requirements form

Admin Architects

Contents

[Executive Summary for the Project Owner 2](#_Toc183461581)

[Introduction 3](#_Toc183461582)

[Requirements 4](#_Toc183461583)

[*Functional Requirements* 4](#_Toc183461584)

[*Non-Functional Requirements* 5](#_Toc183461585)

[*MoSCoW Prioritization* 6](#_Toc183461586)

[LESP 6](#_Toc183461587)

[Conclusion and Future Work 9](#_Toc183461588)

[Appendix 10](#_Toc183461589)

[*Ethics form* 10](#_Toc183461590)

[*BMC* 10](#_Toc183461591)

[*Meeting minutes:* 10](#_Toc183461592)

[*DPIA* 10](#_Toc183461593)

[*GitHub Repo link* 10](#_Toc183461594)

# Executive Summary for the Project Owner

The Fennex ROI Calculator is a tool that is designed to streamline the process of evaluating the Return on Investment (ROI) for digital transformation in the energy sector. With the focus on three energy sectors Wind, Hydro, and Oil & Gas the calculator simplifies complex ROI calculations, provides actionable data visualisations, and helps businesses make informed decisions about transitioning to digital technologies.

The document Outlines the project requirements, the Legal, Ethical, Social, and Professional considerations, and the future direction of the system. It highlights the challenges addressed, the scope of the solution and the commitment to delivering a scalable, secure, and user-friendly tool that aligns with modern industry standards.

# Introduction

Digitisation is transforming industries worldwide, and the energy sector is no exception. Companies face increasing pressure to adopt digital technologies to improve efficiency, reduce costs, and remain competitive. However, understanding the financial implications of such transactions can be intimidating as it often involves complex calculations and the need for sector-specific insights.

The Fennex ROI calculator addresses this problem by providing a simple, intuitive, and effective platform for calculating the ROI. It allows the users to input relevant cost and benefit parameters then detailed generated reports to visualize the data though customisable charts.

The scope of this project includes features such as secure user authentication, sector-specific calculations, customisable data virtualisation, and the ability for users to save and retrieve calculations. The target audience includes energy companies looking for simple and effective ways to transition to or evaluate digital technologies.

# Requirements

## Functional Requirements

**User Authentication and Access Control**

The platform requires a secure login and account creation for users to access personalized features, which includes:

* **Secure Login:** Users must securely log in with email and password credentials. This helps ensure data security and personalisation for each user
* **Account Types:** The system should differentiate between free and premium accounts, unlocking additional features for premium users. Premium users gain access to additional features such as unlimited storage and advanced data virtualisation. This segmentation Provides Flexibility for various user needs.

**ROI Calculators**

The system includes calculator tailored for three energy sectors: Wind, Hydro, and Oil & Gas. Each calculator allows users to input:

* **Cost Parameters:** Initial investment, operational costs, and maintenance costs.
* **Benefit Parameters:** Expected revenue, energy efficiency, and cost savings. The system computes ROI using the formula:  
  **ROI (%) = [(Net Profit) / Total Costs] × 100**  
  Results are displayed in a clear, sector-specific manner with data breakdowns.
* **Sector-Specific Reports:** Results are displayed in a clear, tailored format to address the unique needs of each energy sector.
* **Free Account Limitations:** Free account users can only generate three calculation results per day, which encourages active engagement while highlighting the benefits of a premium subscription for higher usage needs.

**Data Visualization**

The platform provides interactive graphs and charts to visualize ROI results: Features include:

* **Basic Visualisations:** All users can access pie charts for cost vs. profit comparisons and bar graphs for year-on-year ROI. These graphs provide essential insights briefly.
* **Advanced Features for Premium Users:** Premium users can unlock scatter plots, trend analyses, and other sophisticated visualizations. These advanced tools allow for deeper analysis and comparison of multiple scenarios, offering significant value to decision-makers.

**Save and Retrieve Functionality**

Users can save their calculations to revisit or refine later. Features Include:

* **Free Account Storage:** Free accounts can save up to three calculations, promoting engagement while maintaining scalability.
* **Premium Account Storage:** Premium accounts have unlimited storage, enabling comprehensive tracking of long-term projects.
* **Account Access:** Saved calculations are accessible from the Account page, ensuring users can revisit or refine their data easily.

**Contact Us Feature**

A contact us page allows the user to:

* **Inquiry Submission:** Users can submit questions or feedback via an integrated form. Access location details via an embedded map.
* **Location Details:** An embedded map provides quick navigation to relevant company offices or service centres.

**Account Management**

* **Profile Editing:** Users can update their personal information and preferences.
* **Subscription Upgrades:** A link to an external payment gateway allows users to seamlessly upgrade their accounts to premium, unlocking additional features. View and manage saved calculations in their account dashboard.
* **Dashboard Access:** The Account page includes sections for saved calculations and favourited results, which are stored separately for quick access to important data.

## Non-Functional Requirements

**Performance**

* **Calculation Speed:** ROI calculations must be processed within 2 seconds to maintain a smooth and efficient user experience.
* **Visualisation Load Time:** Graphs and charts should load instantly after calculations, ensuring minimal delay for users.

