

STEAB March 2014 Meeting
 March 20 – 21, 2014
 Denver Marriott West
 Golden, Colorado

MARCH MEETING ATTENDEES

Designated Federal Officer (DFO):

- Julie Hughes, DFO, Sr. Advisor, EERE, DOE.

STEAB MEETING ATTENDANCE		
BOARD MEMBERS	Present	Absent
Jeff Ackermann , Director, Colorado Energy Office	x	
Roger Berliner , Council President, Montgomery County Council		x
Tom Carey , Director, Energy and Rehabilitation Programs, New York State Division of Housing and Community Renewal	x	
William Vaughn Clark , Director, Office of Community Development, Oklahoma Department of Commerce	x	
David Gipson , Director, Energy Services Division, Georgia Environmental Facilities Authority	x	
Philip Giudice , Chief Executive Officer, Ambri	x	
Marion Gold , Commissioner of Energy, Rhode Island Office of Energy Resources	x	
Paul Gutierrez , Vice Provost for Outreach Services, Associate Dean and Director, Cooperative Extension Service, College of Agriculture and Home Economics, New Mexico State University	x	
Robert Jackson , Deputy Director, Michigan Energy Office , Michigan Economic Development Corporation	x	
Elliott Jacobson , Vice President for Energy Services, Action Energy	x	
Maurice Kaya , Hawaii Renewable Energy Development Venture	x	
Ashlie Lancaster , Director, South Carolina Energy Office	x	
Katrina Metzler , Section Supervisor, Weatherization Office of Community Assistance, Ohio Development Services Agency	x	
Lou Moore , Chief, Energy and Pollution Prevention Bureau, Montana	x	
Frank Murray , former President and CEO, New York State Energy Research and Development Authority	x	
Steve Payne , Managing Director, Housing Improvements & Preservation, Department of Commerce	x	
William “Dub” Taylor , Director, Texas State Energy Conservation Office	x	
David Terry , Executive Director, ASERTTI	x	
Malcolm Woolf , Sr. Vice President, Policy and Government Affairs, Advanced Energy Economy	x	
Daniel Zaweski , Assistant Vice President - Energy Efficiency and Distributed Generation Program, Public Service Electric and Gas Company, Long Island.	x	

Contractor Support:

- Stacey Young, Sr. Conference Manager, SRA, International Inc.
- Emily Zuccaro, Project Manager, SRA, International Inc.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

Welcome and Introductory Remarks

- STEAB Chair, Frank Murray (FM), opened the meeting asking new Board members to introduce themselves and explain their role within their state. Julie Hughes (JH), STEAB's Designated Federal Officer (DFO), then welcomed the Board to Golden, Colorado and reviewed the agenda providing background information on how she planned and formulated the agenda. She encouraged the group to think about potential outcomes and action items the STEAB can take with regard to the topic of each presentation. These ideas will then be addressed during the Board discussion times scheduled for the afternoons.

Discussion with Dr. Dan Arvizu on Lab Vision

- Dr. Arvizu, Lab Director for the National Renewable Energy Laboratory (NREL), began his talk noting his excitement to engage with STEAB on a variety of topics, looking forward to hearing their thoughts and feedback. He has been involved with the lab system for over 35 years and recognizes that government goals and objectives change with the administrations that come through each agency. When Secretary Moniz came into the Department of Energy (DOE) he made it clear that his goal was to make the national labs more effective. Dr. Arvizu paraphrased Secretary Moniz's comment that DOE is a powerhouse of science and technology and the national labs help with the principal agenda for mission areas that are keys for DOE success. The Secretary made it clear that he wanted the labs to act as strategic partners with the agency to help advance four areas: science, energy, National Nuclear Security Administration (NNSA) and legacy waste/environmental management.
- Based on that goal Secretary Moniz asked that the National Lab Directors Council (NLDC) appoint one individual from the larger council to represent each of the mission areas. This group of four formed the Laboratory Policy Council (LPC) chaired by the Secretary. It meets regularly to discuss the mission areas and the key priorities within each.
- The Secretary is invested in the President's Climate Action Plan and the Quadrennial Energy Review (QER) but recognizes funding is limited. Therefore he has asked all programs and labs to do more with less, and take on creative new activities without new funding. In light of funding issues labs know that strategic partnerships are going to be key moving forward.
- The NLDC met in Denver, Colorado for two days to discuss how to move forward. The labs discussed how to be more efficient and how best to integrate labs into the new environment; they also discussed technology transfer and commercialization. Recognizing not all labs are the same and not all labs focus on the technology transfer, all labs should start thinking about how technologies involved in research and development (R&D) can apply both to DOE's mission and to the marketplace.
- At NREL, Dr. Arvizu said, the lab focuses on mission driven technology transfer. NREL does not feel their job is done with R&D until the market has adopted the technology. That is very different from other labs whose missions sometimes focus around even earlier-stage research.
- Dr. Arvizu commented that while NREL is involved in commercialization the lab can do more, specifically with regard to moving the technology out into the marketplace. He and Dr. David Danielson, Assistant Secretary for the Office of Energy Efficiency and Renewable Energy (EERE), have discussed this with Secretary Moniz and the lab is currently trying to do something more profound in this area. The world of energy is changing rapidly and what the lab does today will prepare the country for a future with a clean energy economy.
- The labs and DOE are more aware now than ever that transformative energy is happening at the local and state level and that engagement at that level is key to determining what is underway and what the

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

needs are. There are three aspects NREL will be looking at to increase engagement and assist with technology transfer: the innovation space, transformation via regulatory reform, and markets.

