

II. Technical Proposal: The NEED Project

Response to RFP Title: K-12 Energy Curriculum Training EERMC-2022-01

National Energy Education Development (NEED) Project Proposal to the Rhode Island Office of Energy Resources Rhode Island Energy Efficiency and Resource Management Council (EERMC)

A. Background and Overview

The National Energy Education Development (NEED) Project welcomes the opportunity to bring forty-two years of energy curriculum development, training, and state programming expertise to the Rhode Island Office of Energy Resources – Energy Efficiency and Resource Management Council in support of EERMC’s K-12 energy curriculum and teacher training goals. NEED, like EERMC, has worked to “promote public understanding of energy issues and of ways in which energy efficiency, energy conservation and energy resource diversification and management.” As a nonprofit organization providing curriculum and training to Rhode Island teachers and students for over thirty-five years, NEED understands the importance of developing a thorough understanding of the science of energy, energy resources, energy consumption and energy conservation and efficiency. NEED’s vast portfolio of energy resources includes the science of energy, sources of energy, electricity, transportation, and energy efficiency and conservation with varying levels of depth across the K-Career spectrum.

This proposal to EERMC leverages the work completed by the EERMC and NEED and the creation of the ***Rhode Island Energy, Climate and You*** curriculum designed at 3 levels for the K-12 community both in traditional classrooms and in clubs and afterschool programs as well. NEED’s history of work in partnership with the Office of Energy Resources EERMC and National Grid provides a wealth of opportunity for teachers and students.

In addition, this proposal leverages NEED’s professional work with existing Rhode Island education standards aligned energy curriculum, teacher training, student leadership development, and evaluation. This proposal seeks to grow a robust teacher and student energy training program, continue high quality curriculum delivery, increased opportunities for teacher, and therefore student, engagement and provide the training opportunities needed to address the significant challenges local communities face related to climate change, energy and environmental justice, and public health. There is no debate that resources provided in a classroom or afterschool setting can engage teachers, students and families in learning more about energy in order to be a voice for change and awareness in the local community.

The Rhode Island Energy, Climate and You curriculum module brings together energy efficiency and conservation (both school and residential), building science, climate science, energy justice, and health for Rhode Island teachers, students and families. The curriculum provides a look into the science and social science aspects of these major issues including energy burden of families. The first workshop was completed with excellent results and positive teacher feedback and this proposal seeks to expand the effort with additional teacher training opportunities including summer workshops, virtual workshops and partial day workshops. This expanded training

component will strengthen the use of the curriculum in Rhode Island schools, especially Environmental Science, and nonformal education programs. The training should be expanded to include youth advocacy organization leaders and students, should the EERMC wish to include those two stakeholders in the training audience.

B. Work Plan and Scope of Work:

To support EERMC's education and outreach objectives NEED proposes five half-day educator workshops to increase educator capabilities around energy efficiency and climate change in the classroom and in out of school time programs or clubs. Ensuring that teachers receive the content knowledge and classroom skills needed to deliver the ***Rhode Island Energy, Climate and You*** curriculum is fundamental to the work plan. The training will help teachers engage students in learning about energy, energy efficiency and climate change in a more authentic and comprehensive way. Providing training, curriculum, and energy leadership development will allow for EERMC's objectives to be met with long-term success.

Teacher Training

- NEED seeks to target Rhode Island K-12 teachers and students for the work in this proposal. In both anecdotal and evaluation data gathered over time, NEED understands that energy education is often overlooked, poorly explained in the classroom and not effectively taught in many cases. NEED's pre-post teacher workshop data notes that teachers often have a limited understanding of energy and energy concepts, especially at the elementary level. Energy is not a strong theme in science or social studies standards, but the increase in interest in STEM education has allowed for more energy to be taught in the classroom. As always, energy is an excellent topic for afterschool or extracurricular programming. The ***Rhode Island Energy, Climate, and You*** curriculum provides the content and lessons needed. The training will provide the skills, comfort and confidence needed for teachers to effectively teach these energy topics.
- Using the model designed for the ***Rhode Island Energy, Climate and You*** training pilot workshops, NEED will organize and host five half-day trainings (2 in person and 3 virtual) for Rhode Island teachers and students. However, teachers seldom find it easy to participate in half-day trainings – sub plans are still required, substitute funds are still required, assimilating back into the school day halfway through the day isn't easy – why not offer a full day (at not a huge additional cost) opportunity. NEED hosts all variations of workshops and perhaps, EERMC will be willing to look at a series of workshop options that include half-days, full days, a full day over 2 half days, Saturdays, and also in person and virtual workshops. NEED has found that offering a virtual option reaches educators who would not otherwise be able to attend – expanding equity and access for the program.
- NEED also recommends hosting workshops for grade bands. It would be appropriate to host a primary/elementary workshop for only primary/elementary teachers and then a workshop for intermediate/secondary teachers.
- NEED finds that offering a calendar of workshops allows teachers to plan and allows for building of interest and momentum. We take evaluation data and teacher

comments/photos from the first workshop to enhance the recruitment for the remaining workshops.

