

## EnergySec Workforce Plan Summary

**Overview:** EnergySec is a non-profit industry organization focused on the security of critical infrastructure. For more than a decade, EnergySec has supported industry efforts to improve its security posture through collaboration, educational events and training programs. Our leadership and staff have extensive industry experience, and we have developed a broad network of industry professionals that support our mission.

The critical shortage of cybersecurity professionals, particularly those with industry specific skills, is widely recognized. EnergySec has laid the foundation for a comprehensive program to address this issue. EnergySec's history, experience, and capabilities make it well qualified to operate workforce programs that grow and strengthen the cybersecurity workforce within our industry.

Our approach encompasses a broad section of the workforce lifecycle, beginning with efforts to increase the pipeline of future professionals, and continuing through the development of existing staff into experienced and capable experts. Our program design is summarized by four strategic goals:

- Ensure a robust pipeline of cybersecurity professionals available to energy sector organizations now and into the future.
- Develop strong candidates for current and future cybersecurity needs through a formal internship program that identifies, prepares, and places students into meaningful, short-term work assignments in the industry.
- Support the integration of new energy sector cybersecurity professionals via a structured training program and managed work experience that develops industry-specific knowledges, skills, and abilities.
- Increase the skill level of the existing energy sector cybersecurity workforce through targeted professional development offerings.

### Why EnergySec?

**Deep industry experience:** EnergySec's roots extend back to the early 2000's when it began as a voluntary organization of industry experts collaborating on security issues. Our founding leadership remains an integral part of the organization and provides decades of collective security experience security roles within the energy sector.

**Independent, Non profit:** EnergySec's purpose has always been to serve industry. Our independent, non-profit status supports this objective. Our workforce program is designed to further our mission of assisting industry to secure its critical systems.

**National breadth:** EnergySec is a national organization with membership and participation from all parts of the U.S. This positions us to execute a nationwide workforce development program that will benefit the entire industry.

**Cybersecurity is our mission:** Unlike other industry organizations, EnergySec has one mission: security. This focus makes us uniquely suited to build the cybersecurity workforce. Our workforce program is not just another project, it is central to our mission and our capabilities as an organization.

**We've already started:** EnergySec has invested resources over the past year to lay the foundation for this program. We have added leadership for the program, conducted research, established relationships with government agencies and academic programs, held discussions with industry leaders, and laid out plans for the program. We are now ready to execute.

**Goal 1: Ensure a robust pipeline of cybersecurity professionals available to energy sector organizations now and into the future.**

<p>Objective 1 EnergySec will build awareness and interest in cybersecurity as a viable profession in the high school arena.</p>	<p>Activities</p> <ul style="list-style-type: none"> <li>• Engage high school students in activities to interest them in cyber careers.</li> <li>• Provide high school career counselors with information (flyers, etc.) on cyber career pathways in critical infrastructure, particularly the energy sector.</li> <li>• Arrange opportunities for utility cybersecurity experts to speak with interested high school students about cybersecurity careers, specifically in the energy sector.</li> </ul>	<p>Deliverables</p> <ul style="list-style-type: none"> <li>• Model for a one-day cyber event for high schoolers, with an emphasis on energy sector professionals. Execute at least one such event to prove the concept</li> <li>• Materials for high school counselors on the merits and career pathways of a cybersecurity profession</li> <li>• Set mentoring/speaking opportunities through high school counselors for fall and spring of each school year</li> </ul>
<p>Objective 2 EnergySec will promote the cybersecurity profession to under-represented youth and young adults looking for career opportunities.</p>	<p>Activities</p> <ul style="list-style-type: none"> <li>• Collaborate with local community colleges and local workforce development boards to reach under-represented youth and young adults.</li> <li>• Showcase cybersecurity professionals in critical infrastructure careers.</li> </ul>	<p>Deliverables</p> <ul style="list-style-type: none"> <li>• One week Summer Bootcamp directed toward under-represented youth and young adults</li> <li>• Mentoring/career guidance for interested participants</li> </ul>
<p>Objective 3 EnergySec will establish relationships with community colleges, 4-year colleges/universities to facilitate engagement with students in cybersecurity programs.</p>	<p>Activities</p> <ul style="list-style-type: none"> <li>• Establish professional relationships with academic professors of cybersecurity</li> <li>• Establish formal contact with cybersecurity programs at academic institutions</li> <li>• Establish programs that engage students and promote participation in EnergySec internships</li> </ul>	<p>Deliverables</p> <ul style="list-style-type: none"> <li>• A model for formal engagement with academic institutions</li> <li>• Bi-monthly workforce newsletter to academic contacts and industry personnel</li> </ul>