- Jeff Ackermann (JA) asked how NREL will measure the success of technology transfer and what metrics the lab will use. Dr. Arvizu responded that there are multiple metrics the lab will look at to determine success. One of the ways will be the impact the lab has. Dr. Danielson has set a goal of doubling “something” within the next three years and the labs can all determine what the “something” is. The lab will also look at innovation such as numbers of patents and licenses, as well as how well the labs are able to leverage private investment against the public funds.
- Maurice Kaya (MK) noted in order to make a larger impact there has to be a cultural shift within the lab system. The labs all look internally and focus on R&D. How will the labs make this cultural shift to start looking externally and become more customer-friendly to engage with state and local governments who are making the biggest strides in transformative energy?
- Arvizu indicated the labs are now more focused on their impact in the marketplace. The labs need to understand the marketplace and focus on partnering with industry. He noted NREL has 450 active partnerships with industry and about \$100 million in funding at the labs has come from industry.
- Elliott Jacobson (EJ) noted from a low-income perspective he and the other Weatherization Assistance Program (WAP) representatives he would like to see labs and DOE make affordability a bigger issue. Dr. Arvizu agreed saying all income levels should have access to affordable energy and energy technologies; this should become part of public policy but currently the low-income demographic is undervalued in a myriad of arenas.
- Malcolm Woolf (MW) asked Dr. Arvizu to comment on the distribution channels for the deployment of technology and how State Energy Offices (SEO) and businesses can better engage with the labs; he finds it especially difficult for states in which no lab is located.
- Dr. Arvizu thanked MW for the question noting Senator Koonz from Delaware and Marco Rubio are looking at exactly this question. Additionally Secretary Moniz is trying to address this by exploring the idea of having labs come together and build a portal or resource listing all lab capabilities. A suite of tools would be available for states to reference while also identifying opportunities to establish regional partnerships. Arvizu commented that NREL has supported the idea a voucher system. The general concept surrounds helping small businesses with ideas that need lab assistance. A business could view this portal to see a suite of capabilities and determine what help it needs and which labs offer it. The business could create a business plan and submit it to DOE, which could review it under a larger competition. Winning businesses would receive a voucher for assistance to spend at any national lab.
- William “Dub” Taylor (WT) indicated this idea of a voucher system helps to combat the fact that labs are difficult and expensive to work with; other needs exist in streamlining access to the labs and setting an accurate expectation of what can industry once the labs are accessed.
- Dr. Arvizu again indicated DOE, NREL, and Congress through Senator Koonz see this as a priority. Both recognize the constraints of working with government and realize these constraints can dissuade people from trying to gain access to the labs. Others have concerns about whether the labs will add enough value to justify the process of accessing them.
- Phil Giudice (PGD) noted labs are not as relevant as they could be, because they are not always familiar with activity on the state and local level; they do not engage regularly with SEO’s. Labs come to understand what is occurring in the market when states or businesses go to them. While the voucher system is a good idea, it would be helpful to have a map showing all the connections labs have with business, industry, private partners, etc.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

- Dr. Arvizu indicated the labs are working to capture the value they bring to the private sector via the partnerships they currently have; hearing that STEAB is amenable to a voucher program is helpful.
- Ashlie Lancaster (AL) asked what NREL and other labs consider to be a “small business”. In South Carolina a lot of small businesses need help but don’t think of the national labs as a resource. Instead of going to the labs, they go to the SEO and other state offices. What’s missing is the ability to reach out to the labs. The concept of a suite or portal of capabilities would help. She believes states could be key to a voucher system’s process. States know what businesses need and could help businesses understand where to look for information and engage in a voucher program.
- Arvizu noted NREL has a Center for Renewable Energy Economic Development (CREED) which helps to address some of AL’s concerns, but it is not applicable to all 50 states. He did note that ICOR is one of the mechanisms to help provide a set or list of tools and capabilities to states. ICOR serves awardees of grants from the National Science Foundation and others. This is a partnership has great success stories from the last several years. NREL is considering something similar. This program would help bridge the gap between the need of small business or industry and the resources the labs have, and illuminate ways for accessing said resources.
- Labs are currently looking at finding the right place in the market to apply the technology and then focus on market push to facilitate adoption. Labs need to connect their innovation to existing or emerging market opportunities. Labs do want to work with entrepreneurs and determine how to partner with the to, for example, bring manufacturing back the United States for new technologies.
- Arvizu reminded STEAB about how committed Secretary Moniz is to focusing on regional and state partnerships with labs and DOE. Secretary Moniz recognizes the value of partnerships; the Department is committed to mutually beneficial partnerships

Dr. Danielson’s Discussion about STEAB’s FY 2014 Direction

- The next presenter was EERE Assistant Secretary David Danielson who joined the group by video conference. Dr. Danielson thanked FM for providing him with a copy of STEAB’s 2014 Engagement Plan and reminded the Board they received his feedback and comments regarding the outlined ideas.
- He looks forward to the Board’s feedback on actionable items about how EERE can move forward with state and local engagement in a more productive way. Specifically he is interested in feedback regarding public-private partnership opportunities with the Clean Energy Manufacturing Initiative and the Lab Impact Initiative.
- FM thanked Dr. Danielson for participating and introduced the four new members.
- He also highlighted the timetable outlined in the Engagement Plan and asked if this aligned with Dr. Danielson’s schedule and needs. He also mentioned Dr. Arvizu’s presentation, noting there were a few ideas brought-up during that discussion that the STEAB will discuss in further detail.
- Dr. Danielson presented to STEAB several opportunities where STEAB could give feedback on emerging issues. , such as Secretary Moniz’s suggestion of having the national labs work in a consortium around regional or national challenges such as grid modernization. What does good regional engagement entail; what partnerships with labs would be effective?
- Another area for STEAB’s consideration: could STEAB establish a mechanism to bring emerging issues or urgent topics that DOE needs to focus on to solve the nation’s energy needs? DOE needs to know what states are facing and what areas need to be addressed as they arise.
- FM agreed with this comment saying developing a more open format for discussion would help bring these timely issues to DOE’s attention so that states and the agency agree on action items.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

