PROJECT STATUS

BATTERY WORKFORCE INITIATIVE

March 2025

U.S. DEPARTMENT of ENERGY

Battery Workforce Initiative™

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INTRODUCTION

The Battery Workforce Initiative (BWI), led by the U.S. Department of Energy, has finalized its first products – skill profiles and curriculum outlines for production and maintenance occupations at cell manufacturing facilities. These materials were developed through an extensive consultation process that included plant visits, meetings with company subject matter experts, review of company training plans and materials, then detailed industry review and verification of the accuracy of the skill profiles.

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BWI used a formal process known as Job Task Analysis, which captures all of the information for each occupation in a spreadsheet that outlines the responsibilities of the occupation, and a list of all the tasks associated with each responsibility. The material also separates the tasks into levels corresponding to the experience and skills employees gain, which shows the minimum competencies that industry identified to begin work in that occupation, and then the additional competencies that make employees eligible for higher levels of responsibility.

OVERVIEW OF OCCUPATIONS

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For production occupations, the BWI developed a series of profiles for Machine Operator, which are differentiated by the stage in the production process in the cell factory, from start to finish.

1) **General Knowledge**, required of everyone, three areas of responsibility and 65 associated tasks

2) **Mixing**, seven areas of responsibility and 54 associated tasks

3) **Electrode Prep**, 16 areas of responsibility and 98 associated tasks

4) **Cylindrical Assembly**, 18 areas of responsibility and 109 associated tasks

5) **Pouch Assembly**, 19 areas of responsibility and 152 associated tasks

6) **Prismatic Assembly**, 10 areas of responsibility and 76 associated tasks

7) **Formation and Testing**, three areas of responsibility and 18 associated tasks

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The maintenance occupation BWI profiled is Machine Repairer, which details the knowledge and skill required to maintain and repair the battery-making equipment at each stage of the cell manufacturing process (as opposed to facility maintenance).

The information is presented for high-level characterization of four major areas of work assignments.

1) **Mechanical-Pneumatic-Hydraulic**, with nine areas of responsibilities and 94 associated tasks

2) **Electrical**, with six areas of responsibility and 98 associated tasks

3) **Electronics-Computing-PLC's**, with nine areas of responsibility and 69 associated tasks

4) **Fabrication-Machining-Welding**, with nine areas of responsibility and 94 associated tasks

CURRICULUM OUTLINES AND CURRICULUM DEVELOPMENT

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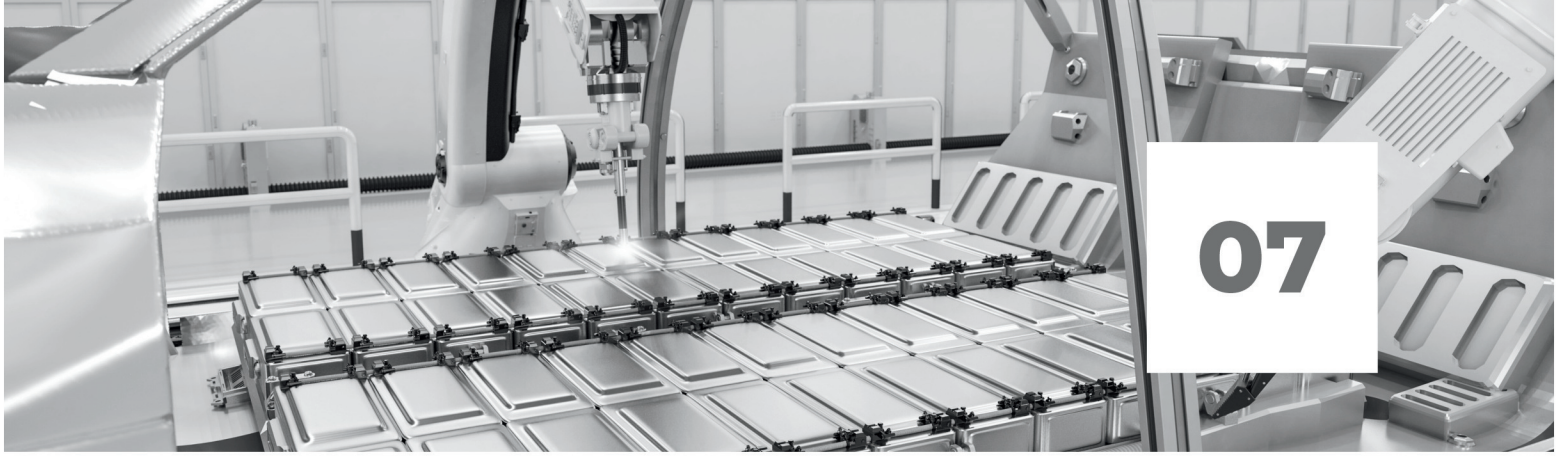
The completion of the Job Task Analysis provides the material necessary to develop Job Training Program Guidelines, training curricula and instructional materials. The BWI Job Task Analysis team has prepared curriculum outlines that will be used to guide this work.

The result will be teaching and skills development guides that provide employers, mentors and educators with the materials needed to train and upskill employees for work in battery cell facilities. This will involve an appropriate mix of classroom and on the job training for each occupation. The materials will be developed to support apprenticeship and non-apprenticeship training pathways, as well as guides for mentorship to support on the job training and document the acquisition of skills and knowledge.



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PILOT OPPORTUNITIES

The BWI has selected companies and facilities that are interested in piloting the use of the skills profiles for training and contributing to the development of instructional materials. BWI has worked with the pilot facilities to evaluate the effectiveness and success of the instruction curriculum. BWI is working on putting together a best practices instruction guide that will be available to be shared by battery manufacturers in the future.

Interested in Participating?

If your firm might be interested, please **contact BWI project manager Colleen Newman** at BatteryWorkforceInitiative@netl.doe.gov to set up an exploratory conversation.

NEXT STEPS FOR THE BWI

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Cohort of Educational Insitutions

BWI is working with other federal agencies to create a **cohort of educational institutions** that are involved or interested in training battery industry employees. We want to socialize the BWI and what it has achieved, and to hear from them how the BWI can help them in their mission. **We will be co-hosting an upcoming webinar**, inviting educational institutions to participate, and ask battery firms to refer their education partners to BWI so they can join the webinar.

Upstream Cell Manufacturing and Recycling Focus

Finally, BWI is **recruiting firms in recycling and upstream segments** to help develop training standards appropriate for these operations. We will use the same industry consultation process and formal Job Task Analysis, followed by the development of training and curricula. We are interested in firms providing materials for use in battery manufacturing, whether from first production or recycling. Please contact us if you would like to attend our upcoming virtual briefing and scoping meeting.

If your company or institution is interested in hearing more about participation in these next steps, or if you have any questions about the BWI, please contact us.

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