

Test Plan

Project Name: ENSEK Energy Corp – Buy and Sell Energy

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Document History:

Release No.	Date	Author	Revision description
1.0	01/08/2025	Ashwini Raut	Initial draft

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1. Introduction

- **Purpose of this Document:**

This Test Plan outlines the strategy, scope, objectives, and approach for testing the Buy and Sell Energy Commodities functionality on the trading portal developed for ENSEK Energy Corp. The platform enables users to trade energy commodities by buying and selling to capitalize on price fluctuations.

Note:

The Sell module is currently under development and is not included in this testing cycle

The primary goal of this test plan is to ensure that the portal meets all defined functional and non-functional requirements with a strong emphasis on data accuracy, system reliability, and security.

- **Scope of Testing:**
 - **In scope:**
 - Home page
 - About Page/About Us Page
 - Register
 - Login
 - Buying Workflow
 - **Out of scope**
 - Selling workflow
 - Contact
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2. Test Items

- Customer login and registration
 - Buy some energy Dashboard
 - About us page
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3. Test Objectives

- Validate that users are able to successfully register an account.
 - Confirm that users can log in with valid credentials, including third-party authentication integration.
 - Ensure that energy types, prices, and quantities are displayed correctly.
 - Verify that users can purchase the required number of energy units.
 - Ensure that purchase transactions are only processed when sufficient quantity is available.
 - Confirm that appropriate error messages are displayed when users attempt to buy invalid or unacceptable quantities.
 - Validate that discounts are displayed according to business rules and eligibility criteria.
 - Confirm that all buying actions are processed accurately and that the system reliably updates inventory and displays the correct purchase confirmation.
 - Verify that the “About” page navigates correctly and displays the expected company or application information.
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4. Test Approach

- **Manual Testing:**
Validate user interface flows, error handling, user registration, and login functionalities through exploratory and scripted test cases.
 - **Automated Testing:**
Automate key UI workflows including registration, login, and error scenarios to ensure quick regression cycles and consistent validation.
 - **API Testing:**
Verify the functionality, reliability, and correctness of all relevant API endpoints supporting the application.
 - **Database Testing:**
Validate the accuracy and integrity of energy inventory data, ensuring correct updates and retrievals.
 - **Integration Testing:**
Test the seamless integration of external login/authentication systems with the platform.
 - **Regression Testing:**
Perform comprehensive regression testing during each sprint and before major releases to ensure existing functionality remains stable.
 - **User Acceptance Testing (UAT):**
Conduct UAT sessions with a pilot group of internal traders to validate the system against business requirements and real-world usage scenarios.
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5. Test Environment

Note: The details below are for draft purposes only. It is strongly recommended to discuss and finalize the test environment with the project team before execution.

- **Operating Systems:**
Windows 10 and macOS Ventura (latest stable versions)
- **Browsers:**
Google Chrome (latest stable release)
Mozilla Firefox (latest stable release)

- **Tools:**
 - Selenium WebDriver for UI automation
 - Playwright for API testing
 - JIRA for defect tracking and test management
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6. Test Schedule

Task	Start Date	End Date	Responsible
Test Planning	08/01/2025	08/01/2025	QA Lead
Test Case Design	08/01/2025	08/01/2025	QA Team
Test Execution	08/01/2025	08/01/2025	QA Team
Bug Reporting & Fixing	08/01/2025	08/01/2025	Dev & QA
Test Closure	08/01/2025	08/01/2025	QA Lead

7. Test Deliverables

- Test Plan Document
 - Detailed Test Cases
 - Selenium Script
 - API Test Scripts (Postman/Selenium)
 - Defect Reports (JIRA)
 - Test Summary Report
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8. Entry and Exit Criteria

- **Entry Criteria:**
 - All requirements finalized and approved
 - Test environment is ready and accessible
 - Test data is created and validated

- **Exit Criteria:**
 - All critical test cases passed
 - No high-priority bugs open
 - Test summary report approved
 - Final sign-off from QA Lead and Product Owner

9. Risks and Mitigation

Risk	Impact	Mitigation
Delayed environment setup	High	Coordinate early with DevOps
Delayed API availability	High	Mock endpoints for early testing
Energy feed latency	Medium	Simulate Market data for tests
Unclear requirements	Medium	Schedule clarification meetings
Test data corruption	Medium	Automate test data resets after runs

10. Approval

Name	Role	Signature	Date
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[Name] QA Lead

[Name] Project
 Manager