<p>Objective 4 EnergySec will collaborate with government and industry groups to leverage existing resources and avoid duplication of effort.</p>	<p>Activities</p> <ul style="list-style-type: none"> <li>• Participate in National Initiative for Cybersecurity Education (NICE) working groups.</li> <li>• Partner with state and local workforce boards.</li> <li>• Leverage Department of Labor apprenticeship resources.</li> </ul>	<p>Deliverables</p> <ul style="list-style-type: none"> <li>• Establish and maintain formal contact with various agencies</li> </ul>
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**Goal 2: Develop strong candidates for current and future cybersecurity needs through a formal internship program that identifies, prepares, and places students into meaningful, short-term work assignments in the industry.**

<p><b>Objective 1</b></p> <p>EnergySec will ensure an adequate pool of internship candidates for industry positions.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Enlist college partners to promote EnergySec internship opportunities to students who have basic cybersecurity skills (NSA Centers of Academic Excellence).</li> <li>• Recruit summer interns from college and university cyber programs.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Printed outreach materials</li> <li>• Online outreach campaigns</li> <li>• Web-based signup forms</li> </ul>
<p><b>Objective 2</b></p> <p>Energy Sec will prepare prospective interns for industry assignments.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Provide courses that establish baseline industry knowledge for interns prior to beginning an internship.</li> <li>• Establish a mentoring program to connect students with current industry professionals.</li> <li>• Provide resources for ongoing education of students on industry topics.</li> <li>• Work with academic institutions to align curriculum with industry needs.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Online pre-internship courses</li> <li>• Mentoring program</li> <li>• Student community</li> </ul>

<p><b>Objective 3</b></p> <p>EnergySec will place and support a significant number of interns in meaningful, short-term cybersecurity positions within industry.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Integrate industry-specific skills and HR components by providing structured work models that multiple utilities can use to define intern opportunities within organizations.</li> <li>• Facilitate placement of students in internship opportunities (list of available positions, timelines, resume creation, etc.).</li> <li>• Provide ongoing intern support throughout the work experience to discuss learning goals, answer questions, and provide guidance.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Cybersecurity Internship Manual</li> <li>• Publish Internship Work Models for use by utilities</li> <li>• A replicable cybersecurity internship model for the energy industry</li> <li>• Internship Case Studies</li> </ul>
<p><b>Objective 4</b></p> <p>EnergySec will follow up with interns to encourage continued pursuit of energy sector careers, and to identify candidates for placement in apprenticeship-style roles within the energy sector.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Develop an intern interview evaluation form to be completed by EnergySec at completion of the internship.</li> <li>• Perform interviews with interns upon completion of their assignments to clarify learning objectives, identify next steps, and document lessons learned.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Evaluation form to be used upon completion of the internship</li> </ul>

**Goal 3: Support the integration of new energy sector cybersecurity professionals via a structured training program and managed work experience that develops industry-specific knowledge, skills, and abilities.**

