UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

A PROJECT MANAGEMENT PLAN TO FOSTER YOUTH DEVELOPMENT THROUGH THE INTEGRATION OF RENEWABLE ENERGY IN THE COMMUNITY CENTRE OF TRENCH TOWN, JAMAICA

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DEDICATION

To my parents, Hope and Tyrell, unwavering in their support and conviction in the power of higher learning, this Final Graduation Project is a testament to their investment in me and my education.

To my nephew and niece, Phillip-Alexander and Arianna may you always remember you are able to do all things through Christ who strengthens you.

And to my husband, Kemar, this degree is a reflection of not only my journey but also the unwavering support you've provided. It's as much yours as it is mine.

"For I know the plans I have for you,' declares the Lord, 'plans to prosper you and not to harm you, plans to give you a hope and a future. '" — Jeremiah 29:11

"Commit to the LORD whatever you do, and he will establish your plans." Proverbs 16 vs 3.

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Someone once told me “Feel the fear and do it anyways” I definitely started this journey with a lot of fear and anxious thoughts, but the Lord constantly reminded me that I was not given a spirit of fear but of power and love and a sound mind. To Him, the author and finisher of my fate I owe everything.

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ABSTRACT

The objective of this document is to develop a Project Management Plan for the Planning Institute of Jamaica's Community Renewal Programme. This is to foster youth development through the integration of renewable energy in the community centre of Trench Town, Jamaica. This project advances goals 1, 3, and 4 of Jamaica's National Development Plan, which states: Jamaicans are empowered to achieve their fullest potential; Jamaica's economy is prosperous; and Jamaica has a healthy natural environment (Vision 2030 Jamaica, 2021). The Ministry of Education and Youth (2019) has outlined in their youth policy that Jamaica's youth are negatively impacted by gaps in quality education and training, and they are also not visible in environmental causes (Ministry of Education and Youth, 2019, p.19-20). The implementation of this project seeks to address those two issues.

To increase the overall success rate of this project, the Project Management Institute's best practices will be integrated in the development of a Project Management Plan. It will include the Project Charter and the following Management Plans: Scope Management, Schedule Management, Cost Management, Communication Management, Stakeholder Management, Quality Management, Risk Management, Procurement Management, and Resource Management. The research methodologies used are Qualitative and Mixed Methods.

The development of the project management plan results in improving the company's strategic alignment and flow of information through its organizational structure and will also improve stakeholder relationships. This increases the project's success rate as the project management plan provides guidelines, templates, and a framework to achieve the main objectives. It also provides lessons learned that will apply to future projects.

Key words: Project, Climate Change Adaptation, Renewable Energy, Solar Energy Socio-Economic Development, Youth Development

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ABBREVIATIONS AND ACRONYMS

- CRP Community Renewal Programme
- CDC Community Development Committee
- FGP Final Graduation Project
- GPM Green Project Management
- PIOJ Planning Institute of Jamaica
- PMBOK Project Management Body of Knowledge
- PMI Project Management Institute
- SDG Sustainable Development Goals
- SOW Scope of Work
- TOR Terms of Reference
- UCI Universidad Para La Cooperacion Internacional
- WBS Work Breakdown Structure

EXECUTIVE SUMMARY

Jamaica, known for its vibrant culture and picturesque beaches, faces a pressing energy challenge that affects both its economy and its people (Marsh, 2023). Though the country, based on its location, has extensive access to renewable energy, in particular, solar energy, it dominates the use of fossil fuels to create energy. The country has however developed policies and plans aimed at increasing the use of renewable energy for electricity generation. The integration and implementation of these policies and plans need to be heavily invested in youth, as they will become the leaders and main decision makers of the country. As such, it is important to inculcate a spirit of civic pride and nation building to create positive impacts in the years to come. It is through the Planning Institute of Jamaica's strategic positioning in policy development and its Community Renewal Programme's focus on volatile and vulnerable communities that a project of this nature has been developed. The overall objective of the Community Renewal Programme (CRP) is to contribute to inclusive growth and equitable national development by fostering socio-economic well-being and enhancing the quality of the lives of residents of volatile and vulnerable communities (The Planning Institute of Jamaica, 2019).

The purpose of this Final Graduation Project is to develop a Project Management Plan for the Planning Institute of Jamaica's Community Renewal Programme. The project is aimed at fostering youth development through the integration of renewable energy. With an estimated 23% of Jamaicans living in poverty, we must partner with young people to tackle climate change through advocacy collaborations and emerging jobs and employment opportunities to bolster mitigation efforts ("Prepare youth for a climate-resilient, poverty-free future," 2023). The Programme has experienced challenges in the past such as schedule delays and going over budget for none use or partial use of a Project Management Plan in keeping with the standard of the Project Management Institute.

The Final Graduation Project's general objective was to develop a Project Management Plan in keeping with the standards associated with the Project Management Institute to foster youth development through the integration of renewable energy in the community centre of Trench Town, Jamaica. The FGP has eleven specific objects and they are as follows: 1. To create a Project Charter to provide a high-level documentation of the project and enable the authorization of the Project Manager, 2. To develop a Scope Management Plan to identify and document all work that would render the project complete, 3. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored, and controlled to facilitate the timely completion of the project, 4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun, 5. To design a Stakeholder Management Plan to identify all individuals, groups, or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle, 6. To design a Communications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed, 7. To develop a Quality Management Plan to identify and determine how the quality standards will be managed throughout the project, 8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored, 9. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project, 10. To develop a Resource Management Plan to identify the team and physical resources and how they

should be assigned, managed, and controlled throughout the project, 11. To include regenerative and sustainability practices in project activities to create positive impacts in the environment.

A Qualitative and Mixed Methods approach was used to conduct the research required to create the project management plan. This included interviews with key stakeholders, surveys of key stakeholders and information taken from secondary sources such as the Project Management Book of Knowledge (PMBOK) Guide, Trench Town Baseline Study, and credible websites.

This research has enabled the author to detail all objectives as above-mentioned into a comprehensive project management plan. The plan adheres to the Project Management Institute's (PMI) best practices, providing a clear roadmap for effective project planning, execution, monitoring, and control. This structured approach will guide the project towards achieving its overall goals.

Building on this success, we recommend the Planning Institute of Jamaica's Community Renewal Programme incorporate PMI standards into all future endeavors. Staff training to enhance project management understanding and appreciation is also highly recommended. Additionally, establishing a lessons-learned database would foster continuous improvement in future projects. Finally, conducting a post-project evaluation remains crucial to measure the initiative's impact.

1 INTRODUCTION

1.1. Background

The PIOJ is the foremost planning agency of the government that seeks to initiate and coordinate the development of policies, plans, and programmes for the sustainable development of Jamaica (The Planning Institute of Jamaica, 2019). As a result of the organization's unique and strategic positioning, it provides data-driven mechanisms to help support the Government's decision-making. It considers areas of focus such as social and economic issues and formulates the way forward integrating the use of elements associated with sustainable development. This would have led to the Government's creation of the Community Renewal Programme which is housed within the PIOJ.

The Community Renewal Programme is focused on the top one hundred (100) most volatile and vulnerable communities across five of Jamaica's parishes. The overall objective of the CRP is to contribute to inclusive growth and equitable national development by fostering socio-economic well-being and enhancing the quality of the lives of residents of volatile and vulnerable communities (The Planning Institute of Jamaica, 2019). The programme has a key focus on youth as they are both the main committers and victims of crime. It is through this and the PIOJ's focus on sustainable development that the project is being developed to foster youth development through renewable energy. A project management plan will be developed as part of the Final Graduation Project (FGP) to create a structured and strategic approach for the Community Renewal Programme in the planning, implementation and monitoring of this project. The use of the project management plan will increase the chances of project success, as it serves as a guideline to foresee challenges and creates the opportunity for adjustments to be made in a

formalized manner to reduce the negative repercussions that could impact the achievement of the project's objective.

1.2. Statement of the problem

It is known that the youth are the future generation of any country and will eventually become the future leaders and change-makers. However, whether the impact they make is positive or negative will depend on the investment made in their development. Wilson-Smith (2022) shares that

> while the youths are assets, if they are not adequately empowered, trained and positively engaged they can become a society's worst nightmare! It is therefore imperative that as a nation, we use research-based and policy-driven approaches to engage our youths to get the positive outcomes we desire. (Wilson-Smith, 2022, para. 1)

With an estimated 23% of Jamaicans living in poverty, we must partner with young people to tackle climate change through advocacy collaborations, emerging jobs, and employment opportunities to bolster mitigation efforts ("Prepare youth for a climate-resilient, poverty-free future," 2023).

The Planning Institute of Jamaica's Community Renewal Programme aims to tackle this issue through the engagement of youth in one of its most volatile and vulnerable communities. This, while supporting the country's National Development Plan - Vision 2030 Jamaica, more specifically, goal number four (4) aimed at creating a healthy and natural environment. This will be incorporated through the use of renewable energy. The CRP has not always included the PMI's definition of a Project Management Plan. This has created challenges in maintaining the PMI's best practices. As youth development and clean energy are two key areas to foster the

country's growth, the researcher seeks to develop a Project Management Plan in accordance to the standards of the Project Management Institute to increase the possibilities of the project's success.

1.3. Purpose

The Planning Institute of Jamaica's Community Renewal Programme, though not an implementing entity has the main role for the coordination of social projects within vulnerable spaces. In the development of these social projects, the use of the Project Management Institute's (PMI's) definition of a Project Management Plan is not always used, this often has resulted in scope creep, cost overruns, and schedule delays. According to Rushton, 2023, organizations that use project management practices consistently have a 92% success rate in meeting project objectives.

It is for these reasons that a Project Management Plan will be developed to foster youth development through the integration of renewable energy in the community centre of Trench Town, Jamaica. The project will showcase the elements that will be conducted under the five process groups and how to implement them. This will be done through the knowledge areas of: Scope Management, Schedule Management, Cost Management, Communication Management, Stakeholder Management, Quality Management, Risk Management, Procurement Management, and Resource Management. It should be noted that the Integration Management Plan will be completed using the project charter, which provides a high-level overview of this project. This is useful as it outlines all key areas of the plan.

The development of this project management plan will set a precedent for future projects. It will help to document lessons learned and best practices which can be further

integrated. This will also help to formalize the organization's processes on how it deals with projects and also improve the challenges faced as mentioned above.

1.4. General objective

To develop a Project Management Plan in keeping with the standards associated with the Project Management Institute to foster youth development through the integration of renewable energy in the community centre of Trench Town, Jamaica.

1.5. Specific objectives

1. To create an Integration Management Plan using a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager
2. To develop a Scope Management Plan to identify and document all work that would render the project complete.
3. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored and controlled to facilitate the timely completion of the project.
4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.
5. To design a Stakeholder Management Plan to identify all individuals, groups, or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle.
6. To design a Communications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed.
7. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project.

8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored.
9. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project.
10. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed, and controlled throughout the project.
11. To include regenerative and sustainability practices in project activities to create positive impacts on the environment.

2 THEORETICAL FRAMEWORK

2.1 Company/Enterprise framework

2.1.1 Company/Enterprise background

The Planning Institute of Jamaica (PIOJ) is a government entity that has the mandate to initiate and coordinate the development of policies, plans, and programmes for the sustainable development of the country (The Planning Institute of Jamaica, 2019). Originally established as the Central Planning Agency in 1955, the organization has played a key role in providing insight to the Government of Jamaica on issues of national development. This is based on well-conducted research and reports across different sectors which are aimed at strengthening the planning and decision-making of the country.

The Community Renewal Programme was placed in the Planning Institute of Jamaica in 2011, following a social upheaval in Tivoli Gardens in 2010. It serves as a coordinating entity for the delivery of social interventions. The overall objective of the Community Renewal Programme (CRP) is to contribute to inclusive growth and equitable national development by fostering socio-economic well-being and enhancing the quality of the lives of residents of volatile and vulnerable communities (The Planning Institute of Jamaica, 2019).

The CRP focuses on six (6) main pillars to effect change, namely: Socio-Economic Development, Physical Transformation, Governance, Social Transformation, Safety and Justice and Child and Youth Development. The project is focused on all six aspects. To successfully achieve the Programme’s mandate, the creation of a Project

Management Plan will help to create the foundation that will serve as a road map towards implementation and also foster true alignment and organization to the processes.

2.1.2 Mission and vision statements

Mission Statement

The Planning Institute of Jamaica is committed to leading the process of policy formulation on economic and social issues and external co-operation management to achieve sustainable development for the people of JAMAICA (The Planning Institute of Jamaica, 2019).

Vision Statement

To be proactive in the provision of strategic and innovative policy and programmatic responses to emerging issues at the national and organizational levels in pursuit of SUSTAINABLE DEVELOPMENT (The Planning Institute of Jamaica, 2019).

The creation of this project management plan to empower youth through the use of renewable energy aligns with the mission and vision of the PIOJ. As youth tend to be the main victims and committers of crime and violence, the project aims to achieve the mission and vision by addressing the social issue of youth unemployment from a sustainable development standpoint. The development of a project management plan provides the structure and guidelines necessary to maximize its chances of achievement.

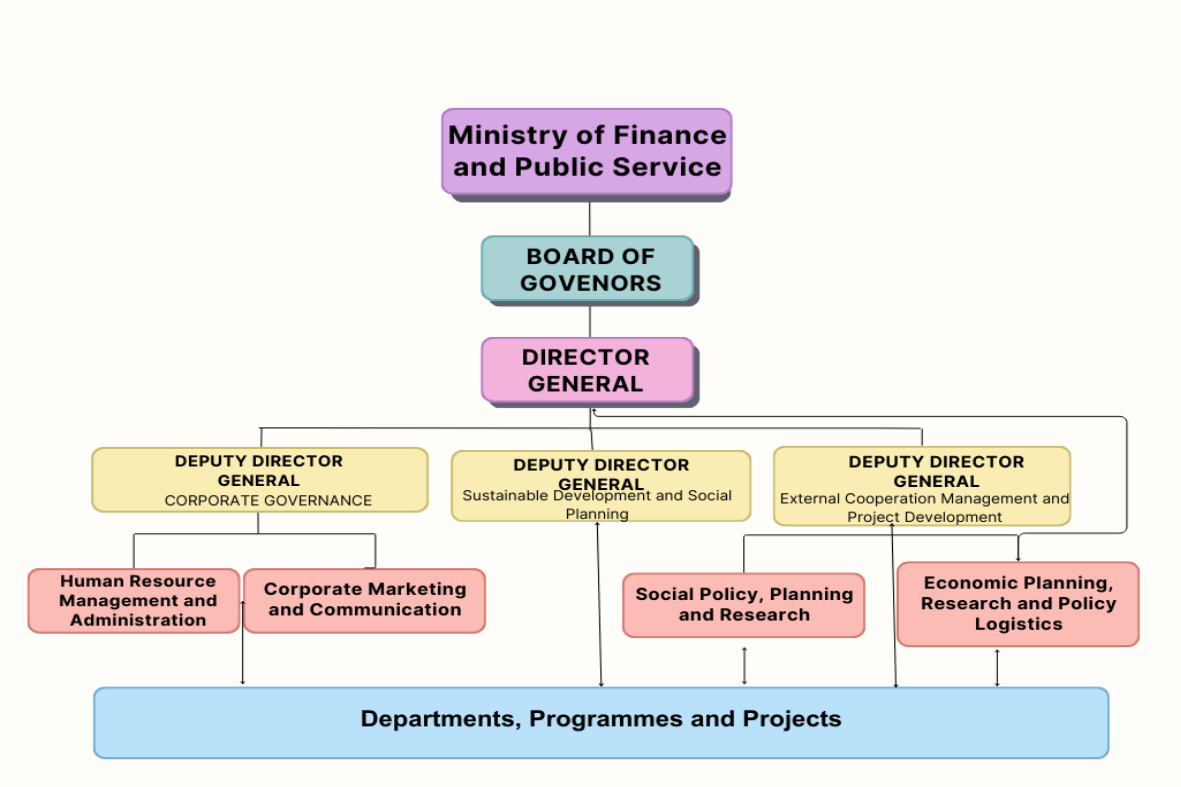
2.1.3 Organizational structure

The Ministry of Finance and Public Service is the governing body of the Planning Institute of Jamaica. A Board of Governors is appointed by the Ministry and is led by the Director General who runs the daily operations. Next in command are those in Senior Management responsible for the following Divisions: Corporate Governance and Management, Sustainable Development and Social Planning, External Cooperation Management and Project

Development, Economic Planning, Research and Policy Logistics, Social Policy, Planning and Research, Corporate Marketing and Communication and Human Resource Management and Administration. This then feeds into several Departments, Programmes and Projects.