- Dr. Danielson asked STEAB develop a list of action items for DOE to address. He then opened the floor for discussion and asked members of the Board to bring to his attention areas of concern that may not have been outlined in the Engagement Plan or new issues.
- EJ raised concerns states are facing with regards to funding for the Weatherization Assistance Program (WAP).
- Steve Payne (SP) acknowledged the challenges facing DOE related to funding for WAP.
- Dr. Danielson invited STEAB to engage in greater detail with Dr. Kathleen Hogan, Deputy Assistant Secretary for Energy Efficiency, and WAP leadership to ensure she and her staff is kept up to speed on state WAP concerns.
- PGD asked what two or three things would EERE like the Board to weigh in on with regards to the Lab Impact Initiative?
- Danielson indicated that EERE wants to foster the relationship between states and labs and determine how the labs can have a greater national impact.
- Danielson asked for ideas on how EERE and the labs could create or promote user facilities. He also welcomes guidance and suggestions regarding investments in the labs' work with industry
- Danielson suggested STEAB could provide ideas for an "Industry Fellows Program" where industry leaders spend time in-residence with the labs learning the capabilities available which then could result in high-impact research agreements. Another example may be a small-business or regional engagement voucher program. The goal with these ideas is to get labs and manufacturers, small-businesses, and state and local governments, working better together and creating partnerships that are mutually beneficial.
- Danielson concluded his response noting he wants STEAB's feedback on these areas so DOE can take action and do the right things to move the country forward to a clean energy economy.
- David Terry (DT) noted the voucher example where a business could engage with the lab is a logical interface between the two entities, but clearly there would need to be a competitive screening component to that and the states or State Energy Offices (SEO) would need to be involved.
- Lou Moore (LM) echoed DT's comment saying some SEO's and labs already have a working relationship but questioned whether other states would be able to foster connection to labs where there were no open lines of communication previously.
- PGD agreed saying the labs have amazing technical resources and they need to engage in partnerships with states or business in order to make those resources available.
- AL added the need to start with small-business in the states and see what they need in terms of expertise. Once the needs are identified they can liaise with the SEO or state commerce department; the lab would provide the technical expertise and the state could assist with the business aspect.
- FM asked the Board to continue thinking about this new idea for a voucher program indicating they would circle back to this during Board discussion later in the afternoon.

"Bringing Lab Technologies to Market" Presentation and Discussion with Bill Farris

- Bill Farris, NREL Associate Lab Director for Innovation Partnering and Outreach, spoke about ways in which NREL works to bring technologies to market. He noted NREL, which is an applied energy lab, is the only lab to have the phrase "accelerating commercialization" written into its contract with DOE.
- The LLC operating NREL is the Alliance for Sustainable Energy, LLC. DOE asked them to spur innovation and move technology out of the labs and aid in economic development. There are a few things NREL is doing to respond to this charge. One is creating an innovative and entrepreneurial environment; the second is accessing capital; the third is strategic engagement with industry.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

- NREL wants to have local and regional engagement; there are a few ways the lab is doing outreach. The IP Portal started in 2010 shows lab projects and lists over 19,000 patented technologies developed at the national labs.
- Additionally, NREL runs the Industry Growth Conference each year where companies present new technologies and ideas, creating visibility and helping them raise capital and make connections to entrepreneurs and angel investors.
- MK asked Mr. Farris how NREL defines ‘partner’ and how the labs work with these ‘partners’ in terms of lab engagement and outreach. Mr. Farris replied NREL engages in many ways with the community and region as former NREL staff now work in private industry; NREL researches have also reached out to private industry for assistance.
- Farris noted NREL recognizes itself has engaging with 600 partnerships and with small-business. The voucher program being discussed would be intended to facilitate partnerships.
- The Colorado Center for Renewable Energy Economic Development (CREED) brings together stakeholders and service providers that support the creation and growth of clean-tech companies and acts as a catalyst for economic development. CREED developed the Innovation and Entrepreneurship Center (IEC) which focuses on innovation by enhancing NREL’s small business engagement and fostering investor relationships for clean energy entrepreneurs.
- DT commented that this was a great idea for NREL and Colorado; in Texas he is trying to figure out a way to get partners across the state to work together in the way that CREED is in Colorado.
- Mr. Farris welcomed and introduced panelists who participated in a roundtable discussion about CREED and how lab-state-industry partnerships are effective for stimulating economic development and making the labs useful. The panelists were Mike Freeman from the Rocky Mountain Innosphere, Chris Sheppard of Colorado Clean Tech Industries Association, Duer Reeves from Weather Cloud, Robert Hanfling the Executive Chairman of Silver Bullet Water Treatment LLC, and Richard Adams the NREL Manager for the Innovation and Entrepreneurship Center.
- The panelists discussed how their partnership with NREL, through CREED, helped improve access to capital and qualified investors, access to testing facilities, and other assistance. All panelists mentioned the importance of participation of the state government in incubators to make sure investors are aware of what companies are trying to do so connections can be made. The state, the lab and the investors all play a different role in identifying and filling gaps to push technology forward and out into the market place. Without these connections these start-ups would not have been successful; there would have been too many hurdles and not enough guidance to overcome the obstacles.
- Mr. Farris noted the panelists and their organizations volunteered to join CREED and it has been successful because the lab, the state and the companies are all committed to making it work.
- JA commented that SEO’s play a role in this collaborative effort not through providing economic stimulus. The SEO does not have money to invest with these companies; the SEO’s involvement is more strategic, focusing on collaboration and connection, and leveraging NREL’s technical capabilities to assist industry.
- Chris Sheppard added to JA’s comment saying the state’s other role is support from the Governor. Colorado’s governor is invested in seeing CREED succeed. He spearheaded an economic development plan identifying 14 key industries; one was the energy industry. Support came from the political, technical, economic, and legislative sides.
- JA asked the panelists to discuss how they interacted with NREL and how best to engage with labs from an industry perspective.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

- Mike Freeman responded he and his organization got involved with NREL after winning a smart grid grant. The grant was a market-pull project as it brought together players in the field of smart grid in an effort to encourage new technology development. Chris Sheppard talked about some of the issues she faced with labs regarding contracting and licensing, and Duer Reeves added that gaining access to the labs and their capabilities seemed to him to depend a lot on how the lab was funded and what restrictions and caveats were in place with regards to working with outside entities.
- FM and JH thanked the panelists and Mr. Farris for their comments and discussion, specifically on their personal experience working with NREL as a partner for clean energy technology innovation and deployment.