**Usability**

* **Intuitive Navigation:** The interface is designed for simplicity, with clear navigation between calculators, account settings, and contact pages.
* **Accessibility Features:** Accessibility features include high-contrast themes and screen reader compatibility.

**Security**

* **Data Encryption:** Data is encrypted both at rest and in transit.
* **Compliance:** The system fully complies with GDPR, including features like consent-based data collection and options for users to delete their data.

**Scalability**

* **Concurrent Users**: The architecture supports increasing user numbers, ensuring stable performance with up to 10,000 concurrent users.

**Compatibility**

* **Cross-Platform Support:** The system is optimized for major browsers (Chrome, Edge, Firefox) and mobile devices.

**Availability**

* **Uptime Guarantee:** Hosting ensures 99.9% uptime, with regular backups to prevent data loss.

## MoSCoW Prioritization

**Must Have:**

* Login and user authentication.
* ROI calculators for Wind, Hydro, and Oil & Gas.
* Basic data visualization (e.g., pie charts, bar graphs).

**Should Have:**

* Save and retrieve functionality.
* Premium account features such as advanced graphs and unlimited storage.

**Could Have:**

* Exporting results as PDF or Excel.
* Support for more energy sectors (e.g., Solar).

**Will not Have:**

* Predictive analytics or AI-driven recommendations in this iteration.

# LESP

The Fennex ROI Calculator is designed to comply with relevant legal frameworks, ensuring users' rights and data security are upheld:

**Legal**

* **Data Protection**: The system complies with the GDPR regulations to ensure that all the user data is handled securely through encryption protocols and stringent access controls. User consent is required for data collection, and they are empowered to delete their data upon request, promoting privacy rights.
* **Copyright and Licensing:** Any third-party libraries or frameworks used in development are properly licensed to avoid infringement. By respecting intellectual property laws, the project ensures ethical usage of external resources while maintaining the originality of proprietary features.
* **Terms of Use and Privacy Policy:** The platform includes comprehensive Terms of Use and a Privacy Policy, detailing how data is collected, stored, and used. These documents offer transparency and legal protection for both users and developers, ensuring mutual understanding of platform usage.

**Ethical**

Ethical principles guide the system's design and operations, prioritizing user trust and fairness:

* **Transparency:** Users are clearly informed about how their data will be used. The tools avoid practices like data monetization without explicit consent. The platform explicitly avoids practices like data monetization without clear and explicit user consent, fostering trust.
* **Fair Access:** The basic version of the tool is free to ensure small and medium enterprises (SMEs) can benefit without financial barriers.
* **Avoiding Bias:** Calculations and results are based purely on input data with no algorithmic bias introduced

**Social**

The project delivers positive societal contributions by addressing accessibility, sustainability, and industry impact:

* **Accessibility:** The platform includes features to ensure usability for individuals with disabilities, such as adjustable font-sizes and increase page size which the search engine provides
* **Sustainability:** By promoting digital transformation, the tool indirectly contributes to reducing paper waste and improving operational efficiency in the energy sector.
* **Industry Impact:** Encourages modernization in the energy sector, allowing companies to make data-driven decisions, which supports the economic growth and technological innovation. This aligns with global efforts to create a more sustainable energy infrastructure

**Professional**

Compliance to professional standards ensures that the Fennix ROI calculator remains reliable, secure, and continuously improving:

* **Standards Compliance:** Development follows best practices for secure coding and user interface design, ensuring the tools meet industry standards.
* **Professional Responsibility:** Developers maintain accountability for accuracy and functionality of the tools, with regular testing and updates.
* **Continuous Improvement:** Feedback from users is actively sought to improve the system over time aligning with professional commitments to user satisfaction

# Conclusion and Future Work

The Fennex ROI Calculator addresses a critical need for simplifying the ROI evaluation in the energy sector. By defining the clear requirements and complying with the industry standards, the project will ensure a user-friendly, secure, and scalable tool that adds value to the energy companies.   
  
The future work includes,

Developing the comparison tool to help users have a better understanding of what other energy sectors rate of investment is in comparison to their own.

A.I. Predictive Analysis to help the user have an estimate of whether the sector would generate profits or potentially end up being a loss for the company in the long run.

# Appendix

## Ethics form

* [Stored within GitHub Repo](https://github.com/CrunchySubstances/CM2112-Group-Assessment-FENNEX-ROI/blob/main/Ethics%20Form.docx)

## BMC

* [Stored within GitHub Repo](https://github.com/CrunchySubstances/CM2112-Group-Assessment-FENNEX-ROI/blob/main/Business%20Model%20Canvas.png)

## Meeting minutes:

* [Stored within GitHub Repo](https://github.com/CrunchySubstances/CM2112-Group-Assessment-FENNEX-ROI/blob/main/Admin%20Architects%20Meeting%20Minutes.docx)

## DPIA

* [Stored within GitHub Repo](https://www.github.com/CrunchySubstances/CM2112-Group-Assessment-FENNEX-ROI/blob/main/Data%20Protection%20Impact%20Assessment.docx)

## GitHub Repo link

* [Fennex ROI Group Assessment Github Link](https://github.com/CrunchySubstances/CM2112-Group-Assessment-FENNEX-ROI/tree/main?tab=readme-ov-file)