Figure 1

Organizational structure of the Planning Institute of Jamaica



Note: Source: Compiled by Author, K. Wellington nee` Morgan, 2024

2.1.4 Products offered

The products developed by the Planning Institute of Jamaica (PIOJ) include publications such as the Economic and Social Survey Jamaica (ESSJ), which provides annual data on the economic and social sectors. It also produces the Jamaica Survey for Living Conditions, which details household data as it relates to poverty, health, education, housing, and social protection. Baseline studies have also been completed for nineteen of the most volatile and vulnerable communities in Jamaica. The PIOJ also produces various reports on the economy, human and

social development, sustainable development, and sectoral performance. These products link to the Final Graduation Project as it provides foundational information on the country's needs and share recommendations to make improvements. The project management plan will include the ten knowledge areas that will be required to guide the project manager in its execution and improve the level of effectiveness and efficiency to garner success. This is particularly valuable in a volatile community environment, as a well-defined plan allows the team to anticipate potential challenges.

2.2 Project Management concepts

2.2.1 Project management principles

There are twelve (12) Project Management Principles according to the Project Management Standard. These principles serve as a guide to project managers to execute their projects effectively and efficiently. It also incorporates the ethical considerations and conduct required by project managers. Figure 2 shows a graphical representation of the twelve principles.

Figure 2

Twelve Principles of Project Management

Source: Project Management Institute (PMI), 2021, Copyright 2021 by PMI, Inc. Permission not sought.

The company utilizes all the principles and these will be incorporated into the Final Graduation Project. As it relates to stewardship, the company ensures it maintains full authority in being held accountable for its standards towards organizational processes and projects. It not only takes into consideration to ensure alignment with the company's values but also ensures the team feels respected and appreciated. Stewardship reflects understanding and acceptance of trust as well as actions and decisions that engender and sustain that trust (Project Management, 2021, p.25).

The company prioritizes building a highly qualified team, ensuring each member possesses the specific expertise required for their role. Effective collaboration across these teams is crucial for smooth operations and achieving project objectives. A collaborative project team environment enables everyone to contribute their best efforts to deliver the desired outcomes for an organization (Project Management Institute, 2021, p. 30).

Stakeholder engagement is a primary focus for the company when dealing with projects. It is prioritized from the early onset of the project, as stakeholder buy-in is crucial to the overall success rate.

The values of the PIOJ, are held in the highest esteem, and ensuring the alignment of projects to its strategic focus is a very important factor. Systems thinking as defined by Project Management Institute (2021) recognizes, evaluates, and responds to the dynamic circumstances within and surrounding the project in a holistic way to positively affect project performance. The project will have different components, that need to be achieved to meet the required objective, and this component is necessary for that execution to take place (Project Management Institute, 2021, p.37).

Along with identifying individuals to collaborate with as a team, effective leadership is required to make key decisions. The project manager must be able to motivate the team and influence stakeholders to achieve the project's objectives.

The Tailoring principle as defined by the Project Management Institute (2021) states that this is a deliberate adaptation of approach, governance, and processes to make them more suitable for the given environment and work at hand (Project Management Institute, 2021, p.44). As each project is unique, and especially when the company deals with vulnerable groups it is key to ensure that activities are not carried out with a "one size fits all" agenda.

The Quality Principle as defined by the Project Management Institute (2021) states that it is the degree to which a set of inherent characteristics of a product, service, or result fulfills the requirements (Project Management Institute, 2021, p. 47). This will involve the trainings required and equipment for solar panel installations. These must meet the required standard to ensure the project's success.

The Complexity Principle as defined by the Project Management Institute (2021) states that it is a characteristic of a project or its environment that is difficult to manage due to human behaviour, systems behaviour, and ambiguity (Project Management Institute, 2021, p.50). Due to the nature of this project and the stakeholder group involved, the navigation of complexity will be needed. This can be done by developing systems to identify complexity and determining how these will be addressed.

The Risk Principle as defined by the Project Management Institute (2021) states that one should continually evaluate risk exposure, both opportunities and threats, to maximize positive impacts and minimize negative impacts to the project and its outcomes (Project Management Institute, 2021, p. 53).

The Adaptability & Resilience Principle as defined by the Project Management Institute, (2021) states that the combined attributes help the project accommodate impacts and thrive (Project Management Institute, 2021, p.55). There may be unforeseen challenges that may occur, and the project team will need to adjust toward the benefit of achieving the project objectives.

The Change Principle as defined by the Project Management Institute (2021) states that change management or enablement is a comprehensive, cyclic, and structured approach for transitioning individuals, groups, and organizations from a current state to a future state in which they realize the desired benefits (Project Management Institute, 2021, p.58). The project will

have in place a change control board along with a change log to document any approved changes.

2.2.2 Project management domains

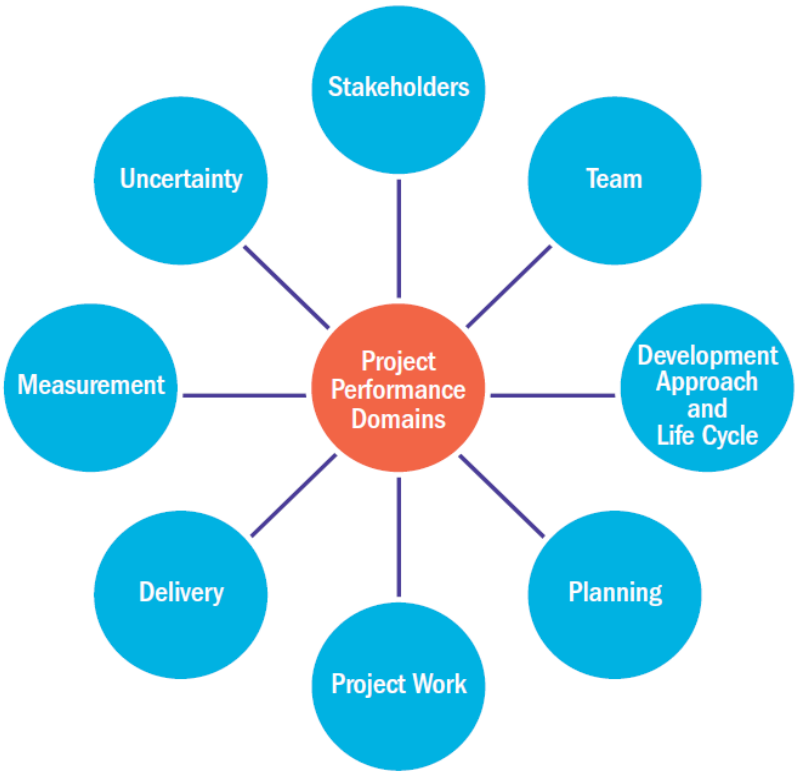
A project performance domain is a group of related activities that are critical for the effective delivery of project outcomes (Project Management Institute, 2021, p.7). All eight performance domains as shown in Figure 3 below would be incorporated into the Final Graduation Project.

A project team will be created to plan, execute and monitor the work. Stakeholders will be involved directly, such as the youth from Trench Town and in-directly such as residents of the surrounding communities and will be managed by the project team. The project will be organized with the aid of the Project Management Institute's best practices, through the development of a Project Management Plan.

The development approach and life cycle of the project will be determined. Project execution will focus on achieving the established objectives and delivering the planned outcomes. Measurement is crucial to assess whether these objectives are met. A comprehensive risk assessment will consider all potential uncertainties and identify mitigation strategies to address them.

Figure 3

Project Management Performance Domains



Source. Adopted from A Guide to the Project Management Body of Knowledge, Note: Reprinted from A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Seventh Edition. Project Management Institute (PMI), 2021 Figure 1-1, p. 5
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Table 1

Definitions of Project Performance Domains

Project Performance Domains	Definitions
1. Stakeholders	It entails working with stakeholders to maintain alignment and engaging with them to foster positive relationships and satisfaction (Project Management Institute, 2021, p.9)
2. Team	It entails establishing the culture and environment that enables a collection of diverse individuals to evolve into a high - performing project team (Project Management Institute, 2021, p.16).
3. Development Approach and Life Cycle	It entails establishing the development approach, delivery cadence and project life cycle needed to optimize project outcomes (Project Management Institute, 2021, p. 32).
4. Planning	The purpose of planning is to proactively develop an approach to create the project deliverables (Project Management Institute, 2021p. 52).
5. Project Work	It is associated with establishing the processes and performing the work to enable the project team to deliver the expected deliverables and outcomes (Project Management Institute, 2021, p.69).
6. Delivery	It focuses on meeting requirements, scope, and quality expectations to produce the expected deliverables that will drive the intended outcomes (Project Management Institute, 2021, p. 80).
7. Measurement	It involves assessing project performance and implementing appropriate responses to maintain optimal performance (Project Management Institute, 2021, p. 93).
8. Uncertainty	It presents threats and opportunities that

Project Performance Domains	Definitions
	project teams explore, assess and decide how to handle (Project Management Institute, 2021, p. 116).

Source: Adopted from A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) Seventh Edition. Project Management Institute (PMI), 2021 Copyright 2021 by PMI, Inc. Permission not sought.

2.2.3 Predictive, adaptative, and hybrid projects

Projects that use a predictive lifecycle, also known as the waterfall approach are as the name suggests, predictable by nature. It follows a logical step-by-step flow. This means that the completion of one phase is dependent on the start of the next phase. This development approach allows the project team to reduce the level of uncertainty early in the project and do much of the planning up front (Project Management Institute, 2021, p.35).

The adaptive approach on the other hand is an agile approach and offers flexibility. It is centered around iterations and adaptability; it also allows for feedback to make continuous improvements until the final deliverable is accepted. The Project Management Institute (2021) shares that adaptive approaches are useful when requirements are subject to a high level of uncertainty and volatility and are likely to change throughout the project (The Project Management Institute, 2021, p.38). Projects that use the hybrid approach utilize a mix of predictive and adaptive approaches. This means that both approaches are utilized in the development of the project.

As it relates to the Final Graduation Project, the development of a project management plan for the empowerment of youth using renewable energy, the predictive

approach would be utilized. This approach is recommended as planning upfront for the project is necessary based on its location and the activities that need to be carried out, such as sensitization, training, and installations among other things.

2.2.4 Project management

Project management provides a framework for the coordination of project activities to increase the chances of overall project success. It helps to efficiently balance the scope, budget, schedule, and quality of the project to meet the deliverables. Project management is defined as the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (Project Management Institute, 2017, p.10).The use of the PMI's guidelines and practices regarding project management has been proven to increase the overall efficiency in the development, implementation, and monitoring of projects.

2.2.5 Project management knowledge areas and processes

Project Management is guided by ten (10) knowledge areas and five (5) process groups. The knowledge areas outline the various components that need to be addressed and the process groups are used to categorize the knowledge areas based on the stage of the project. A knowledge area is an identified area of project management defined by its knowledge requirements and described in terms of its components processes, practices, inputs, outputs, tools, and techniques (Project Management Institute, 2017, p.23). The knowledge areas are detailed below, and all areas will be included in the Final Graduation Project.

Project Integration Management

Project Integration Management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups (Project Management Institute, 2017, p.69). This knowledge area has seven processes namely: Develop Project Charter, Develop Project Management Plan, Direct and Manage Project Work, Manage Project Knowledge, Monitor and Control Project Work, Perform Integrated Change Control, Close Project or Phase.

Project Scope Management

Project Scope Management includes all the processes required to ensure that the project includes all the work required, and only the work required to complete the project successfully (Project Management Institute, 2017, p. 129). This knowledge area has six processes namely: Plan Scope Management, Collect Requirements, Define Scope, Create Work Breakdown Structure, Validate Scope, and Control Scope.

Project Schedule Management

Project Schedule Management includes the processes required to manage the timely completion of the project (Project Management Institute, 2017, p.173). Project Scheduling provides a detailed plan that represents how and when the project will deliver the products, services, and results defined in the project scope and serves as a tool for communication, managing stakeholders' expectations, and as a basis for performance reporting (Project Management Institute, 2017, p. 175). This knowledge area has six

processes namely: Plan Schedule Management, Define Activities, Sequence Activities, Estimate Activity Durations, Develop Schedule and Control Schedule.

Project Cost Management

Project Cost Management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget (Project Management Institute, 2017, p. 231).This knowledge area has four processes namely: Plan Cost Management, Estimate Costs, Determine Costs and Control Costs. It is primarily concerned with the cost of the resources needed to complete project activities (Project Management Institute, 2017, p. 233).

Project Stakeholder Management

Project Stakeholder Management includes all the processes required to identify the people, groups or organizations that could impact or be impacted by the project, to analyse stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution" (Project Management Institute, 2017, p.503).This knowledge area has four processes namely: Identify Stakeholders, Plan Stakeholder Management, Manage Stakeholder Engagement, Monitor Stakeholder Engagement. To increase the chances of success, the process of stakeholder identification and engagement should commence as soon as possible after the project charter has been approved, the project manager has been assigned and the team begins to form (Project Management Institute, 2017, p.504).

Project Communications Management

Project Communications Management includes the processes necessary to ensure that the information needs of the project and its stakeholders are met through development of artifacts and implementation of activities designed to achieve information exchange (Project Management Institute, 2017, p.359). This knowledge area has three processes namely: Plan Communications Management, Manage Communications, and Monitor Communications. Communications describe the possible means by which the information can be sent or received, either through communication activities, such as meetings and presentations or artifacts, such as emails, social media, project reports, or project documentation (Project Management Institute, 2017, p.361).

Project Quality Management

Project Quality Management includes the processes for incorporating the organization's quality policy regarding planning, managing and controlling project and product quality requirements in order to meet stakeholder's objectives (Project Management Institute, 2017, p.271). This knowledge area has three processes namely: Plan Quality Management, Manage Quality, Control Quality.

Project Risk Management

Project Risk Management is the process of conducting risk management planning, identification, analysis, response planning, response implementation and monitoring risk on a project (Project Management Institute, 2017, p.395). This knowledge area has seven processes namely: Plan Risk Management, Identify Risks, Perform Qualitative Risk Analysis, Perform Quantitative Risk Analysis, Plan Risk Responses, Implement Risk Responses and Monitor Risks.

Project Procurement Management

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team" (Project Management Institute, 2017, p.459). This knowledge area has three processes namely: Plan Procurement Management, Conduct Procurements and Control Procurements.

Project Resource Management

Project Resource Management includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project (Project Management Institute, 2017, p.307).This knowledge area has six processes namely: Plan Resource Management, Estimate Activity Resources, Acquire Resources, Develop Team, Manage Team, Control Resources

Process Groups

The knowledge areas detailed above have different processes which fall into one or more of the five (5) process groups. A project management process group is a logical grouping of project management processes to achieve specific project objectives (Project Management Institute, 2017, p.23). The Project Management Institute (2017) outlines the process groups as follows:

1. Initiating Process Group - Those processes performed to define a new project or new phase of an existing project by obtaining authorization to start the project or phase (The Project Management Institute, 2017, p.554).
2. Planning Process Group - Those processes required to establish the scope of the project, refine the objectives, and define the course of action

required to attain the objectives that the project was undertaken to achieve (The Project Management Institute, 2017, p.554).

3. Executing Process Group - Those processes performed to complete the work defined in the project management plan to satisfy the project requirements (The Project Management Institute, 2017, p.554).
4. Monitoring and Controlling Process Group - Those processes required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes (The Project Management Institute, 2017, p.554).
5. Closing Process Group - Those processes performed to formally complete or close the project, phase, or contract (The Project Management Institute, 2017, p.554).