<p><b>Objective 1</b></p> <p>EnergySec will develop a structured training program for entry- and mid-level cybersecurity workers that develops industry specific knowledge, skills, and abilities.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Identify and engage industry experts to assist in defining the knowledge, skills, and abilities to be developed in the training program.</li> <li>• Determine knowledge, skills and abilities necessary for an energy sector cybersecurity professional.</li> <li>• Identify minimum standards for an apprentice to enter the program.</li> <li>• Develop a pre-apprenticeship assessment to qualify candidates for the program.</li> <li>• Develop an apprenticeship manual that includes the work processes, term of training program, qualifications, wage scale, supervision, on the job training provisions and related learning instruction.</li> <li>• Identify existing training courses that map to the required KSAs.</li> <li>• Develop new training courses as needed to meet KSA objectives.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Apprenticeship Manual that details the structure and design of the program</li> <li>• EnergySec-provided related learning opportunities delivered through our online courses</li> <li>• Mapping of learning objectives to available training courses</li> </ul>
<p><b>Objective 2</b></p> <p>EnergySec will establish a formal, registered apprenticeship program for energy sector cybersecurity professionals based on the formal training program developed in objective 1.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Register the apprenticeship program with the Department of Labor.</li> <li>• Arrange for college credit for individuals completing the apprenticeship program.</li> <li>• Standardize the training program to be deliverable in multiple states and multiple utilities.</li> <li>• Direct and maintain the apprenticeship program.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• A nationally recognized credential through the U.S. Department of Labor</li> <li>• Required agreements with accreditation or other institutions to provide college credit for completion of apprenticeship program</li> </ul>

<p><b>Objective 3</b></p> <p>EnergySec will support diverse work experience opportunities for training program enrollees.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Work with industry, utilities, and related organizations to establish “exchange-student” programs that provide supplemental work experience not available at an individual’s employer.</li> <li>• Develop work experience models to ensure trainees obtain an adequate diversity of experience.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Brokered work experience opportunities</li> <li>• Work experience models</li> </ul>
<p><b>Objective 4</b></p> <p>EnergySec will ensure effective mentoring of industry trainees enrolled in workforce programs.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Develop a mentoring program to encourage and guide industry trainees.</li> <li>• Recruit industry experts to participate as mentors.</li> <li>• Network trainees with mentors who can successfully guide them in industry-related tasks.</li> <li>• Provide training and support to individual mentors as needed.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Mentoring Program Guide</li> <li>• Mentor training provided by EnergySec professional staff.</li> <li>• Community of trainees and mentors</li> </ul>

**Goal 4: Increase the skill level of the existing energy sector cybersecurity workforce through targeted professional development offerings.**

<p><b>Objective 1</b></p> <p>EnergySec will establish an online training platform and design industry-specific courses to upskill current utility staff in cybersecurity.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Design and deliver professional development courses to workers wanting to advance their careers.</li> <li>• Provide training courses to employers wanting to upskill their current workforce.</li> <li>• Conduct regular surveys of industry leadership to identify skills gaps that can be addressed by new educational offerings.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• Online courses directly related to industry needs</li> <li>• Regular surveys to assess skills gaps</li> </ul>
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<p><b>Objective 2</b></p> <p>EnergySec will produce regular educational webinars on various topics related to the cybersecurity of critical infrastructure, specifically the energy sector.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Identify and recruit industry experts to deliver short, online instructional webinars on various topics.</li> <li>• Produce webinars, both live and recorded, for use by individuals or organizations in the cybersecurity environment.</li> <li>• Provide EnergySec staff to answer questions concerning webinar information presented.</li> </ul>	<p><b>Deliverables</b></p> <ul style="list-style-type: none"> <li>• <b>Webinars, live and recorded</b></li> <li>• <b>Access to EnergySec staff</b></li> </ul>
<p><b>Objective 3</b></p> <p>EnergySec will organize week-long, instructor-led professional education sessions for utility cybersecurity staff.</p>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Determine topics for educational sessions.</li> <li>• Identify instructors/speakers who are subject matter experts within the topic field.</li> <li>• Schedule venue and related planning procedures.</li> <li>• Promote event to industry and cybersecurity staff.</li> </ul>	