Presentation on the “Advanced Manufacturing Office: Accelerating energy improvements in the manufacturing/industrial sector” with Jay Wrobel

- JH introduced Mr. Wrobel indicating he would speak to the Board about current activities underway within the Technical Assistance Program (TAP) and how the program is working for the industrial community. She asked that members provide feedback and comments with regards to the program and its relevance to states.
- Mr. Wrobel, Manager of the Advanced Manufacturing Office’s (AMO’s) TAP, within EERE, provided an overview of the program and its focus on increasing US manufacturing competitiveness by improving efficiency in energy intensive industries, promoting manufacturing innovations for advanced technologies, and providing technical assistance to manufacturers. The flagship program for TAP is the Better Plants Program, within the Better Buildings Initiative. Better Plants is a voluntary program where companies pledge to reduce energy intensity by 25% over 10 years in all of their facilities. It has over 120 partner companies, including Volvo, Nissan, Texas Instruments, Ford and 3M. Partners implement cost effective energy efficiency improvements to save money, create jobs, and promote energy security. The national recognition is important to these participants. The 120+ pledged companies represent over 800 plants across the country.
- DT asked what technical assistance DOE provides to these companies. Mr. Wrobel said TAP managers assigned to each plant partner assist with training, education as well as quantifying the energy savings. They also run in-plant training on energy assessments and energy efficient operation protocols.
- Another program being run out of AMO’s TAP is Superior Energy Performance. This is plant specific energy management building off ISO 50001, to verify and improve energy performance for a facility. Additionally, there is the CHP Technical Assistance Partnership which promotes and assists in transforming the market for Combined Heat and Power (CHP), waste heat to power, and district energy technologies by assisting industrial partners to assess the cost-effectiveness and viability of such technologies. Mr. Wrobel finalized his presentation identifying ways states can participate and work with AMO’s TAP. He suggested states could create a ‘Governor’s Award’ for “State Manufacturer of the Year”, or promote the in-plant trainings, or encourage state leaders to attend TAP media events to help the program gain recognition. Mr. Wrobel noted there are many opportunities for partnering more closely with states and asked STEAB for their input on other ideas for engagement with TAP.
- MW replied that from his time in Maryland with the Governor’s office he and the state did not get the greatest or warmest reception when bringing academics into the corporate world. He got the feeling that academics lacked credibility in industry, and wondered if DOE found this to be the case at in-plant trainings and other activities. Mr. Wrobel indicated that was not the case as DOE was only going into plants and corporations that wanted assistance and volunteered to be part of the program.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

- DT noted over the years DOE created and developed industrial assessment tools, but some of them are so old that they are unable to operate on current software systems. One of the challenges facing Texas is that maintenance and support of these programs has faded. What are DOE's plans for the tools moving forward?
- Mr. Wrobel said is doing an analysis to see which tools are currently still being used, and released a Request for Information (RFI) to identify what the market's reaction would be to adopting these tools with the goal of finding commercial or private organizations which could take these older tools and modernize them. There are creative opportunities out there to bring tools states still find useful up to date and create more web-based versions for wider-spread use.

STEAB Discussion: Follow-up on the day's presentations and round-tables

- JH focused the group's attention by commencing a Board discussion to review the comments and presentations heard throughout the day. She referenced the feedback Dr. Danielson asked for with regards to a proposed Lab Voucher Program, as well as requests from other speakers about how their office or program could better interact with the states.
- PGD commented on two items. First, STEAB should advise and make recommendations on the Lab Voucher Program. This is a good opportunity for state engagement with labs and DOE and it could bring immense value to industry. Secondly, he suggested STEAB think about recommending to DOE for the Voucher Program that states use their State Energy Program competitive funding to provide small-business start-up ecosystems under the initiative. He recommended this approach because states are in a better position to identify economic development opportunities and could provide an additional link between State Energy Offices, commerce offices and the national labs.
- FM asked the Board their thoughts on how to tackle the requests from Dr. Danielson, others, and the priority areas identified by the Board during the fall 2013 meeting, which produced the STEAB Engagement Plan. With several Task Forces already in place, should the recommendations on the Lab Voucher Program fall under an existing Task Force or should a new one be created to address this?
- DT responded that since responses and feedback on the proposed Voucher Program are a short-term priority, it should be addressed under the US Energy Productivity and Economic Competitiveness Task Force (previously the National Lab Task Force). AL agreed and volunteered to join that Task Force.
- FM clarified that Dr. Danielson asked for input and recommendations in three areas: the Lab Voucher Program; the long-term role of national labs in increasing and promoting US manufacturing; and providing input and insight with regards to the Clean Energy Manufacturing Initiative.
- MK and AL indicated the Lab Voucher Program and the role of the national labs should not be separate issues, but rather tied together in the recommendations STEAB sends to EERE.
- RJ agreed but feedback should be given in stages to EERE. Priority one should be feedback on the Lab Voucher Program, then ways in which labs can engage with states and other stakeholders. If STEAB first provides feedback on the specific proposed program, it can then take a bigger picture look at the role of the labs across industry and across the market landscape.
- JH reminded the group of Dr. Danielson's drive to connect states to the labs. EERE often refers to the benefits of public-private partnerships. The Voucher Program may be a way in which SEO's can play a role, becoming more connected to labs and DOE.
- MK agreed by reminding the Board that DOE measures success of its programs through metrics. In his opinion the labs are not very good at executing these types of programs or identifying the right audience. States, however, are tapped-in to the needs of industries in their region and could play a role in identifying the players and tracking the success of a program like this.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

