Ensek Exercise Test Plan

1. Test Objective

The objective is to test the functionality of the "Buy Energy" webpage and ensure the process of purchasing energy through the Ensek Exercise website works as expected. The primary goal is to validate input data, confirm proper navigation, and verify that transactions are completed successfully. This will include manual exploratory testing, boundary checks, and data validation.

URL: https://ensexercisestationandidatest.azurewebsites.net/Energy/Buy

2. Scope

In Scope:

- Testing functionalities within the Ensek Exercise website specifically related to:
  - Buy Energy page
  - Purchase Confirmation page

Out of Scope:

- Non-Edge browsers
- Middleware
- Database
- Any functionality or web pages that do not relate to energy purchasing

3. Test Environment

- Browser: Edge (Chromium) version 115.0.1901.200 (64-bit)
- Operating System: Windows 11 VM
- Platform: Azure website
- Tools:
  - Browser Developer Tools

- API interaction

4. Test Techniques

- Manual Exploratory Testing:

Charter-based testing to explore features and identify defects.

- Data Testing:

Ensure that the input and resulting data (such as quantities) match expected values, including boundary testing.

- Data Validation:

Validate form entries such as energy quantities against defined numeric ranges and handle special characters properly.

5. Approach

1. Navigation:

- Navigate to the Buy Energy webpage.
- Explore the content of the "Buy Energy" page, ensuring all elements load and display correctly.

2. Form Entry:

- Enter valid and invalid data into the Buy Energy form.
- Validate that energy quantities (both positive and negative) are correctly handled.
- Test boundary conditions for energy quantity (e.g., minimum and maximum values).
- Confirm that the correct data validation error messages appear when invalid data is submitted.

3. Transaction Process:

- Complete the energy purchase process.
- Validate that the update of energy quantity is successful.

- Validate that the Purchase Confirmation page displays the correct purchase data.

4. Stress Testing:

- Attempt to break the system by entering invalid or edge-case data and observe the behaviour.

5. Feedback and Bugs:

- Record any bugs or issues encountered during the testing.

6. Test Cases

1. Page Content Validation:

- Explore the "Buy Energy" page to ensure the expected page content is correctly displayed.

2. Form Field Validation:

- Explore the "Number of Units Requested" field by entering various values.
  - Test numeric values (within range, outside range, negative values).
  - Validate non-numeric values, special characters, and decimal numbers.
  - Ensure the system only accepts valid whole number entries.

3. Energy Purchase:

- Simulate purchasing gas, oil, and electricity using different units to confirm the system accepts valid quantities and shows correct remaining energy values.

4. Reset Functionality:

- Test the reset button on the Buy Energy form and verify if the form returns to its original state.

7. Risks and Assumptions

Assumptions:

- Energy quantity fields will only accept positive, whole numeric values that are within defined

bounds.

Risks:

- Assumptions about energy validation rules may be incorrect.

- No access to backend databases to validate data post-purchase, limiting the scope of validation.

- Only able to test frontend functionality, thus unable to confirm complete backend processes.

8. Known Limitations

- Testing is restricted to the frontend without backend validation.

- Assumptions made regarding energy validation rules may lead to inaccuracies in testing if those rules differ from reality.

9. Reporting

- Defects: Any defects or issues will be logged and reported with accompanying evidence such as screenshots and steps to reproduce.

- Test Results: Test results, including pass/fail status, will be reported and documented.