Figure 4

Project Management Process Group and Knowledge Area Mapping

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Manage Quality	8.3 Control Quality	
9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses	11.6 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Engagement	13.3 Manage Stakeholder Engagement	13.4 Monitor Stakeholder Engagement	

Source. Adopted from A Guide to the Project Management Body of Knowledge, Note: Reprinted from A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Sixth Edition. Project Management Institute (PMI), 2017 Table 1-4, p. 25
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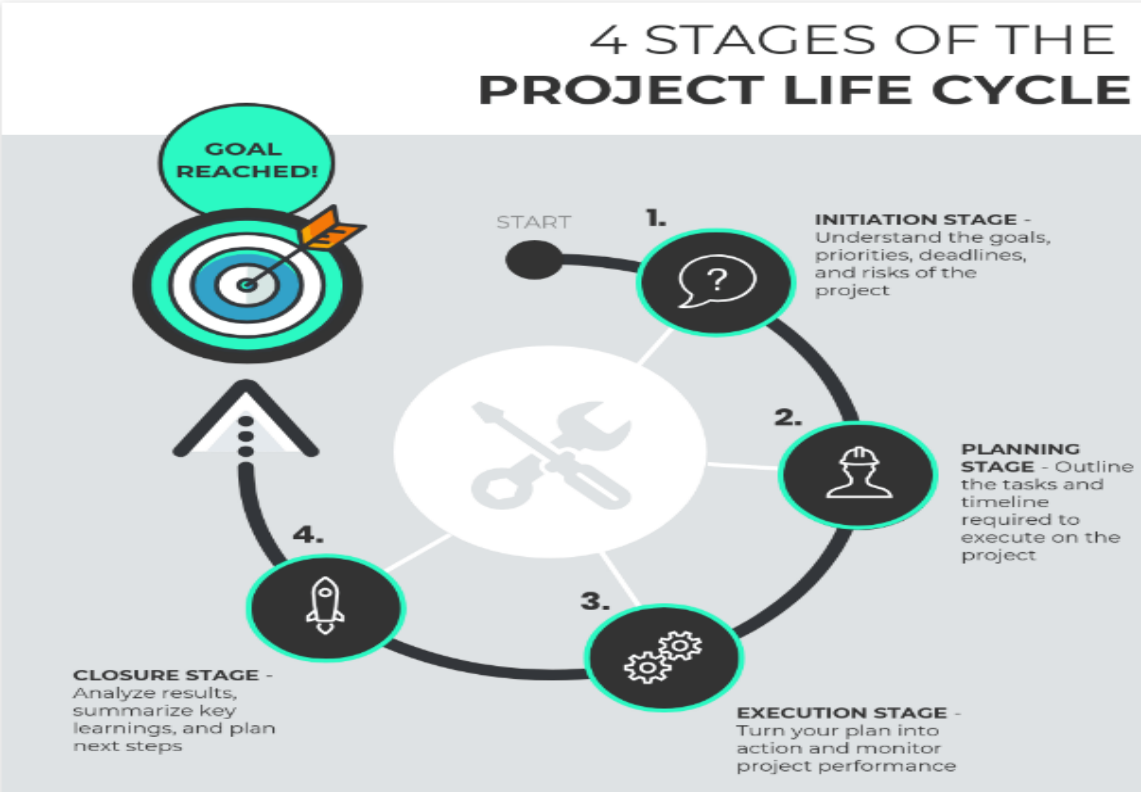
Figure 4 shows the Project Management Knowledge Areas and Process Groups. Based on the Final Graduation Project and the timeline in which to complete, only the processes under the Initiating and Planning process groups will be completed.

2.2.6 Project life cycle

The project life cycle is the series of phases that a project passes through from its start to completion (Project Management Institute, 2021, p.340). For a project to be deemed completed, it has to pass through the stages of initiation, planning, execution and closing. Figure 5 below details these stages. The life cycle provides the basic framework for managing the project, regardless of the specific work involved (Project Management Institute, 2017, p.548).

Figure 5

Four (4) Stages of the Project Lifecycle



Source. Adopted from Nediger, 2023

There are three types of project life cycles: predictive, adaptive, and incremental. In the predictive life cycle, the project scope, and the time and cost required to deliver that scope, are determined as early in the life cycle as possible (Certwise by Holmes Corporation, 2020, p.23). In an iterative life cycle, the project scope is generally determined early in the project life cycle, but time and cost estimates are routinely modified as the project team's understanding of the product increases (Certwise by Holmes Corporation, 2020, p.24). An adaptive project life cycle in which the deliverable is produced through a series of iterations that successively add functionality within a predetermined time frame (Certwise by Holmes Corporation, 2020, p.25).

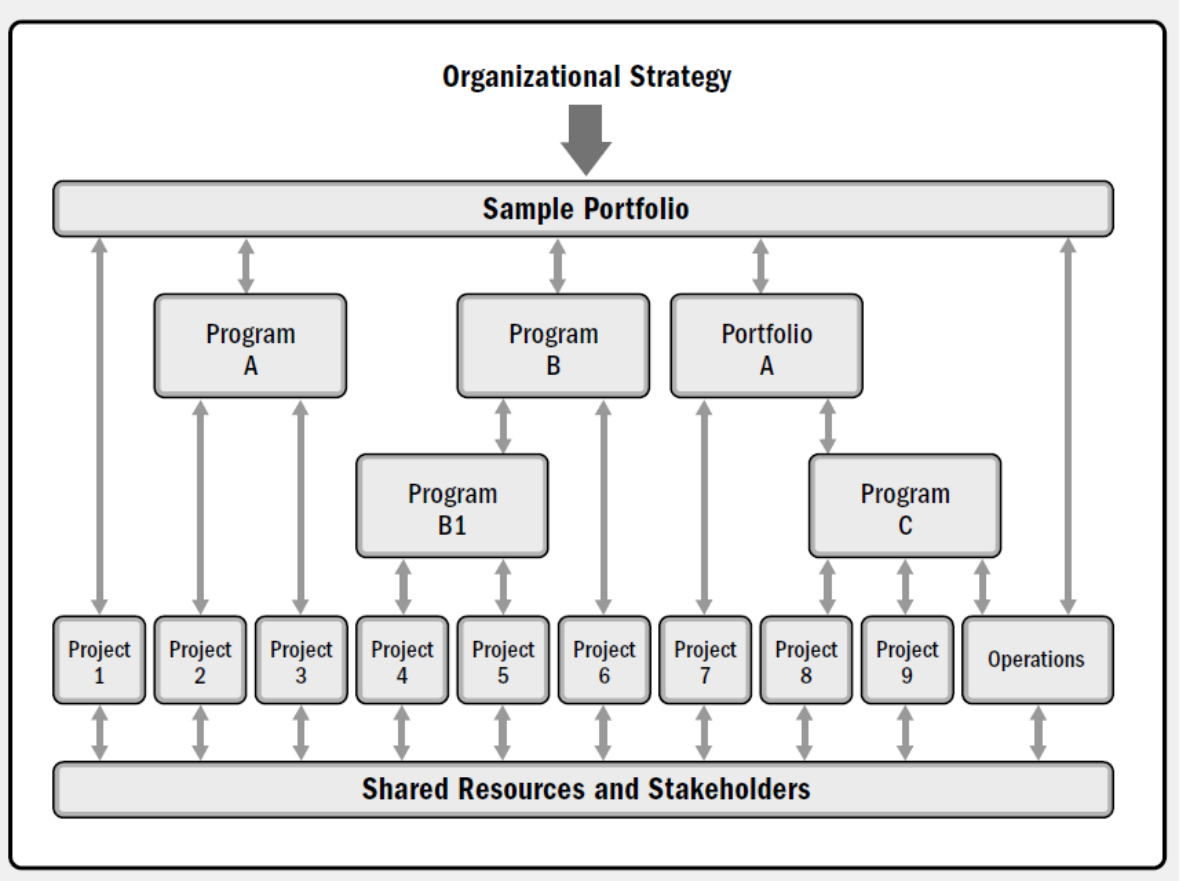
The Final Graduation Project will utilize a predictive life cycle as the scope, schedule and cost have to be pre-determined for approval to be given. The project also includes elements, which will have to be done in a logical sequence, for example, the sensitization of the youth will have to be implemented prior to the training sessions.

2.2.7 Company strategy, portfolios, programs and projects

Company Strategy provides a roadmap that details how the company's vision and mission will be realized. This strategy is aligned to any portfolio, programs or projects that may be incorporated into the company. Figure 6 illustrates an example of the relationship between the strategy, portfolio, program and project.

Figure 6

Portfolio, Programs, Projects and Operations



Source. Adopted from A Guide to the Project Management Body of Knowledge, Note: Reprinted from A Guide to the Project Management Body of Knowledge (PMBOK®Guide) Sixth Edition. Project Management Institute (PMI), 2017 Figure 1-3, p. 12 Copyright 2017 by PMI, Inc. Permission not sought.

As defined by the Project Management Institute, 2017, a portfolio is a collection of projects, programs, subsidiary portfolios and operations managed as a group to achieve strategic

objectives. Based on Figure 6, one is able to identify that the program feeds both into the portfolio and project. A program is a group of related projects, subsidiary programs, and program activities that are managed in a coordinated manner to obtain benefits not available from managing them individually (Project Management Institute, 2017, p. 13). The project which is at the lowest level before reaching the shared resources and stakeholders, is defined by the Project Management Institute (2017) as a temporary endeavor undertaken to create a unique product, service or result (The Project Management Institute, 2017, p.4). Based on the comparison identified above, the Planning Institute of Jamaica utilizes projects and programs to achieve its strategy, however the use of portfolios is not done. For example, the project for youth empowerment using renewable energy is managed by one of the programs of the Planning Institute of Jamaica which links to the overall vision of sustainable development.

2.3 Other applicable theory/concepts related to the project topic and context

2.3.1 Current situation of the problem or opportunity in study

Jamaica, known for its vibrant culture and picturesque beaches, faces a pressing energy challenge that affects both its economy and its people (Marsh, 2023). Jamaica still has one of the highest energy intensities in the Latin American and the Caribbean region (10 900 BTU/US$ GDP in 2016), and like many other Small Island Developing States (SIDs), is heavily reliant on imported fossil fuels (Planning Institute of Jamaica, 2018, p. 49). Due to the high reliance on these products, moving general consumption away from oil has been the aim of long-term development plans and projects (Planning Institute of Jamaica, 2022, p.147).

Along with the challenges faced regarding energy consumption, Jamaica also has experienced challenges with youth development, in particular, youth unemployment. In recent years, the trend has been decreasing, but unemployment remains high for Jamaica's youth (United Nations - Jamaica, 2023). With an estimated 23% of Jamaicans living in poverty we must partner with young people to tackle climate change through advocacy collaborations and emerging jobs and employment opportunities to bolster mitigation efforts ("Prepare youth for a climate-resilient, poverty-free future," 2023).

To tackle the challenges faced regarding energy consumption and youth unemployment, it is key to have inclusivity with vulnerable groups and communities. As Jamaica moves towards the reduction of both challenges, access to all should be a priority. To ensure a project of this nature creates the positive impact intended for not only social needs but also the environment, it is necessary to create a project management plan that is aligned with the best practices of the Project Management Institute.

2.3.2 Previous research done for the topic in study

A baseline study was conducted for the community of Trench Town, Jamaica, which revealed several development challenges mainly surrounding youth such as: High Levels of Unemployment, Low skill level, and limited training opportunities. Youth are the next generation that will be in-charge of the development of the country and so opportunities have to be created for them to continue. As well as building their capacity, it is necessary to improve their environmental conditions. Jamaica has become the first Caribbean nation to submit a tougher climate action plan under the Paris Agreement by adding targets for forestry and

stepping up curbs on greenhouse gas emissions from energy (Planning Institute of Jamaica, 2022, p.149).

Jamaica seeks to increase the use of renewable energy as fuel in its energy mix to 20.0 percent by 2030, and since the Medium Term Framework 2018-2021 a target of renewables in electricity generation has been added of 30 per cent by 2030 (Planning Institute of Jamaica, 2022, p.148). The implementation of this project will add value by helping to increase the use of renewable energy whilst equipping youth with requisite skills for the future. The creation of the Final Graduation Project will provide the road map necessary to execute the project to achieve these objectives.

2.3.3 Other theory related to the topic in study

Regenerative Development

Regenerative approaches seek not only to reverse the degeneration of the earth's natural systems, but also to design human systems that can co-evolve with natural systems—evolve in a way that generates mutual benefits and greater overall expression of life and resilience (Mang et. tal, 2020, p.3). Regenerative Development also shares in social regeneration as Muller (2017) explained that this is the advancement of a community or group of communities towards a more cohesive state where there is bonding and collaboration between people that have affinity but also, and very importantly, the inclusion of people with diverse positions (Muller, 2017, p.20).

Sustainable Development Goals

The Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development are an interdependent set of 17 “broad and universal” global development goals, which represent consensus and a call for action by all countries to achieve sustainable and inclusive

development by 2030 (Vision 2030 Jamaica, 2021). For Jamaica, efforts to achieve the Sustainable Development Goals (SDGs) will be organized around Vision 2030 Jamaica, our National Development Plan framework (Vision 2030 Jamaica, 2021). The project supports the following SDGs:

Goal 1: No Poverty

Goal 4: Quality Education

Goal 6: Clean Water and Sanitation

Goal 7: Affordable and Clean Energy

Goal 8: Decent Work and Economic Growth

Goal 13: Climate Action

Solar Energy

Solar Energy is categorized as clean energy derived from the sun. It is a form of renewable energy, which means that it comes from a natural source which does not run out. Renewable energy jobs are expected to grow from 5 million jobs today to 22 million in 2050, with 85 percent of the gains taking place in the solar and wind industries (Jensen, n.d.).

3 METHODOLOGICAL FRAMEWORK

3.1 Information sources

Information sources refer to the origins or channels from which individuals obtain data, facts, knowledge, or insights (Ashikuzzaman, 2023). Information sources are critical in shaping our understanding of the world, contributing to the foundation of knowledge and decision-making processes (Ashikuzzaman, 2023). Sources of information can either be primary, secondary or tertiary. The Final Graduation Project will utilize primary and secondary information sources.

3.1.1 Primary sources

Primary sources of information are first-hand accounts of research or an event including original scholarly research results, raw data, testimony, speeches, historic objects or other evidence that provides unique and original information about a person or an event (LibGuides at University of Wisconsin Stevens Point, 2023). The primary information sources used on the Final Graduation Project include various interviews, meetings, and emails.

3.1.2 Secondary sources

Secondary sources are created after an event has occurred and are written by someone who did not experience or observe the event firsthand (LibGuides at University of Wisconsin Stevens Point, 2023). The secondary information sources used on the Final Graduation Project include A Guide to Project Management Body of Knowledge - sixth and seventh edition, Journal articles, baseline study and internet articles.

Table 2

Information sources (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Objectives	Information sources	
	Primary	**Secondary**
1. To create a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager	Interviews with PIOJ's Technical Specialist Interview with Trench Town Community Development Committee (CDC) President Project Team Meetings Steering Committee Meetings	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study VNR SDGs report Journal Article Internet
2. To develop a Scope Management Plan to identify and document all work that would render the project complete	Interviews with PIOJ's Technical Specialist Project Charter Project Team Meetings Steering Committee Meetings	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study UCI Documents
3. To develop a Schedule Management Plan to ensure the identified project	Interviews with PIOJ's Technical Specialist Project Charter	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition

Objectives	Information sources	
	Primary	**Secondary**
activities are sequenced, monitored and controlled to facilitate the timely completion of the project	Project Team Meetings Steering Committee Meetings	
4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.	Interviews with PIOJ's Technical Specialist Project Charter Project Team Meetings Steering Committee Meetings Quotations	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition
5. To design a Stakeholder Management Plan to identify all individuals, groups or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle	Interviews with PIOJ's Technical Specialist Interviews with Trench Town CDC President Project Team Meetings Steering Committee Meetings	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study

Objectives	Information sources	
	Primary	**Secondary**
6. To design a Communications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed	Project Team Meetings Steering Committee Meetings	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition
7. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project	Project Team Meetings Steering Committee Meetings Interview with Trainers Interview with Solar Panels Expert	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition
8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored	Interview with Trench Town Community Development Committee (CDC) President Project Team Meetings Steering Committee Meetings	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study Report

Objectives	Information sources	
	Primary	**Secondary**
9. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project	Project Team Meetings Steering Committee Meetings	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Jamaica legal procurement framework
10. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed and controlled throughout the project.	Project Team Meetings Steering Committee Meetings	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study
11. To include regenerative and sustainability practices in project activities to create positive impacts on the environment	Emails to UCI Professors	A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition The GPM P5 Standard for Sustainability in Project Management

Note: Author's Own Work

3.2 Research methods

Research methods are the strategies, processes or techniques utilized in the collection of data or evidence for analysis in order to uncover new information or create a better understanding of a topic (University of Newcastle Library Guides, 2023). The research methods outline the specific way in which information will be garnered to achieve the project's overall objectives. It is key to determine the best research method that will give the most clarity to achieve the project's objectives. The Final Graduation Project will utilize the following Research Methods:

- Qualitative
- Mixed Methods

3.2.1 Qualitative Research Method

The Qualitative Research Method gathers data about lived experiences, emotions or behaviours, and the meanings individuals attach to them (University of Newcastle Library Guides, 2023). Research following a qualitative approach is exploratory and seeks to explain 'how' and 'why' a particular phenomenon, or behavior, operates as it does in a particular context (McLeod, 2023).

