to determine what issues are priorities, what investment is needed and availability.

*Comments:* None

*Action:* None

### **Barriers to Export Coal Study**

*Summary:* Dr. Northam reported to the board that this study has not advanced. SER is still interested in pursuing the study, but it is not a priority at this time.

*Comments:* None

*Action:* None

### **Executive Session**

The board adjourned the regular meeting to go into executive session for the purpose of discussing personnel matters.

A short break for lunch was called at 12:20 p.m.

The regular meeting resumed with a call to order at approximately 1 p.m.

### **New Business**

*Summary:* Chairman Lang called for new business to be discussed and hearing none he announced the date of the next ERC meeting as May 22 and May 23, 2014. He reminded members of the board that these dates precede the Memorial Day weekend and asked if there was any potential conflict of attendance. Members declined comment at this time.

*Action:* Chairman Lang requested that Ms. Steger poll the board next week to determine if a quorum would be available for the May meeting.

### **Adjournment**

*Action:* A motion to adjourn the meeting was made by Sen. Anderson and seconded by Mr. Bauer. The motion passed unanimously and the meeting was adjourned at 1:10 p.m.

Respectfully submitted:

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Paul Lang  
Chairman

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Tom Lockhart  
Vice-Chairman