- Marion Gold (MG) pointed out that during the panel discussion, the Colorado companies all noted how it is difficult for companies to secure funding since the technologies they are developing are very early stage. If the point of this Voucher Program is to bring together labs and burgeoning industry to help develop these technologies and create market push, a mission statement needs to be included in STEAB's recommendations.
- FM reiterated the need to be aggressive with a timeline to provide feedback to EERE on this Voucher Program. STEAB recognizes that the insular lab culture won't change overnight, but initial steps can be taken to make the labs more relevant to state economic development opportunities. STEAB's feedback will help DOE identify ways to begin to change the relationship between labs and states, labs and DOE, and states and DOE.
- Katrina Metzler (KM) suggested one design element to this program could be to set minimum and maximum levels of funding so that the program would be available to small and large business, but within certain parameters.
- David Gipson (DG) recommended reviewing what structures were already in place within states that have similar programs. The recommendations STEAB makes should play to the strength of states, describing models already in place as the agency may not be aware of them. Recommendations can build off of these already existing models by showing what has worked well and what lessons were learned.
- DT, AL and DG suggested additional design ideas for the Lab Voucher Program and which state offices could play a role.
- FM added his experience in New York was that no one ever went to the labs for help they came to the SEO's; state engagement in this plan is key to its success. States understand the needs of industry and can help make connections to DOE and the labs.
- Lou Moore (LM) agreed with FM but reminded the Board members the importance of figuring out the capital part of a program, and how to engage entrepreneurs or angel investors as well.
- MW followed-up on this comment saying labs have technical expertise but lack business acumen. Recommendations from STEAB should mention the labs are the technical experts, but SEO's and state organizations will assist with market push and deployment.
- RJ, KM, FM and JH all brought up ideas and suggestions about how to create a pilot program, what would be needed as criteria for reviewing and selecting applications, what agencies at the state and federal level would be involved, how the voucher would ultimately be awarded, and what funding levels would be needed to make the voucher useful to a business.
- DZ made the comment that DOE needs to see a return on investment with any program in order for it to move from a pilot to a full roll-out. If STEAB makes its recommendations too broad to encompass too many types of technology in the energy efficiency and renewable energy realm, successes will be too small and the return on investment hard to measure. STEAB should recommend that DOE select two or three technologies in the manufacturing arena. Focusing on only a few technologies may increase the chances of success.
- JH and FM thanked the members for their participation and comments during the first day of the March meeting and promised to circle back to these discussions the following day.

Robyn DeYoung's Overview of the New EPA Tool for Calculating the Contribution of State EE and RE Investments to Reductions in Air Emissions

- FM opened the second day of the STEAB's live meeting by welcoming via teleconference Robyn DeYong from the Environmental Protection Agency's (EPA) state climate and energy program. He indicated this

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

presentation was scheduled as follow-on to the discussions which occurred during December's STEAB meeting. EPA has developed a tool which FM learned about in State and Local Energy Efficiency Action Network (SEE Action) meetings.

- Ms. DeYoung started off by explaining the background of the tool noting EPA created a roadmap for incorporating energy efficiency and renewable energy policies and programs into State Implementation Plans (SIP) back in 2012. To help states implement these plans, EPA has two resources; one is a quantification tool called AVERT, and the other updating the projected energy impacts of these new state policies to include in the Annual Energy Outlook (AEO) forecasts.
- AVERT is the Avoided Emissions and geneRation Tool which translates the energy savings of state energy efficiency policies into emission reductions to ensure National Ambient Air Quality Standards (NAAQS) compliance. AVERT at a minimum could be used as a way to analyze various energy efficiency and renewable energy programs to help states understand the emission benefits of implementing these programs. Currently the tool is available online at www.epa.gov/avert
- As states move towards adopting more energy efficiency and renewable energy policies, they have to look at how that affects NAAQS. EPA is helping states quantify this by updating the projected energy impacts and issuing a methodology documenting which describes EPA's approach to the updates and new projections. To help states with the energy side of the equation EPA is projecting the impact of polices that are currently not included in AEO 2013. EPA hopes this will help state agencies to revise electricity demand forecasts with the goal of making regulation more cost effective.
- DeYoung then reviewed with STEAB the revised electricity demand forecast based on the state implementation of new policies and noted this draft is out currently for public comment and feedback from states. Ms. DeYoung concluded her presentation noting she would like STEAB to tell her if the information EPA put out is accurately describing energy efficiency and renewable energy policies included in the analysis, and whether there are issues EPA has not addressed.

DOE Technical Assistance: What Do States Really Need

- The next presenters were Dan Beckley and Michelle Wyman. Mr. Beckley is the Principal Laboratory Program Manager at NREL, and Ms. Wyman is Director of Intergovernmental Affairs at DOE. Their presentation focused on the different types of technical assistance offered by DOE and NREL, emphasizing state's needs, emerging issues, and the role of policy analysis for the future of technical assistance. Ira Birnbaum, Supervisor of Technical Assistance from EERE's Office of Weatherization and Intergovernmental Programs (OWIP) also participated.
- Mr. Beckley noted NREL currently operates 11 programs that support technical assistance. Requests for technical assistance (TA) come from all across the country. NREL supports all types of business models as there are a myriad of ways to approach a project.
- The NREL framework or technical assistance (TA) consists of analysis, then actual TA, and finally outreach through high-quality information portals. NREL approaches TA topics with policy, finance and technology and DOE approaches it from a perspective of efficiency, electricity and transportation, so assistance varies between the agency and the lab. Over the years NREL has seen most of the TA work focused on Photovoltaic (PV) and other renewable energy areas like wind. The biggest challenge to TA is a lack of information and misinformation about these technologies and projects, the risk is policy makers then producing ineffective and inefficient policies. To solve this issue, NREL created a manual that grades states on policies for solar and wind. Taking the score cards, any states graded a C and above were graphed on a large chart. NREL was able to look at watts per capita of these installed technologies and saw which policies led to increased generation capacity. NREL will continue tracking this

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

information. Effective energy efficiency and renewable energy policies support market penetration of clean energy technology.