- All workshops will include certification of hours for teacher professional development, breakfast, lunch, and substitute reimbursement.
- NEED hosted workshops are turn-key. NEED will handle recruitment, marketing materials, logistics and extensive evaluation.
- The budget is submitted to provide the *RI Energy, Climate and You* kit to participating teachers. This line item can be altered to provide more training if that is what EERMC prefers.
- NEED is also incorporating the new curriculum into its National Grid funded energy efficiency workshops.
- Proposed Agendas are Attached as an appendix.

Marketing and Outreach Strategy

- NEED recruits teachers and students to participate in training workshops via school networks, STEM teacher associations, and databases from the State of Rhode Island. Much of NEED's success with workshops has come from word of mouth – with educators, families and students sharing about their participation in NEED programs. Teachers are an exceptional network. They share, they encourage, they recruit. NEED will work with EERMC's communications team to share about the program offerings as well.
- NEED also recommends that the workshop calendar be posted on the EERMC website and perhaps shared in the Office of Energy Resources newsletters.
- NEED has in-house design capability and will provide design services for all collateral and recruitment. A sample workshop flyer is attached.
- NEED has a commitment from the Providence Public Schools to offer the program via its professional development programming for high school STEM educators.

Evaluation

- NEED will utilize a pre and post assessment for training that can be customized should EERMC have questions or concepts that the Council would like assessed. The responses are completed in a scanned format and reports of detail and summary provided to EERMC. The baseline to knowledge increase in some of NEED's recent training has been at least a 60% knowledge increase. In addition, the usability of curriculum and usage of curriculum will be assessed both at the workshop and 3 months post-workshop. These results will allow EERMC to see the impact of its investment.
- Sample evaluation data is attached.

Timeline

June 2022

Award of Contract

Agendas and Recruitment, and Evaluation drafted for EERMC review/branding

Report Submitted

July 2022

Workshops Scheduled (using school district calendars)

Report Submitted

August 2022

First Workshop

Report Submitted

September 2022

Report Submitted

October 2022

Second and Third Workshop

Report Submitted

Mid-Point Check in with EERMC

November 2022

Fourth and Fifth Workshop

Report Submitted

December 2022

Evaluation Summary and Final Report Presented to EERMC

EERMC/NEED meeting to review the year and consider future programming.

C The NEED Project – Company Profile

For over 40 years, NEED has focused its efforts on designing and delivering energy curriculum and training. This focus has allowed NEED to be best in class – with the only comprehensive energy curriculum available. This extensive portfolio of curriculum and training, as well as the organization’s skill set and network, has allowed for sustained growth in capabilities and assets to include programming across the country and internationally as well. NEED’s partners represent a cross-section of the energy sector with large investor owned utilities like National Grid, electric cooperatives, energy infrastructure companies like solar installers, energy efficiency engineering and design firms and energy agencies and organizations like the U.S. Department of Energy, the Energy Information Administration, the National Renewable Energy Laboratory, and the U.S. Department of Interior. NEED also works with state governments on similar projects including the State of Rhode Island, the Commonwealth of Kentucky and including EPA’s Pollution Prevention and Green and Health Schools efforts in those states.

An issue for NEED in this response to RFP however is the ISBE requirement. As NEED is a 501c3 nonprofit organization we are excluded from being able to identify as an ISBE company. Should the opportunity to ever register as an ISBE organization arise, NEED would gladly do so, but after much review at the state and national level, we are excluded from identification in either category due to our non-profit status.

Roles & Responsibilities

NEED believes in maintaining an efficient and effective team for program implementation. Because NEED supports many signature programs around the country, staffing and program implementation benefit from economies of scale and the opportunity to have the expertise of NEED's network of highly skilled energy and education professionals and partners.

The NEED team is comprised of veteran energy and education professionals including:

Mary Spruill, Executive Director: Mary has 30 years of experience in non-profit management and energy education having started with NEED out of high school, first as an intern and now as NEED's 3rd Executive Director in the organization's 41-year history. Throughout her career, Rhode Island programs have been part of her work in developing and training educators and students in the state for almost 25 years.

Emily Hawbaker, Curriculum Director: Emily guides and develops standards aligned curriculum that is accurate, comprehensive and up-to-date with current pedagogy and data. She is also a trained NEED facilitator. Emily is a former middle school science teacher.