3.2.2 Mixed Methods

Mixed Methods Research as the name suggests, is an integration of more than one research method, usually, that of qualitative and quantitative. Mixing two methods might be superior to a single method as it is likely to provide rich insights into the research phenomena that cannot be fully understood by using only qualitative or quantitative methods (Dawadi et al, 2021).

Table 3

Research methods (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Objectives	**Research methods**	
	Qualitative Method	Mixed Method
1. To create a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager		Elements of the project charter will be developed through the use of interviews to collect qualitative data to populate areas such as the objectives, justification and deliverables. The quantitative method will be used to document the milestones and budget.
2. To develop a Scope Management Plan to identify and document all work that would render the project complete	The Scope Management Plan will be developed using qualitative research methods. It will utilize interviews and document analysis of similar type projects to determine all the work to be	

Objectives	Research methods	
	Qualitative Method	Mixed Method
	completed by the project.	
3. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored and controlled to facilitate the timely completion of the project	The Schedule Management Plan will be developed using qualitative research methods. This will be done through the use of interviews, observations and document analysis of similar projects to determine the project's duration, the order in which activities would be executed and the identification of schedule constraints.	
4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.	The Cost Management Plan will be developed using- qualitative research methods through the analysis of historical data and interviews with key subject matter experts	
5. To design a Stakeholder Management Plan to identify all		The Stakeholder Management Plan will be developed using

Objectives	Research methods	
	Qualitative Method	Mixed Method
individuals, groups or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle		mixed-methods research methods.It will utilize surveys to determine the best ways of engagement. It will also utilize interviews and document analysis to identify the stakeholders
6. To design a Communications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed		The Communications Management Plan will be developed using mixed methods in which interviews and surveys will be utilized to determine the best ways information will be distributed among stakeholders
7. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project		The Quality Management Plan will be developed using qualitative research methods. This will be done through the use of document

Objectives	Research methods	
	Qualitative Method	Mixed Method
		analysis to determine the pre-set standards of quality required for different elements of the project. It would also utilize surveys and questionnaires to execute quality audits
8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored		The Risk Management Plan will be developed using mixed methods in which quantitative methods will be used to help determine how best to assess the risk. It will also include qualitative data, through the analysis of historical data and lessons learned in identifying risks.
9. To develop a Procurement Management Plan to manage the acquisition of goods	The Procurement Management Plan will be developed using qualitative research methods through the usse	

Objectives	Research methods	
	Qualitative Method	Mixed Method
and services needed for the project	of document analysis such as the procurement act to ensure the guidelines are adhered to	
10. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed and controlled throughout the project.	The Resource Management Plan will be developed using qualitative research methods. Interviews and document analysis will be required to identify the different resources and h	
11. To include regenerative and sustainability practices in project activities to create positive impacts on the environment	The inclusion of regenerative and sustainability practices will be developed using qualitative research methods. Document Analysis and interviews with subject matter experts.	

Note: Author's Own Work

3.3 Tools

Tools are used in project management to improve the work needed to plan, execute, manage and monitor projects. A tool as defined by the Project Management Institute is something tangible such as a template or software program used in performing an activity to produce a product or result (Project Management Institute, 2017, p.725). The Final Graduation Project will include the following tools:

- Expert judgement – judgement provided based upon expertise in an application area, knowledge area, discipline or industry defined as appropriate for the activity being performed. (Project Management Institute, 2017, pg. 79).
- Microsoft Project - to facilitate scheduling, budgeting and assignment of resources to the project
- Document Analysis: This consists of reviewing and assessing any relevant documentation (Project Management Institute, 2017).
- Audits: An Audit is a structured, independent process used to determine if project activities comply with organizational and project policies, processes, and procedures (Project Management Institute, 2017).
- Meetings: A planned event of two or more persons to facilitate discussion on a common matter to seek clarity or achieve objectives
- Decomposition – a technique used for dividing and subdividing the project scope and project deliverables into smaller, more manageable parts. (Project Management Institute, 2017 p. 704).
- Analogous Estimating - a technique for estimating the duration or cost of an activity or a project using historical data from a similar activity or project (Project Management Institute, 2017, p. 200).

- Critical Path Method - is used to estimate the minimum project duration and determine the amount of schedule flexibility on the logical network paths within the schedule model (Project Management Institute, 2017, p. 210).
- Stakeholder analysis – is a technique of systematically gathering and analyzing quantitative and qualitative information to determine how to account for stakeholder interest throughout the project. (Project Management Institute, 2017, 723).
- Communication requirements analysis – an analytical technique to determine the information needs of the project stakeholders through interviews, workshops, and the study of lessons learned from previous Projects (Project Management Institute, 2017, p. 701).
- Brainstorming – a technique used to identify a list of ideas in a short period, conducted in a group setting (Project Management Institute, 2017, p.80).
- Interviews - a formal or informal approach to elicit information from stakeholders by talking to them directly (Project Management Institute, 2017, p.142)
- Responsibility assignment matrix – a grid that shows the project resources assigned to each work package. (Project Management Institute, 2017, p. 720).
- Risk categorization – a group of potential causes of risks (Project Management Institute, 2017, p. 720)
- Probability and impact assessment - categorization of risk based its probability and impact.

Table 4

Tools (Source: Author, Kimberley Wellington nee` Morgan, 2024)

Objectives	Tools
1. To create a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager	Expert Judgement, Document Analysis, Interviews
2. To develop a Scope Management Plan to identify and document all work that would render the project complete	Expert Judgement, Document Analysis, Interviews, Brainstorming
3. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored and controlled to facilitate the timely completion of the project	Expert Judgement, Document Analysis, Decomposition, Microsoft Projects, Analogous Estimating, Critical Path Method
4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.	Expert Judgement, Meetings, Analogous Estimating
5. To design a Stakeholder Management Plan to identify all individuals, groups or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle	Expert Judgement, Stakeholder Analysis, Meetings, Document Analysis
6. To design a Communications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed	Expert Judgement, Meetings, Communication requirements analysis

7. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project	Expert Judgement, Audits, Meetings, Document Analysis
8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored	Expert Judgement, Meeting, Document Analysis, Brainstorming, Interviews, Risk Categorization, Probability and impact assessment
9. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project	Expert Judgement, Meetings, Audits, Document Analysis
10. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed and controlled throughout the project.	Expert Judgement, Meetings, Document Analysis, Analogous Estimating, Responsibility assignment matrix
11. To include regenerative and sustainability practices in project activities to create positive impacts on the environment	Expert Judgement, Document Analysis

Note: Author's Own Work

3.4 Assumptions and constraints

An assumption is defined as a factor in the planning process that is considered to be true, real or certain, without proof or demonstration (Project Management Institute, 2021, p. 174) A constraint is defined as a limiting factor that affects the execution of a project, program, portfolio or process (Project Management Institute, 2017, p.701).

The assumptions and constraints associated with the objectives are detailed below in Table 5 for the Final Graduation Project.

Table 5

Assumptions and constraints *(Source Author, Kimberley Wellington nee` Morgan, 2024)*

Objectives	Assumptions	Constraints
1. To create a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager	The required information to complete the project charter is adequate and available	Project charter must be completed within a week. Approval may not be given in a timely manner
2. To develop a Scope Management Plan to identify and document all work that would render the project complete	The information required to develop the project's deliverables is adequate and available	The time to complete the project is twelve (12) weeks which gives an estimated week for completion
3. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored and controlled to facilitate the timely completion of the project	The estimated duration for project activities is accurate	The time to complete the project is only twelve (12) weeks which gives an estimated week for completion
4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.	Funding is available to execute project activities	Due to increasing inflation rates budgetary amounts may increase over the original cost given
5. To design a Stakeholder Management Plan to identify all individuals, groups or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle	All stakeholders will be identified and aligned to the best mode of engagement	Stakeholders are not available for engagement at the same time
6. To design a Communications Management Plan to determine how project information will be	Project information will be distributed	Internet connectivity issues to facilitate the

Objectives	Assumptions	Constraints
distributed among stakeholders and how it will be properly managed	using the right method to the right people at the right time	distribution of information
7. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project	The standards identified are aligned to the International Organization for standardization (ISO)	Limited access to expert subject matter
8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored	Information to identify risks is adequate and available	The community is highly volatile which may result in unforeseen risks
9. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project	Information is clear on how to obtain the goods and services required for project completion	Procurement options are restricted to the approved budget
10. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed, and controlled throughout the project.	All resources are available and adequate	The project will be completed by only one researcher
11. To include regenerative and sustainability practices in project activities to create positive impacts on the environment	Information available on regenerative and sustainability practices	Access may be limited to key experts who can provide relevant information

Note: Author's Own Work

3.5 Deliverables

A deliverable is defined as any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project; deliverables may be tangible or intangible (Project Management Institute, 2017 p. 36). The deliverables of the Final Graduation Project are: Project Charter, Scope Management Plan, Schedule Management Plan, Cost Management Plan, Procurement Management Plan, Resource Management Plan, Risk Management Plan, Stakeholder Management Plan, Communication Management Plan and Regenerative and Sustainable Development Validation. Table 6 below provides a summary of the deliverables for the Final Graduation Project.

Table 6

Deliverables (Source: Author, Kimberley Wellington nee` Morgan, 2024)

Objectives	**Deliverables**
1. To create a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager	Project Charter
2. To develop a Scope Management Plan to identify and document all work that would render the project complete	Scope Management Plan, Work Breakdown Structure (WBS), WBS Dictionary
3. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored and controlled to facilitate the timely completion of the project	Schedule Management Plan, Project Schedule
4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.	Cost Management Plan, Budget
5. To design a Stakeholder Management Plan to identify all individuals, groups or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle	Stakeholder Management Plan , Stakeholder Register, Power/Interest Matrix
6. To design a Communications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed	Communications Management Plan

7. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project	Quality Management Plan
8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored	Risk Management Plan, Risk Matrix
9. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project	Procurement Management Plan
10. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed and controlled throughout the project.	Resource Management Plan, RACI Chart
11. To include regenerative and sustainability practices in project activities to create positive impacts in the environment	Validation of Regenerative and Sustainability Development

Note: Author's Own Work

4 RESULTS

4.1. Integration Management Plan

The Integration Management Plan outlines various processes and details the key deliverables of the project. A project charter will be developed to provide this level of guidance. The project charter detailed in Figure 7 below outlines a summary of the Transforming Youth through Renewable Energy project. It serves as a tool and guide for the project manager and team to provide clarity in making strategic decisions to achieve the project's overall goals.

Figure 7

Project Charter (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Project Charter	
DATE	**PROJECT NAME**
March 17, 2024	Transforming Youth through Renewable Energy
PROJECT LIFE CYCLE	Predictive
KNOWLEDGE AREA / PROCESS GROUP	**Application Area (Sector / Activity)**
Processes: 1. Initiation, Planning, Execution, Monitoring & Control, Closure **Knowledge Areas:** 1. Integration Management 2. Scope Management 3. Schedule Management 4. Cost Management 5. Stakeholders Management 6. Quality Management 7. Resource Management	Multisectoral: Climate Change Adaptation/ Socio-Economic Development/ Youth Development

8. Communication Management 9. Risk Management 10. Procurement Management		
Tentative Start Date	**Tentative Completion Date**	**Duration (months)**
September 30, 2024	August 30, 2025	11 months
General Objective		
To increase the Trench Town Community Center's sustainability and viability by lowering its energy costs through the use of renewable energy while fostering the development of the community's youth by means of skills training, and building awareness of green energy over eleven (11) months.		
Specific Objectives		
1.To sensitize the community residents of Trench Town about the benefits and use of renewable energy to increase their knowledge and foster behaviour change.		
2.To conduct behaviour change workshops with the Trench Town community residents to increase their knowledge and improve their understanding of the impact of renewable energy on their environment.		
3.To train and certify 30 youth in Solar Energy Technologies and Green Energy Efficiency to increase their knowledge and improve their earning ability.		
4.To install a 10KW renewable energy (solar) system at the Trench Town Community Centre to reduce their energy cost by at least 50% to improve its sustainability.		
5.To solicit internship opportunities for the youth to provide on-the-job experience.		
Justification or purpose of the project		

Jamaica still has one of the highest energy intensities in the Latin American and Caribbean region (10 900 BTU/US$ GDP in 2016), and like many other Small Island Developing States (SIDs), is heavily reliant on imported fossil fuels (Planning Institute of Jamaica, 2018, p. 49). Jamaica aims to reduce electricity generation from fossil fuels by 50% by the year 2030. This will be achieved through the use of renewable energy. To ensure inclusivity in this process, the community of Trench Town was selected as it is categorized as a vulnerable and volatile community. Based on its level of volatility, the project aims to stimulate behaviour change through training and workshops. These will be based on renewable energy, in particular, solar-energy, which is aimed at empowering the youth to make them more marketable and to deter them from a life of crime. Youth are known to be the main committers of crime, though they are also the main victims. “Research confirms that an average of 40 per cent of all known murder offenders in Jamaica are young men between the ages of 15 and 24 years.in 2020, 16 per cent of murder victims were between the ages of 15 and 24” (Spence, 2021). This is why the project aims to deter this behaviour by fostering youth development through the implementation of renewable energy. They are not born criminals so if they are provided with the opportunity to live an honest, decent, and productive life, they will, in fact, take that path (Spence, 2021).

Deliverables

1. Overview of sensitization sessions
2. Final Report on sensitization sessions
3. Overview of training modules
4. Final Training Report
5. Certification of youth
6. Installation of solar energy system
7. Offer Letters to be engaged in internship

Preliminary Risk Identification

1. As the community is volatile, criminals may steal the solar equipment which would result in the project inability to achieve its objectives.
2. The high crime rate of this location may result in flare-ups of violence which would affect the youths ability to attend training.
3. Low interest in the project would result in not be enough target beneficiaries being recruited, which would affect the project's ability to foster youth development successfully.
4. The youth may leave the training due to competing opportunities which would affect the project’s scope and cost.

5. Natural disasters may occur which would delay the installation of the solar energy system and affect the project scope, cost, and schedule.
6. Shipping delays would hinder the installation of the solar energy system and affect the project scope, cost, and schedule.
7. Technology failure of the solar energy system would result in the community centre reverting to fossil fuel electricity generation which would lead to the project's objective not being achieved.
8. Limited resources within internship organizations may result in the trained youth not being accommodated within these organizations which would lead to the scope not being achieved.

Assumptions

1. The solar energy system will work as required.
2. Residents will participate in all sensitization workshops.
3. The required number of youth for the project will be recruited.
4. The youth will attend the required number of classes; complete the requisite coursework and assignments; and pass the given examinations to attain certification.
5. The trainers will develop their content to ensure it is easy to understand.
6. Sufficient resources will be available to complete the project.
7. The project will be completed in 11 months.

Budget

The total budget expected to implement this project is **32,477,699.10 Jamaican Dollars (JMD) or 206,864.32 United States Dollars (USD)**

Milestones

Milestones	**Estimated End Date**
Project Start	September 30, 2024
Memorandum of Understanding Signing	October 21, 2024
Completion of Sensitization and Behaviour Change Workshops	January 31, 2025
Training Completed	June 27, 2025

Installation of Solar Energy System	July 14, 2025
Project Close-out Ceremony	August 13, 2025
Project End	August 30, 2025

Key Stakeholders
Government of Jamaica Planning Institute of Jamaica HEART NSTA/Trust Caribbean Maritime University Vector Institute Social Development Commission Member of Parliament Trench Town Community Development Committee Trench Town Youth Trench Town Residents
Expected Benefits
The expected benefits of this project are the reduction in the Trench Town community centre's energy costs and carbon footprint, as well as the lessening of the nation's importation bill for oil. It will also lead to increasing the youth's level of employability which will also increase their earning power and their ability to provide for their families. The Trench Town residents will also have increased knowledge and a greater appreciation for renewable energy.

Project Manager: Kimberley Wellington	Signature:
Authorized by: Planning Institute of Jamaica	Signature:

Note: Author's Own Work

4.2. Scope Management Plan

The Project Management Institute (2021) states that the Scope Management plan is a "component of the project or program management plan that describes how the scope will be

defined, developed, monitored, controlled, and validated" (Project Management Institute, 2021, p. 249). The Transforming Youth through Renewable Energy Scope Management Plan outlines the Collection of Requirements through the Requirements Documentation and Requirements Verification Matrix. It also defines the scope by use of the Scope Statement and the Roles and Responsibilities according to the scope. The Work Breakdown Structure (WBS) and Dictionary are also detailed as well as the Scope Control and Verification.