- MK responded to this comment noting he worked closely with NREL in Hawaii and Mr. Beckley is correct, it takes a significant effort on both the technical and policy side to make changes but they can happen if policy makers are given good information.
- Mr. Birnbaum discussed TA with regards to the OWIP. He noted some DOE TA is one-to-one in nature. TA for OWIP (provided to state and local governments) often focuses on topics where groups such as NASEO and the National Governor's Association (NGA) suggest states need help.
- Mr. Birnbaum suggested DOE needs to find more effective ways of providing TA with less funding now that the American Recovery and Reinvestment Act funding has been spent. The program is currently looking at state energy planning, using the Better Buildings Program and the SEE Action Network to identify new ways of providing TA through new models.
- Ms. Wyman built on Mr. Birnbaum's comments providing STEAB with a broader view of what DOE is doing from the Secretarial level.
- She noted her office has been engaged by Secretary Moniz to increase the work they are doing with state and local governments, identify the needs of those entities, and be more responsive. This is an "all of the above" approach. Funds have been made available to support innovation in multiple ways, such as new loan authority levels, to drive innovative projects in states and regions. Secretary Moniz recognizes the importance of having cross-program initiatives.
- Ms. Wyman then wanted to hear from STEAB what they saw as state priorities and asked how DOE could be more responsive to the states. She also asked if STEAB thought it would be useful for DOE to hold more frequent calls with states to discuss TA opportunities and priorities; that is something her office is actively doing with NASEO and other organizations.
- DT asked if this type of discussion could be integrated into the STEAB monthly teleconference calls. FM indicated this was something the Board could discuss doing moving forward.
- MW commented that when he was involved with Maryland's SEO and there was a challenge facing the state, the governor wanted it dealt with that month. If it was a longer-term problem the request was to develop a roadmap, MW indicated he rarely turned to DOE for TA because of the timing and he knew it would take too long to get any help or feedback from DOE. He then suggested forming something similar to a DOE TA SWAT Team where DOE maintained a matrix of who could do what, or who could assist in what area. Then states could expect a response within 24 hours of submitting a request and get immediately plugged into the right contact at DOE so the work could start within the week. MW felt that approach would be most helpful for states.
- Ms. Wyman responded saying the good news was that DOE and this notion of a matrix is already something her office is looking at in order to increase the timeliness of a response to requests for TA. Such a tool would be structured to cover the entire Department with the goal of identifying a point of contact to address TA requests quickly.
- TC followed-up on MW's comment noting it would be helpful if DOE implemented at least a protocol to respond to requests quickly in order to inform the requestor that their need is being addressed. He noted normally requests go into "a black hole" at DOE and it is difficult to determine if the request was even received, let alone if it was being worked on.
- JH reminded the group that with regards to TA she heard a comment from a Board member within the last few months that DOE's TA is "a solution looking for a problem". As Dr. Danielson is looking for solutions to areas where STEAB sees room for improvement, perhaps this is one of those areas. STEAB

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

could propose a process or a solution as to how DOE can target the right topics to provide TA on. If there were targeted areas, DOE could focus their expertise and also provide a more timely response.

- FM agreed saying the issue is also how much information all the players have. States have information and DOE has even more and it is difficult to access all of that unless you know who to go to and what you are looking for. This is both a structural issue and a topical one. The structural component is how to access the information itself; who do you go to, how do you reach them, etc. The topical issue is figuring out what you actually need assistance on in the bigger picture of what you are trying to accomplish, and which are the right TA topics for helping states to solve the issues that face them. It is also not only access, but timeliness that continues to be a problem for states. States need to figure out what they need in terms of TA. Once states have figured that out, the topical issues, STEAB can help work on the structural issues and provide recommendations on how to better access TA resources within DOE. Maybe STEAB could take time to look at the existing online Solutions Center and determine strengths and weaknesses of that tool. Recommendations could be made for improvement, and issues of response time could also be tackled in that same document.
- DT and JH agreed with this approach and both indicated this was an idea to think about as a possible recommendation to EERE.

Weatherization Update: Tools Developed to Assist With Quality Work Plan and the Status of Existing and Future Certifications

- Josh Olsen and Jen Sommers of the Home Energy Professionals Project, along with Dan Beckley, joined the STEAB via teleconference for a presentation and discussion on the Weatherization Assistance Program (WAP) and the tools and processes developed at NREL which could be replicated and used in other states.
- Mr. Olsen began provided background on WAP, then discussing the greater WAP network concerns. He noted that one challenge to managing increased production was the lack of a uniform way to validate what contractors were doing when they weatherized a home and how they were qualified to do it.
- The solution to these issues has roots in the White House's "Recovery Through Retrofit" report as well as one produced by the WAP Trainer's Consortium. Both identified the need for standardized certifications and specifications on how to perform various types of home retrofits, to ensure work was of a high quality. Many certifications are available; none of them are a national certifications. Thus, a national standard for "work quality" was undertaken by WAP. This is how Guidelines for Home Energy Professionals arose. The DOE Guidelines for Home Energy Professionals project helps to establish a national residential energy industry upgrade and a skilled workforce. The project created standard work specifications, advanced certifications for workers, and accredited training programs. This collaboration is between DOE and the home energy performance industry, and NREL.
- At the beginning stages of the program's development, NREL and DOE realized that in order to really achieve high-quality Weatherization work, the work itself has to be defined, the training needs to be verified, and the workers need to be certified. To define the work, a document was produced which laid out what the worker was expected to do, and what the retrofit or installation would accomplish. To quantify a quality job, a national baseline for work quality was created.
- The final piece was training the workers correctly so that the work was done well and the result was a quality product. To train people properly, you need to design training to teach and test the required knowledge, skills, and ability. NREL conducted a formal analysis of the work. To build relevant certifications, four jobs were identified including Energy Auditor, Retrofit Installer/Technician, Crew

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

Leader and Quality Control Inspector. These certifications are administered by the Building Performance Institute.