Caryn Turrel, Curriculum Associate and CEM: Caryn serves on the team to assist in the development of curriculum and to provide support and guidance in energy efficiency and conservation efforts in schools and homes. She is a certified energy manager and former high school chemistry and physics educator.

Shannon Donovan, NEED Educator and STEM Coordinator for Scituate Public Schools: Shannon serves as a NEED curriculum advisor and facilitator for teacher and student workshops. She is passionate about Rhode Island's environment, energy efficiency and renewable energy. She is a former Rhode Island Teacher of the Year.

D. Relevant Experience

Working with utilities, state government agencies, federal government agencies (DOE, NREL, BLM, BOEM), energy efficiency programs, energy companies, and other NGOs, NEED has designed and delivered energy training and curriculum nationwide. NEED is currently implementing a number of programs similar to this proposed project including: the Exelon STEM Academy designed for young women from underserved communities in Philadelphia, Chicago, Baltimore and the District of Columbia; the Pathways to Solar program for the Sacramento Municipal Utility District and Urban League to bring unemployed, underemployed and emerging workforce individuals of color together for entry level training related to solar installation; energy efficiency workshops and training for National Grid; the Wind for Schools program for the

National Renewable Energy Laboratory (NREL) and the WaterPower project for NREL and the U.S. Department of Energy. In 2019, NEED launched a partnership with Prince George's County (Maryland) to provide energy training and workforce skills to 250 under-resourced youth for a six week summer program, the program expanded to 500 youth in 2020 (virtually) and 2021 (virtually). NEED has a decades long history of successfully managing cooperative agreements with federal agencies ranging from its \$1,000,000 project on Hydrogen for the U.S. Department of Energy, to the current NREL agreements in the range of \$50,000 - \$75,000 for energy, efficiency, renewables and workforce development.

For most of the last 35 years, NEED has been part of the Rhode Island classroom. OER and NEED have worked together to implement curriculum development, teacher training and student leadership development in Rhode Island with former students serving as adult mentors in the program today and a network of over 200 educators in the state.

E. Examples of Prior Work

NEED has quite a few examples of previous or ongoing projects similar in nature to the EERMC effort including our history with the Office of Energy Resources and National Grid. These programs offered teacher training, student workshops, classroom curriculum, student leadership development and evaluation. NEED served as a turn-key provided in of these programs. The recent effort to work with the EERMC resulted in the launch of the ***Rhode Island Energy Climate and You*** curriculum and teacher workshop. It is hoped that this proposal will allow for more workshops to be hosted in the coming school year.

Outside of Rhode Island, NEED has worked extensively with a five-party program in the State of Illinois that provides teacher workshops, classroom grants, hands-on kits, curriculum, and local Energy Fairs. The Energizing Student Potential program is the joint effort of Exelon, ComEd, Peoples and North Shore Gas, Nicor Gas and BP with a goal to increasing energy within the STEM classroom and development an understanding of energy and energy conservation/efficiency among Illinois teacher and students. This program was a 3 year program, now in year six reaching 1000 teachers and 115,000 students. The program has replicated to include Maryland, Pennsylvania and the District of Columbia.

In Virginia, working with the Virginia Department of Education and Dominion Energy, NEED designed and developed curriculum for Virginia's 6th grade classrooms to meet the energy requirements in Virginia's SOLs (standards of learning). This unit focused on the science of energy and Virginia's energy resources, provided hands-on kits, teacher training, student engagement, and evaluation.

F. Reference Information

U.S. Department of Energy – State Energy Program – Commonwealth of Kentucky

FAP111-44-00NP

\$75,000

Energy Efficiency Education

1. Agreements are ongoing for over 10 years, successful completed each year, careful coordination and communication with agency points of contact.
2. All progress was reported in a timely manner based on agreement requirements.
3. Eileen Hardy – Commonwealth of Kentucky - eileen.hardy@ky.gov

Office of Energy Policy, Office of the Governor – Commonwealth of Kentucky

FAP111-44-00NP

\$125,000

Kentucky Energy Tour for Teachers, Teacher workshops and Curriculum

1. Agreements are ongoing for over 10 years, successful completed each year, careful coordination and communication with agency points of contact.
2. All progress was reported in a timely manner based on agreement requirements.
3. Eileen Hardy – Commonwealth of Kentucky - eileen.hardy@ky.gov

U.S. Department of Energy – Energy Information Administration

19EI000193

\$39,140

Energy Industry Study Program – Intern and Employee Training

1. Agreement are ongoing for over 15 years, successfully completed each year, careful coordination and communication with agency points of contact.
- 2, All progress was reported in a timely manner based on agreement requirements
3. El'Martez Jones - el'martez.jones@eia.gov

