### TSC Category
Planning and Design

### TSC
Battery Systems Design Management

### TSC Description
Design and review battery systems according to capacity requirements and site constraints

<table>
<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
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<td>EPW-EPM-3048-1.1</td>
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<tr>
<td>Identify battery configurations and sizing appropriate for project requirements</td>
<td>Design battery systems for integration to solar Photovoltaic (PV) units and/or the power grid</td>
<td>Formulate strategies to ensure battery system designs meet regulations and guidelines and drive the integration of battery systems with solar Photovoltaic (PV) units and/or the power grid</td>
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### Knowledge
- Fundamentals of battery systems design
- Building codes related to distributed generation
- Battery storage capacity requirements
- Power grid systems
- Site constraints
- Inverter requirements
- Power controller operating principles
- Site energy requirement
- Calculation techniques
- Interfacing requirements for Low-Voltage (LV) and/or Medium-Voltage (MV) electrical power systems
- Electricity demand charges
- Battery systems available in the market
- Software for integrating Energy Storage Systems (ESS) with solar PV systems
- Commissioning and testing requirements for batteries with battery converters
- Optimal planning methods
- Algorithms for battery performance optimisation
- Electricity demand and generation modelling techniques
- Distribution network operating principles
- Distributed generation regulations and guidelines
- Electrical and building codes
- Emerging battery technologies
- Best practices for battery design management
- Battery design management trends
- Laboratory tests and onsite test for controls

### Abilities
- Identify factors at sites that affect battery sizing and configurations
- Select battery systems that meet site requirements
- Drive the integration of battery system designs with existing solar PV
| **SKILLS FRAMEWORK FOR ENERGY AND POWER**  
**TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT** |
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<tbody>
<tr>
<td>• Identify battery configurations and sizing according to project requirements</td>
<td>• Identify battery systems configurations to interface with other distributed energy sources and the grid</td>
<td>systems and/or power grid</td>
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<tr>
<td>• Perform calculations for energy requirements for site</td>
<td>• Design integration of Energy Storage Systems (ESS) with solar PV systems and/or power grid</td>
<td>• Provide technical advisory on complex battery design management issues</td>
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<td>• Perform battery system optimisation calculations</td>
<td>• Formulate strategy to ensure battery designs meet regulations and guidelines</td>
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<td>• Refine sizing of battery systems based on optimisation calculations</td>
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<td>• Provide work around methods for complex site constraints to meet battery systems design requirements</td>
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