- The WAP National Quality Work Plan (QWP) is a strategy for integrating the guidelines and resources for the Weatherization program in a way that streamlines and creates consistency in work. It will be phased-in over multiple program years, and provides resources to assist grantees with compliance while demonstrating WAP's dedication to quality work. The QWP defines the work, communicates the expectations of the work, creates a mechanism for inspecting the work, and trains workers to do the work. The QWP is both specific but also flexible.
- Now the information needs to be communicated effectively to states, grantees and workers. It needs to be communicated all the way down the chain to the local level. Currently Mr. Olsen and his team are conducting national calls about the QWP STEAB could help ensure stakeholders at the local and regional level are aware of QWP's roll-out.
- Currently, the QWP is being updated to reference Standard Work Specifications (SWS), and grantees are updating their certification plans to meet the QWP standards. By 2015 all Quality Control Inspectors should be certified under the new guidelines, and grantee training plans will include this accredited training.
- Steve Lommele presented information on the SWS referenced by Mr. Olsen. The Standard Work Specifications "define the minimum requirements to ensure that the work performed during energy upgrades in single-family, multifamily, and manufactured homes is effective, durable, and safe. The SWS can be used as an industry guide for workers, training instructors, homeowners, and program administrators involved in the home performance industry."
- The original document was hundreds of pages long and was a PDF; when minimal changes were made it was difficult for people to understand the updates. NREL was tasked with making the SWS more user-friendly and accessible. They worked with key stakeholders and DOE to identify the tools needed in order to do work in the field. The online tool is available at sws.nrel.gov
- The online tool allows a user to search for content, email themselves specifications, print the document, and create spreadsheets for easy access to and analysis of data. It is a technical document that will evolve over time and change as NREL and DOE become aware of updates and other needs as expressed by workers and states. The goal of putting this tool online was to make it as accessible as possible.
- Matt Keeler from Advanced Energy presented an overview of his company and how it is involved in the SWS. Advanced Energy facilitated the process of creating the SWS. They created digital tools now in use. Mr. Keeler gave several examples of pilot programs in Arizona that are underway using SWS, and discussed some of the early lessons-learned. Mr. Lommele and Mr. Keeler demonstrated the tools they discussed, walking the Board through the online websites for the Guidelines for Home Energy Professionals, the SWS, and the QWP sites.

Quadrennial Energy Review: Focus on "Vulnerabilities"

- JH provided background on the Quadrennial Energy Review (QER) discussion, noting this was a topic addressed during the December Board meeting with Karen Wayland of the Office of Energy Policy and Systems Analysis (EPSA). DOE is the Secretariat of the interagency process. EPSA wants STEAB's feedback on what states see as energy vulnerabilities. She encouraged STEAB members to use this discussion time as an opportunity to talk about and identify areas where the QER could address these vulnerabilities as it lays out an energy plan for the future.
- MW, Chair of the QER Task Force, then gave a summary of how DOE will be conducting the QER. For the first year of the QER DOE will focus on transmission, storage and distribution. The purpose is to create a

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

multiyear roadmap outlining Federal energy policy objectives, legislative proposals, a list of research, development and deployment programs, and potential financing programs. MW suggested the Board develop recommendations to be communicated to Ms. Wayland.

- MW remarked that T&D decisions are made at the state level; if DOE is going to change policy surrounding T&D what is the mechanism for instituting that policy change? Will the QER list the necessary steps or will it just suggest policy changes and leave it up to the states to determine how to implement those changes? He also wondered whether DOE had engaged regional transmission associations in this process and. For the QER to be successful states, associations, regional groups, etc. all have to be included in the process as key stakeholders.
- JH thanked MW for his comment indicating this point is something that needs to be made to EPSA, the group managing the process.
- DT added that under ARRA DOE provided support to states to look at long-term transmission planning scenarios. Those tasks were delegated to grid operators in each state. Just putting the plans together was a three year process that is still underway. He wanted to know if the QER process would look at those plans. Also, given the propane shortages experience across the country during the winter, he suggested liquid fuel logistics should be addressed. Also, it is important to note that interdependencies exist between electricity and natural gas, and vice versa. He encouraged STEAB to make this point in the recommendations and response back to DOE.
- MK voiced that communication should be a priority. He made the point that you cannot have an energy system operational today without a communication infrastructure. Secondly, water delivery is critical to address, as well as the human resource infrastructure to manage all of these different systems. Those need to be reviewed during the QER.
- FM commended that he previously asked Melanie Kenderdine, the Director of EPSA, why energy efficiency is not mentioned in this first year of the QER. The way DOE has structured the QER into three separate years and each year reviews a different part of the energy system is confusing. Year Two will focus on end use. When energy efficiency is added into the system, it affects T&D as well as resiliency. STEAB should make the point that energy efficiency has a beneficial impact in all of the three areas the QER will be looking at and it must be considered during the data collection and analysis.
- MW added that in his perspective this is a good government exercise to identify the gaps, challenges, and solutions in the effort to move the US towards a clean energy economy and make the US more energy independent. That being said, the issue is relevance to states. He wanted STEAB to help the QER and policy changes which will result from this review be relevant at a state and local level. That way the results of the review can be actionable and useful to states. JH refocused the discussion toward identifying vulnerabilities that are of concern to state and local entities so they are not overlooked as DOE conducts the QER. She asked the members to discuss ways they think about vulnerabilities so that the results can, as MW noted, be actionable at the end of the process.
- DG suggested the vulnerability of cyber security, noting that aspects of energy grids and services are run via the internet or have some connection to the web. Additionally, restoration of energy and electricity after major weather events needs to be addressed. It is not as simple as just putting electric lines back up, it's getting everything working together in a system again, which can take time and coordination across multiple companies and agencies in the state.
- MW agreed with both of DG's comments, and PG and EJ wanted to remind STEAB that the list of vulnerabilities should include the low-income population. The Weatherization Program and its work could fit into the QER in some way, as it serves the low-income population. The QER should be mindful of WAP in the process, as policy changes will affect how WAP is implemented at the state level.