G/H/I. Identification of Staff and Subcontractors

NEED has a team of education and energy professionals in its Virginia headquarters that will provide support for a portion of this program including workshop logistics, accounting, recruitment, outreach, curriculum distribution, kit distribution. Those individuals include:

Mary Spruill, Executive Director

Overall management of program, outreach support, training support

Emily Hawbaker, Curriculum Director

Caryn Turrel, Curriculum and Training Associate

Sandra Harben, Accountant

Budgeting and financial management

Wendi Moss, Training Coordinator

Workshop logistics, recruitment

Kim Swan, Evaluation Coordinator

Design and collection of evaluation data

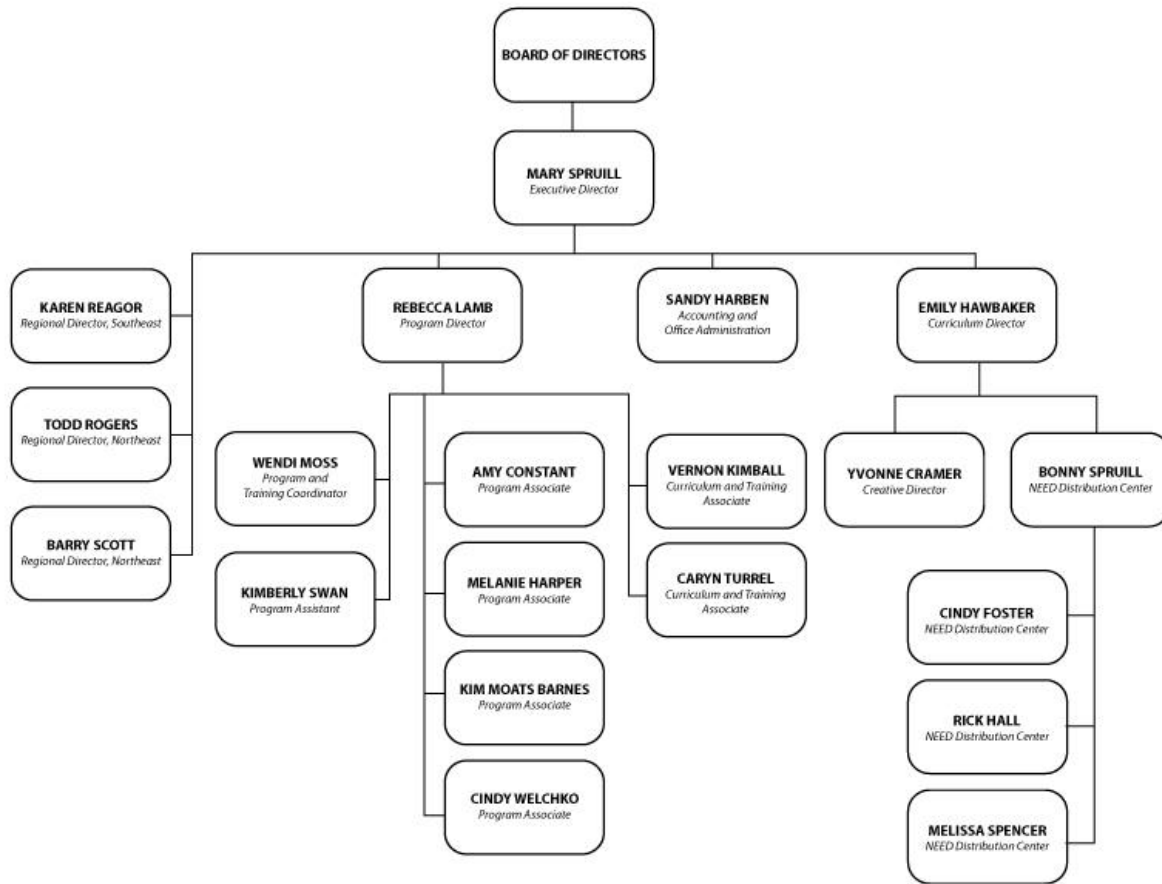
The NEED team for this project is comprised of veteran energy and education professionals including (resumes will be submitted separately):

Mary Spruill, Executive Director: Mary has 30 years of experience in non-profit management and energy education having started with NEED out of high school, first as an intern and now as NEED's 3rd Executive Director in the organization's 41-year history. Throughout her career, Rhode Island programs have been part of her work in developing and training educators and students in the state for almost 25 years.

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J. Conflicts of Interest

No known conflicts exist.

K. Litigation

No known litigation exists.

L. Investigation

No known investigations exist.

III Cost Proposal is Submitted Separately.

IV. ISBE Proposal is Submitted Separately.

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