4.2.1 Collect Requirements

Collect requirements is the "process of determining, documenting, and managing stakeholder needs and requirements to meet objectives" (Project Management Institute, 2017, p.135). The requirements documentation is outlined in Table 7, which focuses on the community's needs and its priority. Requirements become the foundation of the WBS, cost, schedule, quality planning, and procurement (Project Management Institute, 2017, p. 140).

Table 7

Requirements Documentation (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Needs	Functional	Technical	Priority	Raised by

	Requirements	Requirements		
1. Reduction in Community Centre's Electricity Cost	Skilled Technicians to install solar panels	Solar panels system must be 10kwh	High	Project Sponsor
2. Stable Roof for Solar Panel Installation	Accessibility to the roof	The roof must be at least 15 ft x 20ft	High	Project Manager
3. Improve Youth Employability	Community Group to assist with Recruitment of youth in Trench Town aged 18 - 25 years	Trainers must have a minimum requirement of a bachelor's degree level qualification	High	Trench Town CDC
4. Increase Knowledge and Understanding of Renewable Energy	Participation in sessions and workshops	A venue to accommodate a minimum 60 persons	High	Project Sponsor

Note: Author's Own Work

The requirements traceability matrix monitors the requirements based on the project objectives and details how achievement will be noted. Table 8 below provides additional details.

Table 8

Requirements Traceability Matrix (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Needs	Functional Requirements	Technical Requirements	Project Objectives	WBS ID	Verification
1.Reduction in Community Centre's Electricity Cost	Skilled Technicians to install solar panels	Solar panels system has to be 10kwh	To install a 10KW renewable energy (solar) system at the Trench Town Community Centre to reduce their energy cost by at least 50% to improve its sustainability.	6.4	Post installation walk-through by project team and solar energy technicians Electricity bill a month after installation
2.Stable Roof for Solar Panel Installation	Accessibility to the roof	Roof must be at least 15 ft x 20ft	To install a 10KW renewable energy (solar) system at the Trench Town Community Centre to reduce their energy cost by at least 50% to improve its sustainability.	6.2	Site Visit conducted by Project Manager and Solar Energy Technicians
3.Improve Youth Employability	Community Group to assist with Recruitment of youth in Trench Town aged 18 - 25 years	Trainers must have a minimum requirement of a bachelor's degree level qualification	To train and certify 30 youth in Solar Energy Technologies and Green Energy Efficiency to increase their knowledge and improve their earning ability.	5.2	Records of registration, reports, photos, and certificates where applicable
4.Increase Knowledge and Understanding of Renewable Energy	Participation in sessions and workshops	A venue to accommodate at minimum 60 persons	To sensitize the community residents of Trench Town about the benefits and use of renewable energy to increase their knowledge and	2.2	Records of registration, reports, and, photos

Needs	Functional Requirements	Technical Requirements	Project Objectives	WBS ID	Verification
			foster behaviour change.		

Note: Author's Own Work

4.2.2 Scope Definition

The Scope of the project was defined by the Planning Institute of Jamaica, the Social Development Commission, and the Trench Town Community Development Committee. It was through several deliberations and key research both on Jamaica's need for renewable energy and factors affecting the Trench Town community that the scope was defined. Figure 8 below details the Scope Statement.

Figure 8

Scope Statement (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Project Name:	Transforming Youth through Renewable Energy		
Project Sponsor:	Government of Jamaica Planning Institute of Jamaica	Project Manager:	Kimberley Wellington

Scope Description	The project scope entails five main deliverables: increasing the knowledge of Trench Town community residents in renewable energy through sensitization session, shifting their perspective and appreciation for renewable energy through behaviour change workshops, training and certifying thirty youth in Solar Energy Technologies and Green Energy Efficiency, creating a green-efficient community centre through the installation of 10KW solar panel system, and acquiring internship opportunities for the trainees.
Project Deliverables	1. Overview of sensitization sessions 2. Final Report on sensitization sessions 3. Overview of training modules 4. Final Training Report 5. Certification of youth 6. Installation of solar energy system 7. Offer Letters to be engaged in internship
Acceptance Criteria	❖ All sensitization, workshops and trainings are held with at least 80% participation ❖ 30 youth are trained and certified in Solar Energy Technologies and Green Energy Efficiency ❖ The solar energy system is installed and operational ❖ All trainees are accepted for internship

Constraints:	▪ Scope: - Thirty youth must be recruited for the training - The community members must buy into the project - Organizations providing internship must be able to accept trainees ▪ Schedule: - The project must be completed in 11 months ▪ Cost: - Availability of Funding ▪ Quality: - Structure of roof must be stable to allow for installation of solar panels

Assumptions:	1.The solar energy system will work as required. 2.Residents will participate in all sensitization workshops. 3.The required number of youth for the project will be recruited. 4.The youth will attend the required number of classes, complete the requisite coursework and assignments, and pass the given examinations to attain certification. 5.The trainers will develop their content to ensure it is easy to understand. 6.Sufficient resources will be available to complete the project. 7.The project will be completed in 11 months.

Note: Author's Own Work

The definition of the scope also outlines the various roles and responsibilities of different partners in achieving the project's objectives. Table 9 below details the Roles and Responsibilities.

Table 9

Roles and Responsibility (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Organization	**Role**	**Responsibilities**
Government of Jamaica	Project Sponsor	Provision of funding to carry out project activities Approve or deny project requests
Planning Institute of Jamaica	Project Sponsor	Provision of funding to carry out project activities Approve or deny project requests
HEART NSTA/Trust	Certification Provider	Issue certification based on performance in training
Planning Institute of Jamaica HEART NSTA/Trust Social Development Commission Caribbean Maritime University Vector Institute	Steering Committee	Provide technical guidance on project implementation
Project Manager	Project Team	Provide technical guidance, support and approval of project activities.
Caribbean Maritime University	Trainers	Provide certified skills training in Renewable Energy Technologies and Behaviour Change
Vector Institute	Trainers	Provide training in Solar

Organization	Role	Responsibilities
		Photovoltaic installation
Trench Town CDC	Community Group	Provide space for training and workshops and voluntary support to the programme
Trench Town Youth	Community Group	Participates in sensitization, workshops, training and internship

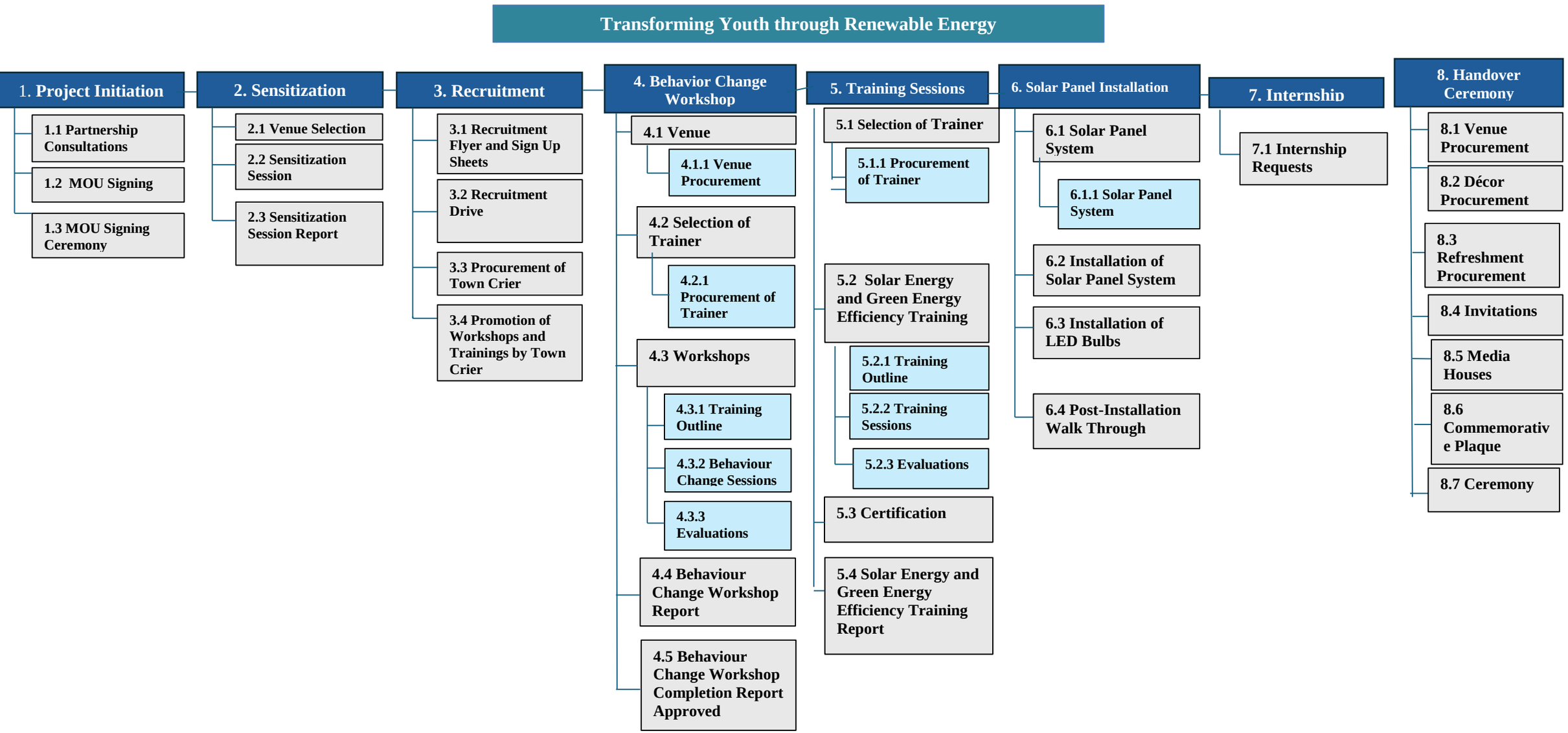
Note: Author's Own Work

4.2.3 Work Breakdown Structure

The Work Breakdown Structure (WBS) organizes and defines the total scope of the project and represents the work specified in the current approved project scope statement (Project Management Institute, 2017, p. 157). This graphical representation for the Transforming Youth through Renewable Energy project is outlined in Figure 9. At level one (1) it outlines the eight (8) main areas under the project, which are further decomposed.

Figure 9

Work Breakdown Structure (Source: Author, Kimberley Wellington nee`Morgan, 2024)



The WBS Dictionary shows the decomposition of the project activities but also provides further guidance by detailing a description or definition of each activity. The WBS dictionary assists in cost management and schedule management.

Table 10

Work Breakdown Structure Dictionary (Source: Author, Kimberley Wellington nee`Morgan, 2024)

WBS ID	WBS Name	Description/Definition	Budget	Resources
1.1	Partnership Consultations	Meeting with key partners to establish various roles and responsibilities	$50,000.00	Project Team, Steering Committee, Project Sponsors, Project Manager
1.2	MOU Signing	Signing of Memorandum of Understanding detailing agreed upon roles and responsibilities	$6,000.00	Steering Committee, Project Sponsors, Legal Officer
1.3	MOU Signing Ceremony	Ceremonial signing of the Memorandum of Understanding	$65,000.00	Project Team, Steering Committee, Project Sponsors, Project Manager
2.1	Venue Selection	Identification of venue with the right capacity and amenities for the intended purpose	$0.00	Project Team

WBS ID	WBS Name	Description/Definition	Budget	Resources
2.2	Sensitization Session	Information Sessions to raise awareness on key challenges	$175,000.00	Project Manager, Project Team, Trainer
2.3	Sensitization Session Report	Report created based on feedback from sensitization sessions	$0.00	Trainer
3.1	Design Recruitment Flyer and Sign Up Sheets	Create promotional material to solicit persons of like minds	$25,000.00	Graphic Artist, Project Assistant
3.2	Recruitment Drive	Engage community group to identify youth	$65,000.00	Project Coordinator
3.3	Procurement of Town Crier	Request for Quotation, Review of Bids, Approval of Successful Bidder	$15,000.00	Procurement Officer, Accounting Officer
3.4	Promotion of Workshops and Trainings by Town Crier	Promotion of Programme through audio announcements throughout the community	$75,000.00	Town Crier
4.1	Venue	Identification of venue with the right capacity and amenities for the intended purpose	$0.00	Project Manager
4.1.1	Venue Procurement	Request for Quotation, Review of Bids, Approval of Successful Bidder	$0.00	Procurement Officer

WBS ID	WBS Name	Description/Definition	Budget	Resources
4.2	Selection of Trainer	Identification of the most qualified trainer with experience to achieve the workshop objectives	$0.00	Steering Committee
4.3	Workshop	Execution of training material	$250,000.00	Trainer
4.3.1	Training Outline	Overview of topics to be taught in training Sessions	$0.00	Trainer
4.3.2	Behaviour Change Sessions	Execution of training material	$125,000	Trainer
4.3.3	Evaluations	Assessment based on Sessions completed	$15,000.00	Trainer
5.1	Selection of Trainer	Identification of the most qualified trainer with experience to achieve training objectives	$0.00	Project Steering Committee
5.1.1	Procurement of Trainer	Request for Quotation, Review of Bids, Approval of Successful Bidder	$0.00	Procurement Officer
5.2	Conduct Solar Energy and Green Energy Efficiency Training	Execution of training material	$400,000.00	Trainer

WBS ID	WBS Name	Description/Definition	Budget	Resources
5.2.1	Training Outline	Overview of topics to be taught in training Sessions	$0.00	Trainer
5.2.2	Training Sessions	Execution of training material	$250,000.00	Trainer
5.2.3	Evaluations	Assessment based on Sessions completed	$50,000.00	Trainer
5.3	Certification	Achieving minimum final grade of 65%	$35,000.00	HEART NSTA/Trust
5.4	Training Report	Final Report submitted to Project Manager for Project Steering Committee	$0.00	Trainer
6.1	Solar Panel System	System that utilizes energy from the sun to generate electricity		
6.1.1	Solar Panel System Procurement	Request for Quotation, Review of Bids, Approval of Successful Bidder	$0.00	Procurement Officer, Project Steering Committee, Project Manager, Accounting Officer
6.2	Installation of Solar Panel System	Installation of equipment	$3,200,000.00	Solar Panel Energy Specialist

WBS ID	WBS Name	Description/Definition	Budget	Resources
6.3	Installation of LED Bulbs	Installation of equipment	$25,000.00	Caribbean Maritime University
6.4	Post-Installation Walk Through	Review of installed works	$0.00	Procurement Officer, Project Manager, Project Team
7.1	Internship Requests	Request for Internship to key entities based on the area of study conducted in the trainings	$0.00	Project Manager
8.1	Venue Procurement	Request for Quotation, Review of Bids, Approval of Successful Bidder	$0.00	Procurement Officer, Project Steering Committee, Project Manager, Legal Officer, Accounting Officer
8.2	Décor Procurement	Request for Quotation, Review of Bids, Approval of Successful Bidder	$0.00	Procurement Officer, Project Steering Committee, Project Manager, Legal Officer, Accounting Officer
8.3	Refreshment Procurement	Request for Quotation, Review of Bids, Approval of Successful Bidder	$0.00	Procurement Officer, Project Steering Committee,

WBS ID	WBS Name	Description/Definition	Budget	Resources
				Project Manager, Legal Officer, Accounting Officer
8.4	Send out Invitations	Email invitations to key guests	$0.00	Project Assistant
8.5	Contact Media Houses	Invite media houses to cover the handover ceremony	$0.00	Project Coordinator
8.6	Install Commemorative Plaque	Plaque detailing project and sponsors installed at Trench Town Community Centre	$65,000.00	Vendor
8.7	Host Handover Ceremony	Ceremony to share the achievement of project objectives	$650,000.00	Project Manager, Project Team, Project Steering Committee
8.8	Project Closeout	End of Project	$0.00	Project Team

Note: Author's Own Work

4.2.4 Scope Verification

The scope verification will be carried out by the project manager and the Project Steering Committee. The project manager will carry out on-site checks to determine if what was agreed is what is being completed. The trainers are responsible for completing reports with the provision of photographs and registers as a means of verification. This will be facilitated through two layers of verification with the first being at the level of the project manager and then submitted to

the project steering committee for final approval. For resources that need to be procured, a Request for Quotation (RFQ) will be requested outlining each deliverable to be achieved which will determine payment.

4.2.5 Scope Control

The project manager and project team take full responsibility for controlling the scope. A log frame will be developed to monitor the progress of the project objectives. The project will include a process for requesting changes. This will be done using the change request form (Appendix 5). Approval or Denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of two (2) weeks. If approval is granted, the scope will be updated.