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

- MW talked about the interconnection between energy systems and fuel types. As DT noted earlier, there is an issue with home heating oil distribution and delivery which impacted both consumers and industry this winter.
- MW wanted to know if members thought it would be useful for the Board to make a recommendation about having EPSA reach out and engage now with Regional Transmission Organizations (RTO's). FM returned to the comment DG made earlier about weather events. In light of Hurricane Sandy, the strongest role for the Federal government to play is making sure states and local government have the capability to prepare and respond to emergencies. The QER could help develop the institutional capacity to respond to emergencies. A significant vulnerability is weather. The severity and frequency is on the upturn and T&D is affected by weather events; weather should be included as a vulnerability.
- MW thanked members for their comments and noted that he has a meeting with Ms. Wayland the following week and would raise topics from this discussion. Also, the QER Task Force will be addressing this issue in a future conference call where the group will draft the recommendation and response letter to DOE which will include all of what was discussed today.
- JH and FM thanked the group then circled back to the previous day's discussion on a response to the Lab Voucher Program.
- JH asked MK about his comments regarding the labs. MK noted earlier how labs have not identified who their customers are and what the ecosystem of players and partners could look like if labs were more open and engaged with the state or regions in which they operate. JH asked if MK wanted to include a recommendation about that in the Lab Voucher Program recommendation to DOE. MK indicated he did want this comment included and that the US Energy Productivity and Economic Competitiveness Task Force would tackle this issue as they convene on a conference call later in the month.
- JH and FM asked for an action plan for the Weatherization Task Force moving forward. The QER Task Force will be working on the list of vulnerabilities and other recommendations about how to improve the QER process, and the US Energy Productivity and Economic Competitiveness Task Force will work on the Lab Voucher Program recommendations
- EJ, Chair of the Weatherization Task Force, indicated the Task Force was still concerned about the FY 2015 budget for WAP, maintaining the existing network, and the roll-out of new requirements. As Dr. Danielson offered to have a WAP representative meet on conference calls with the Task Force to discuss these concerns and provide updates on the program, the Task Force will plan a conference call for later in the month and invite a WAP representative to participate. JH added that the Task Force should continue trying to coordinate with Dr. Danielson and find a time for him to come out and visit a Weatherization site in one of their states. She encouraged the Task Force to send another invitation to Dr. Danielson about a site visit.
- FM then turned to the Public Comment portion of the meeting. He asked if there were any members of the public on the phone, or in the room. Seeing as there were none, he asked if any members of the public who wished to make comments had sent in written comments to the DFO or the contractor support. Seeing as there were no public comments submitted he then turned to the final agenda item of the March meeting and asked JH to introduce the next guest.
- JH welcomed Jason Walsh, Senior Advisor to the Assistant Secretary and Acting Director of Strategic Programs, via conference call to participate in a wrap-up and review session of STEAB's next steps as identified during the March meeting.
- MW provided an overview of action items the Board will be working on over the next few weeks and months. One of those is responding to Ms. Wayland's request to identify potential T&D vulnerabilities; STEAB will be providing a response to DOE and EPSA on this issue. He indicated some of the concerns

STEAB March 2014 Meeting
March 20 – 21, 2014
Denver Marriott West
Golden, Colorado

the Board discussed during the meeting were issues like how to make the QER actionable for states, and on the infrastructure side the QER does not appear to be taking into consideration the human element, cyber security or the interdependency of energy sources and fuels with energy infrastructure. Secondly, during the December Board meeting a suggestion was made regarding the utility business model approach. This is a hot topic in states and has the potential to change and align utility incentives in a way that will help reach the nation's energy goals. The recommendation was to use DOE's convening power to jump start conversations in states and regions about this issue. MW wanted to know how STEAB could assist DOE with this recommendation and how to keep an open dialogue about this important issue.

- Mr. Walsh thanked MW and noted he would like to talk more with the Board about the QER and the utility business model conversations. He hopes STEAB will be sending in letters or documents to DOE and EERE in the coming weeks so the agency can review the recommendations and follow-up on these areas of concern.
- JH reminded Mr. Walsh that the STEAB conducts much of its work via Task Forces and each of the STEAB's different Task Forces would be convening calls over the next few weeks to keep these action items moving forward. She reminded Mr. Walsh that the Weatherization Task Force is looking for DOE participation on their conference calls and hopes EERE can work with her to identify the right point of contact for the Task Force.
- Mr. Walsh indicated he would follow-up on that item and also thanked the members for their insight and mentioned what a great sounding board the STEAB has been for EERE. Finally, he noted that EERE was finalizing their Strategic Plan and expects the document to be released in early April.
- JH and FM thanked Mr. Walsh for joining the Board during their wrap-up session, and FM then asked the Board members if there was any new business. Seeing as there was none, he asked for an update on the summer STEAB meeting.
- JH reminded members the summer 2014 meeting of STEAB would take place in Washington, DC on August 20- 21, 2014. Information about the event would be coming out in the next few weeks to all STEAB members via an email from the contractor support.
- FM asked if there were any other items to discuss. Seeing as there were none he and JH thanked the Board for traveling to NREL and Golden, CO and adjourned the March 2014 live Board meeting.