4.3 Schedule Management Plan

The schedule management plan "establishes the criteria and the activities for developing, monitoring and controlling the schedule" (Project Management Institute, 2017, p.181). This plan serves two critical purposes: it identifies the overall project duration and ensures the timely execution of activities. It is developed by the project team through the definition of the project's activities, the timeline for accomplishment, the resources needed to action each activity, and the sequence of events.

Tools like Microsoft Project will be used to aid in the visualization of the timeline for completion and monitoring of the project. If changes to the schedule are needed, a request has to be made using the change control form (Appendix 5). This will either be approved or denied by the Project Sponsors or the Steering Committee.

4.3.1 Define Activities

The Activities List is the main output produced under the process of defining the project's activities. This was completed with the use of expert judgment through the research conducted on similar projects and the decomposition of work packages from the Work Breakdown Structure (WBS). Table 11 below details the activities and their descriptions.

Table 11

Activity List (Source: Author, Kimberley Wellington nee`Morgan, 2024)

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
1.1	Partnership Consultations			Meeting with key partners to establish various roles and responsibilities
		1.1.1	Identify Key Partners	Research on organizations whose mandate align to the objectives of the project
		1.1.2	Draft Partnership Invitations	Letter invitations detailing project and possible role of organization
		1.1.3	Sign Partnership Invitations	Official Signature place on letter invitations by Director General
		1.1.4	Send Partnership Invitations to Heads of Agencies	Letter invitations sent as soft copy using email and hard copy using mail
		1.1.5	Receive Response from Heads of Agencies	Heads of Agencies accepting or rejecting partnership

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		1.1.6	Meet with Representatives from Partner Agencies	Meeting with representatives to discuss roles and responsibilities associated with the project
1.2	MOU Signing			Signing of Memorandum of Understanding (MOU) detailing agreed upon roles and responsibilities
		1.2.1	Draft MOU	MOU developed detailing project objectives and role and responsibilities of each partner agencies with signatories
		1.2.2	Review MOU	Legal review of drafted MOU
		1.2.3	Accept MOU	Acceptance by Legal Team for official use
		1.2.4	Sign MOU	MOU Signed by Heads of Agencies
1.3	MOU Signing Ceremony			Ceremonial signing of the Memorandum of Understanding

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		1.3.1	Select Venue	Identify and Select most ideal venue for ceremony
		1.3.2	Draft Invitation	Invitations developed detailing information about MOU Signing Ceremony
		1.3.3	Send Invitation	Letter invitations sent as soft copy using email and hard copy using mail
		1.3.4	Host MOU Signing Ceremony	MOU Signing Ceremony held with key representatives marking the ceremonial start of partnership
2.1	Venue Selection			Identification of venue with the right capacity and amenities for the intended purpose
		2.1.1	Identification of Venues	Compile venues based on location and workshop needs
		2.1.2	Conduct Site Visit	Visit venues to determine viability

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		2.1.3	Request for Quotation	Draft and Send request for submission to three vendors based on a specific criteria
		2.1.4	Review of Submission	Receive quotation and review with a checklist based on the criteria submitted
		2.1.5	Selection of Winning Bid	Bid that meets the standards requested
		2.1.6	Request Invoice	Cost for all work completed
		2.1.7	Make Payment	Transfer of monies for all work completed
2.2	Sensitization Session			Information Sessions to raise awareness on key challenges
		2.2.1	Meet with Trench Town CDC	Conduct meeting with Trench Town CDC to inform them of Sensitization Session

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		2.2.2	Distribute information about Sensitization Session	Sharing information with community residents about sensitization session
		2.2.3	Host Sensitization Sessions	Conduct sensitization session with Trench Town community about Project
2.3	Sensitization Session Report			Report created based on feedback from sensitization sessions
		2.3.1	Draft Sensitization Session Report	Report about activities under the sensitization session drafted
		2.3.2	Submit Sensitization Session Report	Final report submitted to project manager for Project Steering Committee
		2.3.3	Provide feedback on Sensitization Session Report	Final report submitted to project manager for Project Steering Committee
		2.3.4	Approve Sensitization Session Report	Final report satisfactorily meets criteria

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
3.1	Design Recruitment Flyer and Sign Up Sheets			Create promotional material to solicit persons of like minds
		3.1.1	Engage Graphic Artist	Make contact with graphic artist to discuss designs
		3.1.2	Recruitment Flyer and Sign up Sheet Designed	Graphic artist designs informative flyer and sign up sheet
		3.1.3	Printing of Recruitment Flyer and Sign up Sheet	Printing of designs
3.2	Recruitment Drive			Engage community group to identify youth
		3.2.1	Meet with Trench Town CDC to discuss recruitment drive	Conduct meeting to determine the best way to recruit youth to the workshops and training sessions
		3.2.2	Distribute Flyers and Sign Up Sheets	Sharing of promotional material at high pedestrian traffic areas

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		3.2.3	Host Town Hall Meeting	In-person community meeting to share more about the trainings and workshops
3.3	Procure Town Crier			Identification of Service Providers, Request for Quotation, review of bids, approval of successful bidder
		3.3.1	Identify Vendors	Compile list of vendors
		3.3.2	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		3.3.3	Review Submissions	Receive quotation and review with a checklist based on the criteria submitted
		3.3.4	Select Winning Bid	Bid that meets the standards requested
		3.3.5	Submit Invoice	Cost for all work completed

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		3.3.6	Make Payment	Transfer of monies for all work completed
3.4	Promotion of Workshops and Trainings through Town Crier			Promotion of programme through audio announcements throughout the community
		3.4.1	Announce Workshops and Trainings around Community through the use of a Town Crier	Town crier drives through community and announces information about workshops and trainings
4.1	Venue			Identification of venue with the right capacity and amenities for the intended purpose
4.1.1	Venue Procurement			Request for quotation, review of bids, approval of successful bidder
		4.1.1.1	Identify Venues	Compile list of venues
		4.1.1.2	Conduct Site Visit	Visit venues to determine viability

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		4.1.1.3	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		4.1.1.4	Review of Submission	Receive quotation and review with a checklist based on the criteria submitted
		4.1.1.5	Select Winning Bid	Bid that meets the standards requested
		4.1.1.6	Submit Invoice	Cost for all work completed
		4.1.1.7	Make Payment	Transfer of monies for all work completed
4.2	Selection of Trainer			Identification of the most qualified trainer with experience to achieve the workshop objectives
4.2.1	Procurement of Trainer			Request for Quotation, review of bids, approval of successful bidder

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		4.2.1.1	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		4.2.1.2	Review Submission	Receive quotation and review with a checklist based on the criteria submitted
		4.2.1.3	Select Winning Bid	Bid that meets the standards requested
		4.2.1.4	Submit confirmation to successful candidate	Contacting the individual who would have met the criteria to be selected as a trainer
		4.2.1.5	Submit Invoice	Cost for all work completed
		4.2.1.6	Make Payment	Transfer of monies for all work completed
4.3	Workshops			Practical and classroom- type sessions
4.3.1	Training Outline			Overview of topics to be taught in training Sessions

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		4.3.1.1	Receive Submission of Training Outline	Overview of training material sent to project Manager and project team
		4.3.1.2	Approve Submission	Training outline satisfactorily meets criteria
4.3.2	Behaviour Change Sessions			Execution of training material
		4.3.2.1	Commence Behaviour Change Sessions	Start Behaviour Change Sessions
		4.3.2.2	Complete Behaviour Change Sessions	End Behaviour Change Sessions
4.3.3	Evaluations			Assessment based on Sessions completed
		4.3.3.1	Conduct Pre-Test	Test at the start of the workshop
		4.3.3.2	Conduct Post-Test	Test at the end of the workshop

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
4.4	Behaviour Change Workshop Report			Final Report submitted to project manager for Project Steering Committee
		4.4.1	Draft Behaviour Change Workshop Report	Report about activities under the Behaviour Change Workshop drafted
		4.4.2	Submit Behaviour Change Workshop Report	Final Report submitted to project manager for Project Steering Committee
		4.4.3	Provide Feedback on Behaviour Change Report	Project Steering Committee submits any edits or clarification needed
		4.4.4	Approve Behaviour Change Workshop Report	Final report satisfactorily meets criteria
5.1	Selection of Trainer			Identification of the most qualified trainer with experience to achieve training objectives
5.1.1	Procurement of Trainer			Request for quotation, review of bids, approval of successful bidder

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		5.1.1.1	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		5.1.1.2	Review Submission	Receive quotation and review with a checklist based on the criteria submitted
		5.1.1.3	Select Winning Bid	Bid that meets the standards requested
		5.1.1.4	Submit Confirmation to Successful Candidate	Contacting the individual who would have met the criteria to be selected as a trainer
		5.1.1.5	Submit Invoice	Cost for all work completed
		5.1.1.6	Make Payment	Transfer of monies for all work completed
5.2	Solar Energy and Green Energy Efficiency Training			Execution of training material

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
5.2.1	Training Outline			Overview of topics to be taught in training sessions
		5.2.1.1	Receive Submission of Training Outline	Overview of training material submitted to project manager and Project Steering Committee
		5.2.1.1	Approve Training Outline	Training outline satisfactorily meets criteria
5.2.2	Training Sessions			Execution of training material
		5.2.2.1	Commence Training	Start training sessions
		5.2.2.2	Complete Training	End training sessions
5.2.3	Evaluation			Assessment based on sessions completed
		5.2.3.1	Conduct Pre-Test	Test at the start of the training

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		5.2.3.2	Conduct Post-Test	Test at the end of the training
		5.2.3.3	Conduct Written Exams	Assessment using multiple choice and open answer questions
		5.2.3.4	Conduct Practical Exam	Assessment showing practical experience
		5.2.3.5	Grade Exams	Calculate grade based on correct answers
		5.2.3.6	Award Pass or Fail Mark	65% and above pass 64.9% and below fail
5.3	Certification			Achieving minimum final grade of 65%
		5.3.1	Receive Certification	Determined based on pass mark
5.4	Solar Energy and Green Energy Efficiency Training Report			Final report submitted to project manager for Project Steering Committee

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		5.4.1	Draft Training Report	Report about activities under the Solar Energy and Green Energy Efficiency Training drafted
		5.4.2	Submit Solar Energy and Green Energy Efficiency Training Report	Final report submitted to project manager for Project Steering Committee
		5.4.3	Provide feedback on Solar Energy and Green Energy Efficiency Training Report	Project Steering Committee submits any edits or clarification needed
		5.4.4	Approve Solar Energy and Green Energy Efficiency Training Report	Final report satisfactorily meets criteria
6.1	Solar Panel System			System that utilizes energy from the sun to generate electricity
6.1.1	Solar Panel System Procurement			Requests for quotation, review of bids, approval of successful bidder

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		6.1.1.1	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		6.1.1.2	Review Submission	Receive quotation and review with a checklist based on the criteria submitted
		6.1.1.3	Select Winning Bid	Bid that meets the standards requested
		6.1.1.4	Submit confirmation to successful candidate	Contacting the individual who would have met the criteria to be selected
		6.1.1.5	Submit Invoice	Cost for all work completed
		6.1.1.6	Make Payment	Transfer of monies for all work completed
6.2	Installation of Solar Panel System			Installation of equipment
		6.2.1	Conduct Site Visit	Assess location for installation

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		6.2.2	Conduct Roof Assessment	Test structure of roof and dimensions
		6.2.3	Install Mounting System	Install mounts on which the solar panels will be installed
		6.2.4	Install Solar Panels	Install 24 solar panels
		6.2.5	Install Inverter System	Install system to convert current from direct current to alternating current
		6.2.6	Install Electrical Wiring	Install wiring to allow current to flow through the system
		6.2.7	Install Solar Batteries	Install solar batteries to store energy
		6.2.8	Install Power Converter	Install system to convert current from alternating current to direct current
		6.2.9	Install Energy Meter	Install energy meter to measure current used
6.3	Installation of LED Bulbs			Installation of energy efficient bulbs

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		6.3.1	Install Electric Wiring	Install wiring to allow current to flow through the system
		6.3.2	Install LED Bulbs	Install energy efficient bulbs
6.4	Post-Installation Walk Through			Review of installed works
		6.4.1	Assess Solar Panels	Inspection of installation of solar panels
		6.4.2	Assess LED Lights	Inspection of installation of LED lights
7.1	Internship Request			Request for internship to key entities based on the area of study conducted in the trainings
		7.1.1	Identify Organizations for Internship	Compile list of organizations

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		7.1.2	Email Request to Identified Organizations	Submit formal requests to organizations to provide internship to trainees
		7.1.3	Receive approval or denial of request	Organizations respond approving or denying request
8.1	Venue Procurement			Requests for quotation, review of bids, approval of successful bidder
		8.1.1	Identify Venues	Compile list of venues
		8.1.2	Conduct Site Visit	Visit venues to determine viability
		8.1.3	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		8.1.4	Review of Submission	Receive quotation and review with a checklist based on the criteria submitted
		8.1.5	Select Winning Bid	Bid that meets the standards requested

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		8.1.6	Submit Invoice	Cost for all work completed
		8.1.7	Make Payment	Transfer of monies for all work completed
8.2	Decor Procurement			Request for Quotation, review of bids, approval of successful bidder
		8.2.1	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		8.2.2	Review of Submission	Receive quotation and review with a checklist based on the criteria submitted
		8.2.3	Select Winning Bid	Bid that meets the standards requested
		8.2.4	Submit Invoice	Cost for all work completed
		8.2.5	Make Payment	Transfer of monies for all work completed

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
8.3	Refreshments Procurement			Request for Quotation, review of bids, approval of successful bidder
		8.3.1	Request for Quotation	Draft and send request for submission to three vendors based on a specific criteria
		8.3.2	Review of Submission	Receive quotation and review with a checklist based on the criteria submitted
		8.3.3	Select Winning Bid	Bid that meets the standards requested
		8.3.4	Submit Invoice	Cost for all work completed
		8.3.5	Make Payment	Transfer of monies for all work completed
8.4	Invitations			Email invitations to key guests
		8.4.1	Draft Invitation List	Identify key guests and stakeholders

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		8.4.2	Email Invitations	Email invitations to key guests and stakeholders
		8.4.3	Confirm attendees	Follow-up with key guest and stakeholders on their attendance to the Ceremony
8.5	Media Houses			Invite media houses to cover the handover ceremony
		8.5.1	Draft List of Media Houses	Identify Media Houses
		8.5.2	Invite Media to Broadcast Event	Send Email to Media Houses inviting them to cover event
		8.5.3	Confirm Attendance	Follow up with media houses to confirm their attendance
8.6	Installation of Commemorative Plaque			Plaque detailing project and sponsors installed at Trench Town Community Centre

WBS ID	Work Packages	Activity ID	Activities Name	Description/Definition
		8.6.1	Purchase Commemorative Plaque	Make payment for commemorative plaque
		8.6.2	Engrave Plaque	Detail plaque with project details and sponsors
		8.6.3	Install Commemorative Plaque	Install plaque at Trench Town Community Centre
8.7	Ceremony			Ceremony to share the achievement of project objectives
		8.7.1	Host Handover Ceremony	Execute handing over ceremony
		8.7.2	Unveiling of Commemorative Plaque	Public reveal of commemorative plaque
		8.7.3	Presentation of Certificates to Trainees	Present certificates to trainees who received certification
			Project End	

Note: Author's Own Work

4.3.2 Sequence Activities

This involves utilizing the activities that were previously defined and arranging them in a logical order. The key benefit of this process is that it defines the logical sequence of work to obtain the greatest efficiency given all project constraints (Project Management Institute, 2017, p.187). This will be determined through the precedence diagramming method, where the finish-to-start logical relationship would be utilized. This means the starting point of the activities will be determined by the completion of another. This will help to create the schedule network diagram.

4.3.3 Estimate Activity Durations

Determining the time to complete each activity in the schedule must be done accurately to facilitate the creation of the schedule. This aids in the timely completion of the project. This project will use analogous estimating, where previous projects will help to identify the time needed to complete each activity. This was completed using Microsoft Projects which is depicted in Figure 10.

4.3.4 Develop Schedule

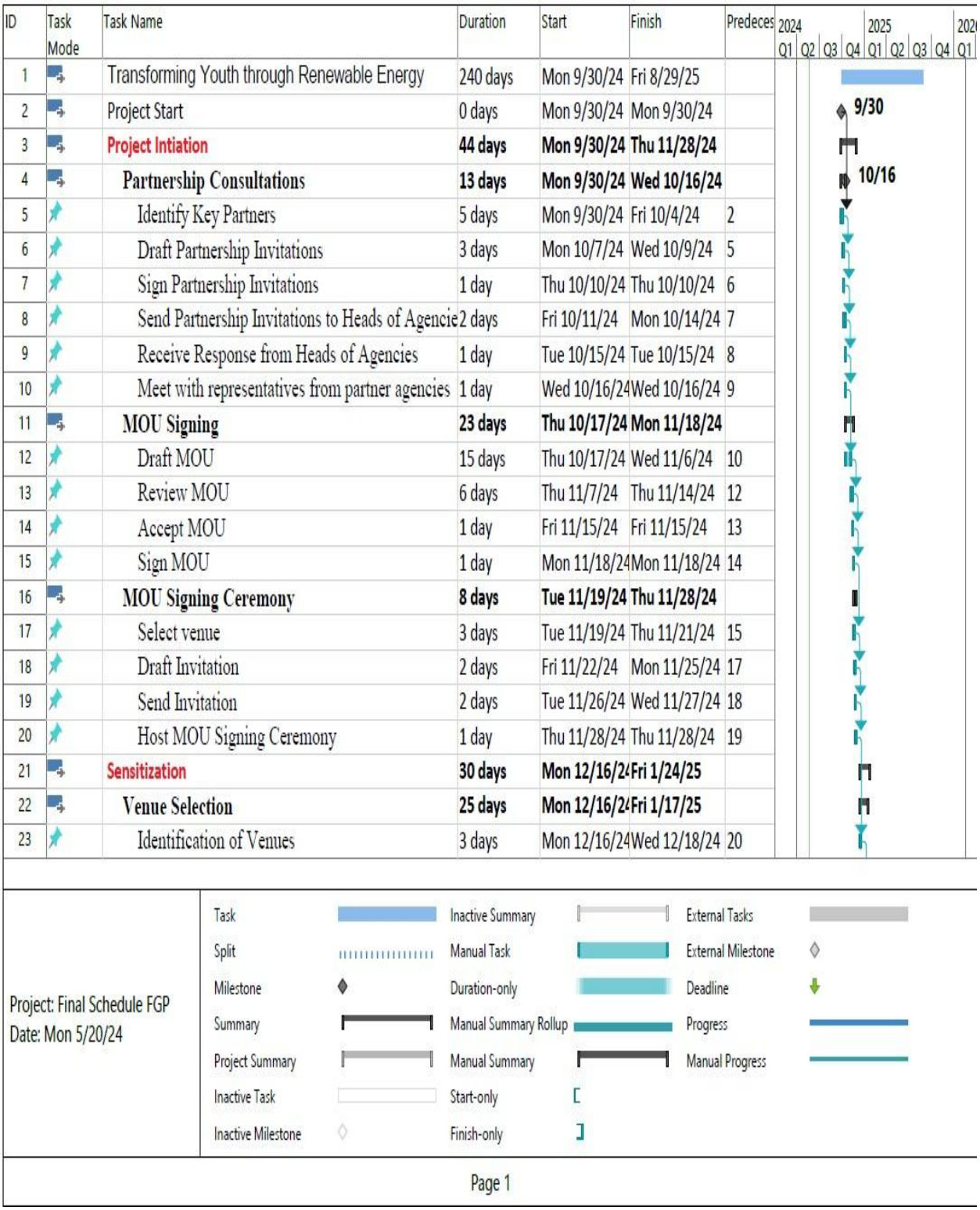
The schedule identifies the planned start and end dates for each activity to result in project completion. The schedule was developed with the Microsoft Project tool and identifies the following elements:

- WBS ID
- Activity Name
- Start Date
- End Date
- Predecessor
- Successor
- Gantt Chart

Figure 10 below depicts the Schedule for the Transforming Youth through Renewable Energy Project.

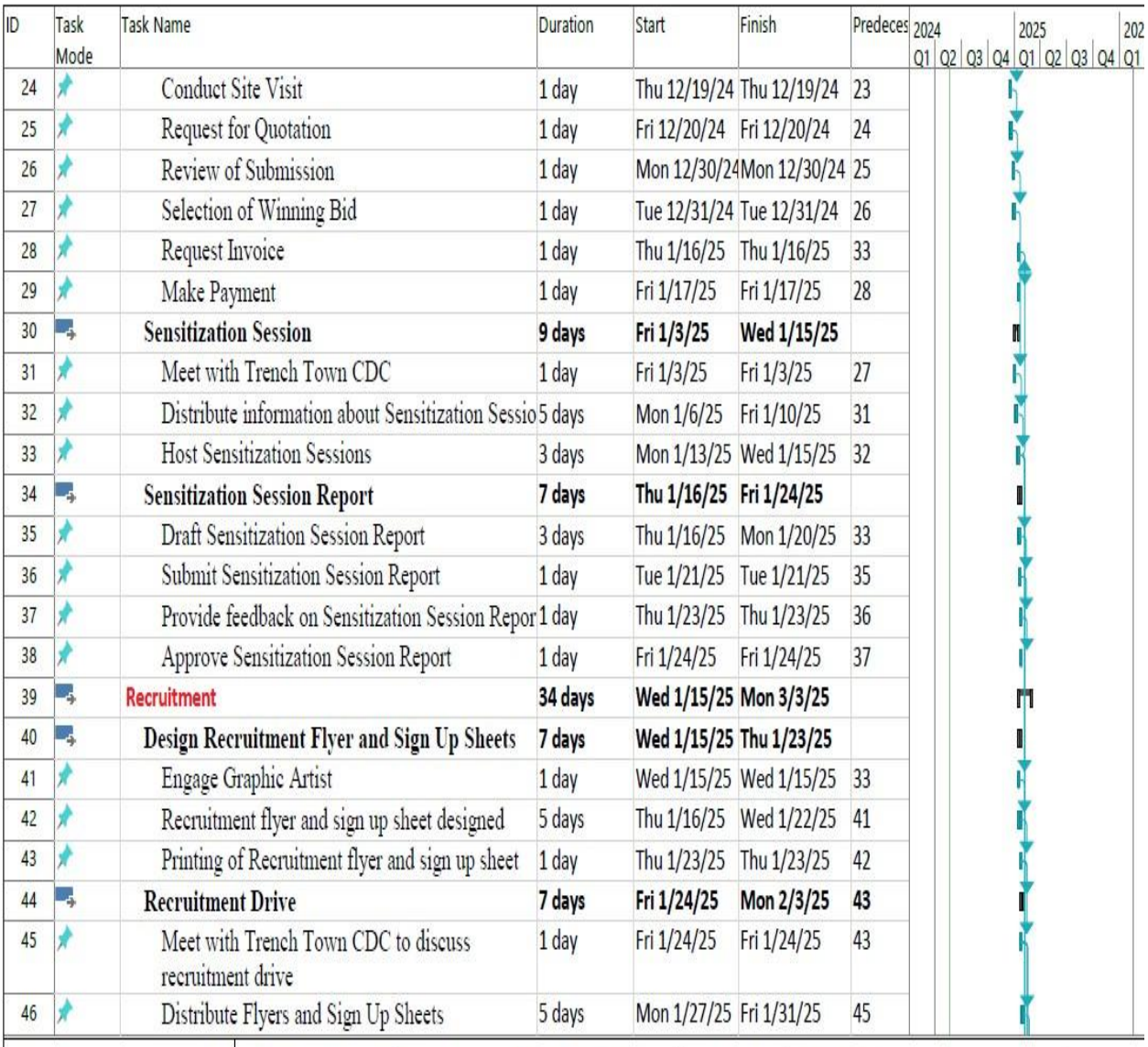
Figure 10

Project Schedule (Source: Author, Kimberley Wellington nee`Morgan, 2024)

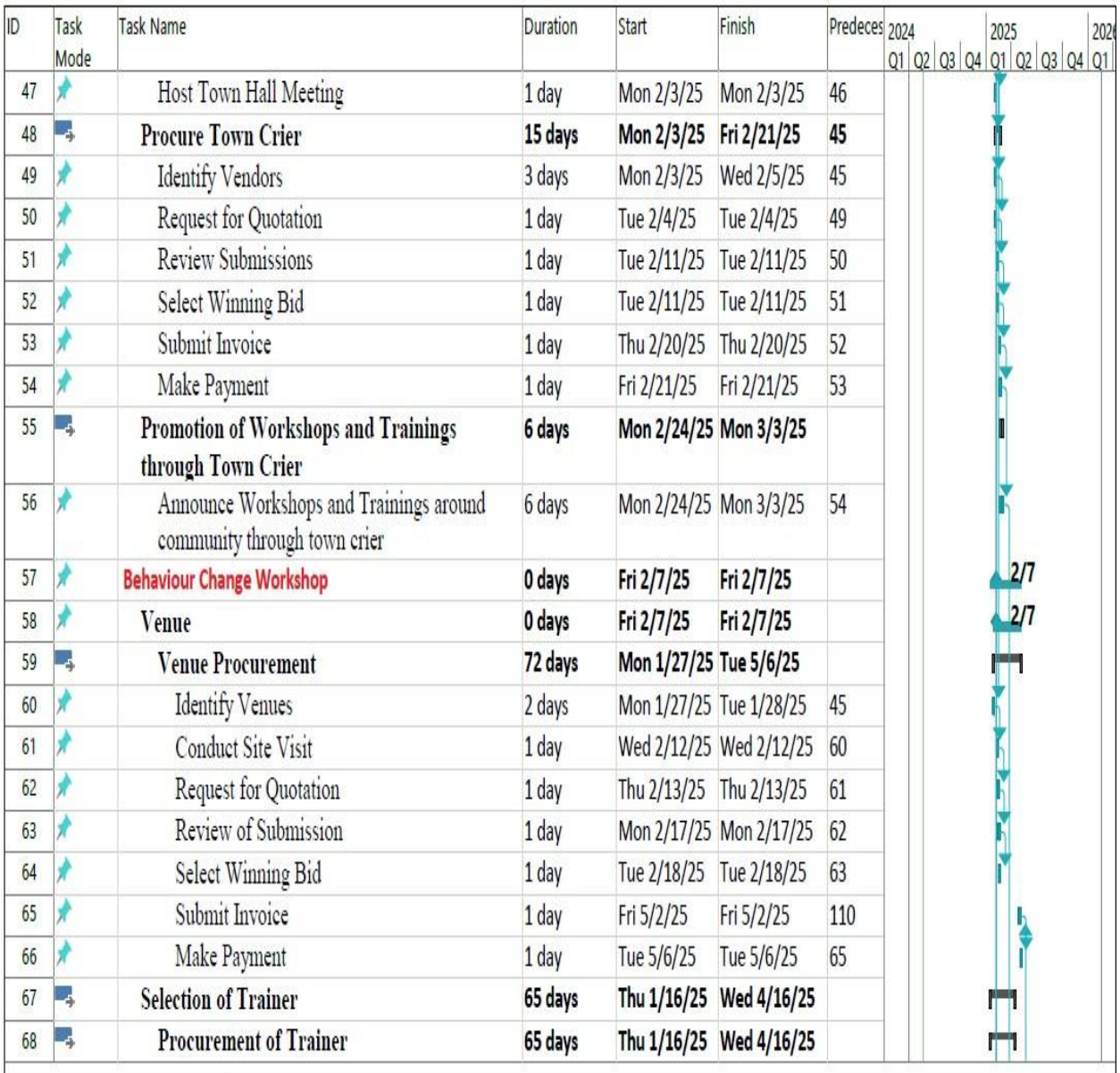


ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
1		Transforming Youth through Renewable Energy	240 days	Mon 9/30/24	Fri 8/29/25	
2		Project Start	0 days	Mon 9/30/24	Mon 9/30/24	
3		**Project Intiation**	**44 days**	**Mon 9/30/24**	**Thu 11/28/24**	
4		**Partnership Consultations**	**13 days**	**Mon 9/30/24**	**Wed 10/16/24**	
5		Identify Key Partners	5 days	Mon 9/30/24	Fri 10/4/24	2
6		Draft Partnership Invitations	3 days	Mon 10/7/24	Wed 10/9/24	5
7		Sign Partnership Invitations	1 day	Thu 10/10/24	Thu 10/10/24	6
8		Send Partnership Invitations to Heads of Agencie	2 days	Fri 10/11/24	Mon 10/14/24	7
9		Receive Response from Heads of Agencies	1 day	Tue 10/15/24	Tue 10/15/24	8
10		Meet with representatives from partner agencies	1 day	Wed 10/16/24	Wed 10/16/24	9
11		**MOU Signing**	**23 days**	**Thu 10/17/24**	**Mon 11/18/24**	
12		Draft MOU	15 days	Thu 10/17/24	Wed 11/6/24	10
13		Review MOU	6 days	Thu 11/7/24	Thu 11/14/24	12
14		Accept MOU	1 day	Fri 11/15/24	Fri 11/15/24	13
15		Sign MOU	1 day	Mon 11/18/24	Mon 11/18/24	14
16		**MOU Signing Ceremony**	**8 days**	**Tue 11/19/24**	**Thu 11/28/24**	
17		Select venue	3 days	Tue 11/19/24	Thu 11/21/24	15
18		Draft Invitation	2 days	Fri 11/22/24	Mon 11/25/24	17
19		Send Invitation	2 days	Tue 11/26/24	Wed 11/27/24	18
20		Host MOU Signing Ceremony	1 day	Thu 11/28/24	Thu 11/28/24	19
21		**Sensitization**	**30 days**	**Mon 12/16/24**	**Fri 1/24/25**	
22		**Venue Selection**	**25 days**	**Mon 12/16/24**	**Fri 1/17/25**	
23		Identification of Venues	3 days	Mon 12/16/24	Wed 12/18/24	20

ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
24		Conduct Site Visit	1 day	Thu 12/19/24	Thu 12/19/24	23
25		Request for Quotation	1 day	Fri 12/20/24	Fri 12/20/24	24
26		Review of Submission	1 day	Mon 12/30/24	Mon 12/30/24	25
27		Selection of Winning Bid	1 day	Tue 12/31/24	Tue 12/31/24	26
28		Request Invoice	1 day	Thu 1/16/25	Thu 1/16/25	33
29		Make Payment	1 day	Fri 1/17/25	Fri 1/17/25	28
30		**Sensitization Session**	**9 days**	**Fri 1/3/25**	**Wed 1/15/25**	
31		Meet with Trench Town CDC	1 day	Fri 1/3/25	Fri 1/3/25	27
32		Distribute information about Sensitization Sessio	5 days	Mon 1/6/25	Fri 1/10/25	31
33		Host Sensitization Sessions	3 days	Mon 1/13/25	Wed 1/15/25	32
34		**Sensitization Session Report**	**7 days**	**Thu 1/16/25**	**Fri 1/24/25**	
35		Draft Sensitization Session Report	3 days	Thu 1/16/25	Mon 1/20/25	33
36		Submit Sensitization Session Report	1 day	Tue 1/21/25	Tue 1/21/25	35
37		Provide feedback on Sensitization Session Repor	1 day	Thu 1/23/25	Thu 1/23/25	36
38		Approve Sensitization Session Report	1 day	Fri 1/24/25	Fri 1/24/25	37
39		**Recruitment**	**34 days**	**Wed 1/15/25**	**Mon 3/3/25**	
40		**Design Recruitment Flyer and Sign Up Sheets**	**7 days**	**Wed 1/15/25**	**Thu 1/23/25**	
41		Engage Graphic Artist	1 day	Wed 1/15/25	Wed 1/15/25	33
42		Recruitment flyer and sign up sheet designed	5 days	Thu 1/16/25	Wed 1/22/25	41
43		Printing of Recruitment flyer and sign up sheet	1 day	Thu 1/23/25	Thu 1/23/25	42
44		**Recruitment Drive**	**7 days**	**Fri 1/24/25**	**Mon 2/3/25**	**43**
45		Meet with Trench Town CDC to discuss recruitment drive	1 day	Fri 1/24/25	Fri 1/24/25	43
46		Distribute Flyers and Sign Up Sheets	5 days	Mon 1/27/25	Fri 1/31/25	45



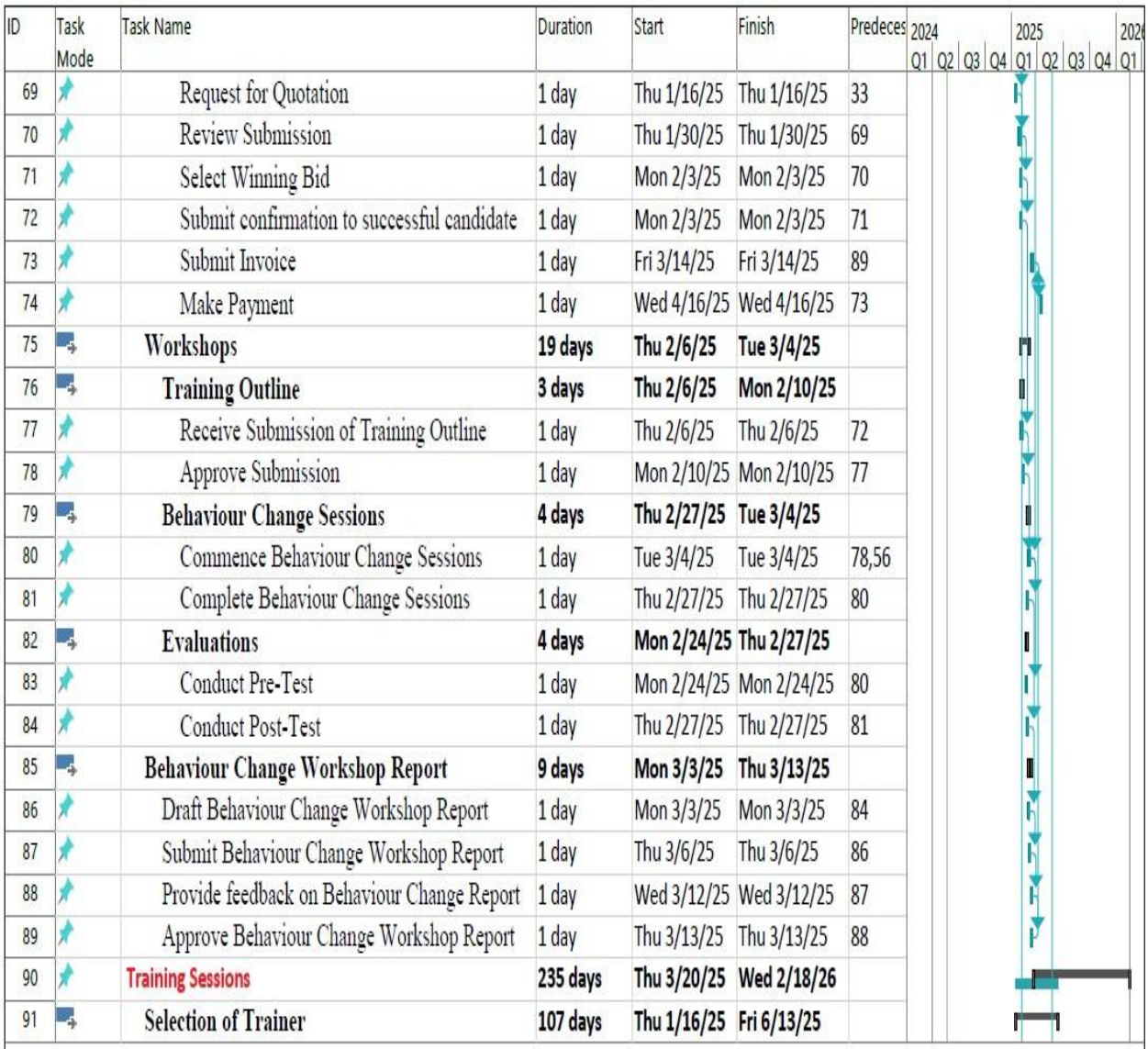
ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
47		Host Town Hall Meeting	1 day	Mon 2/3/25	Mon 2/3/25	46
48		**Procure Town Crier**	**15 days**	**Mon 2/3/25**	**Fri 2/21/25**	**45**
49		Identify Vendors	3 days	Mon 2/3/25	Wed 2/5/25	45
50		Request for Quotation	1 day	Tue 2/4/25	Tue 2/4/25	49
51		Review Submissions	1 day	Tue 2/11/25	Tue 2/11/25	50
52		Select Winning Bid	1 day	Tue 2/11/25	Tue 2/11/25	51
53		Submit Invoice	1 day	Thu 2/20/25	Thu 2/20/25	52
54		Make Payment	1 day	Fri 2/21/25	Fri 2/21/25	53
55		**Promotion of Workshops and Trainings through Town Crier**	**6 days**	**Mon 2/24/25**	**Mon 3/3/25**	
56		Announce Workshops and Trainings around community through town crier	6 days	Mon 2/24/25	Mon 3/3/25	54
57		**Behaviour Change Workshop**	**0 days**	**Fri 2/7/25**	**Fri 2/7/25**	
58		**Venue**	**0 days**	**Fri 2/7/25**	**Fri 2/7/25**	
59		**Venue Procurement**	**72 days**	**Mon 1/27/25**	**Tue 5/6/25**	
60		Identify Venues	2 days	Mon 1/27/25	Tue 1/28/25	45
61		Conduct Site Visit	1 day	Wed 2/12/25	Wed 2/12/25	60
62		Request for Quotation	1 day	Thu 2/13/25	Thu 2/13/25	61
63		Review of Submission	1 day	Mon 2/17/25	Mon 2/17/25	62
64		Select Winning Bid	1 day	Tue 2/18/25	Tue 2/18/25	63
65		Submit Invoice	1 day	Fri 5/2/25	Fri 5/2/25	110
66		Make Payment	1 day	Tue 5/6/25	Tue 5/6/25	65
67		**Selection of Trainer**	**65 days**	**Thu 1/16/25**	**Wed 4/16/25**	
68		**Procurement of Trainer**	**65 days**	**Thu 1/16/25**	**Wed 4/16/25**	



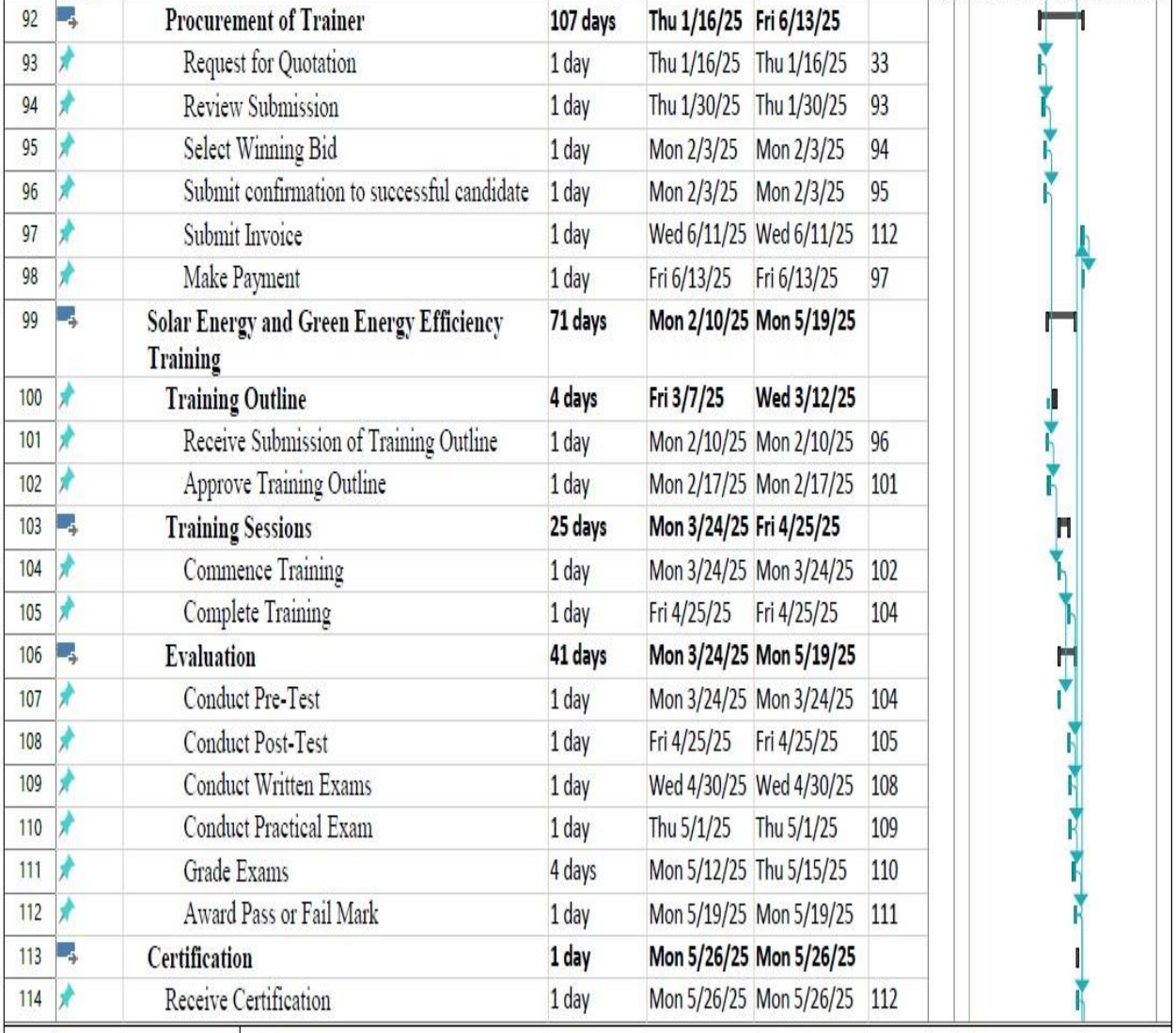
Project: Final Schedule FGP
Date: Mon 5/20/24

Task	Inactive Summary	External Tasks	
Split	Manual Task	External Milestone	
Milestone	Duration-only	Deadline	
Summary	Manual Summary Rollup	Progress	
Project Summary	Manual Summary	Manual Progress	
Inactive Task	Start-only		
Inactive Milestone	Finish-only		

ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
69		Request for Quotation	1 day	Thu 1/16/25	Thu 1/16/25	33
70		Review Submission	1 day	Thu 1/30/25	Thu 1/30/25	69
71		Select Winning Bid	1 day	Mon 2/3/25	Mon 2/3/25	70
72		Submit confirmation to successful candidate	1 day	Mon 2/3/25	Mon 2/3/25	71
73		Submit Invoice	1 day	Fri 3/14/25	Fri 3/14/25	89
74		Make Payment	1 day	Wed 4/16/25	Wed 4/16/25	73
75		**Workshops**	**19 days**	**Thu 2/6/25**	**Tue 3/4/25**	
76		**Training Outline**	**3 days**	**Thu 2/6/25**	**Mon 2/10/25**	
77		Receive Submission of Training Outline	1 day	Thu 2/6/25	Thu 2/6/25	72
78		Approve Submission	1 day	Mon 2/10/25	Mon 2/10/25	77
79		**Behaviour Change Sessions**	**4 days**	**Thu 2/27/25**	**Tue 3/4/25**	
80		Commence Behaviour Change Sessions	1 day	Tue 3/4/25	Tue 3/4/25	78,56
81		Complete Behaviour Change Sessions	1 day	Thu 2/27/25	Thu 2/27/25	80
82		**Evaluations**	**4 days**	**Mon 2/24/25**	**Thu 2/27/25**	
83		Conduct Pre-Test	1 day	Mon 2/24/25	Mon 2/24/25	80
84		Conduct Post-Test	1 day	Thu 2/27/25	Thu 2/27/25	81
85		**Behaviour Change Workshop Report**	**9 days**	**Mon 3/3/25**	**Thu 3/13/25**	
86		Draft Behaviour Change Workshop Report	1 day	Mon 3/3/25	Mon 3/3/25	84
87		Submit Behaviour Change Workshop Report	1 day	Thu 3/6/25	Thu 3/6/25	86
88		Provide feedback on Behaviour Change Report	1 day	Wed 3/12/25	Wed 3/12/25	87
89		Approve Behaviour Change Workshop Report	1 day	Thu 3/13/25	Thu 3/13/25	88
90		**Training Sessions**	**235 days**	**Thu 3/20/25**	**Wed 2/18/26**	
91		**Selection of Trainer**	**107 days**	**Thu 1/16/25**	**Fri 6/13/25**	



ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
92		**Procurement of Trainer**	**107 days**	**Thu 1/16/25**	**Fri 6/13/25**	
93		Request for Quotation	1 day	Thu 1/16/25	Thu 1/16/25	33
94		Review Submission	1 day	Thu 1/30/25	Thu 1/30/25	93
95		Select Winning Bid	1 day	Mon 2/3/25	Mon 2/3/25	94
96		Submit confirmation to successful candidate	1 day	Mon 2/3/25	Mon 2/3/25	95
97		Submit Invoice	1 day	Wed 6/11/25	Wed 6/11/25	112
98		Make Payment	1 day	Fri 6/13/25	Fri 6/13/25	97
99		**Solar Energy and Green Energy Efficiency Training**	**71 days**	**Mon 2/10/25**	**Mon 5/19/25**	
100		**Training Outline**	**4 days**	**Fri 3/7/25**	**Wed 3/12/25**	
101		Receive Submission of Training Outline	1 day	Mon 2/10/25	Mon 2/10/25	96
102		Approve Training Outline	1 day	Mon 2/17/25	Mon 2/17/25	101
103		**Training Sessions**	**25 days**	**Mon 3/24/25**	**Fri 4/25/25**	
104		Commence Training	1 day	Mon 3/24/25	Mon 3/24/25	102
105		Complete Training	1 day	Fri 4/25/25	Fri 4/25/25	104
106		**Evaluation**	**41 days**	**Mon 3/24/25**	**Mon 5/19/25**	
107		Conduct Pre-Test	1 day	Mon 3/24/25	Mon 3/24/25	104
108		Conduct Post-Test	1 day	Fri 4/25/25	Fri 4/25/25	105
109		Conduct Written Exams	1 day	Wed 4/30/25	Wed 4/30/25	108
110		Conduct Practical Exam	1 day	Thu 5/1/25	Thu 5/1/25	109
111		Grade Exams	4 days	Mon 5/12/25	Thu 5/15/25	110
112		Award Pass or Fail Mark	1 day	Mon 5/19/25	Mon 5/19/25	111
113		**Certification**	**1 day**	**Mon 5/26/25**	**Mon 5/26/25**	
114		Receive Certification	1 day	Mon 5/26/25	Mon 5/26/25	112



Project: Final Schedule FGP
Date: Mon 5/20/24

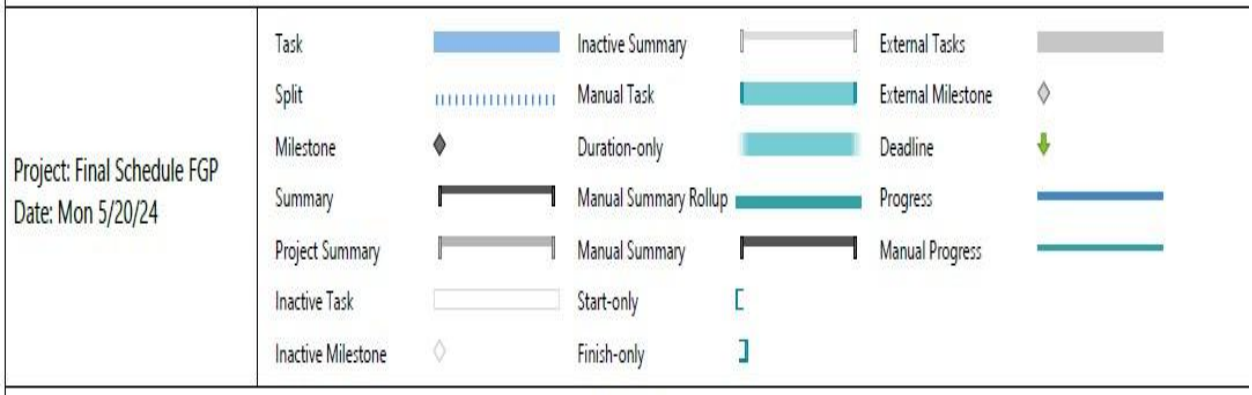
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
115		**Solar Energy and Green Energy Efficiency Training Report**	**10 days**	**Wed 5/28/25**	**Tue 6/10/25**	
116		Draft Training Report	1 day	Wed 5/28/25	Wed 5/28/25	112
117		Submit Solar Energy and Green Energy Efficiency Training Report	1 day	Thu 6/5/25	Thu 6/5/25	116
118		Provide feedback on Solar Energy and Green Energy Efficiency Training Report	1 day	Mon 6/9/25	Mon 6/9/25	117
119		Approve Solar Energy and Green Energy Efficiency Training Report	1 day	Tue 6/10/25	Tue 6/10/25	118
120		Solar Panel Installations	**46 days**	**Wed 6/11/25**	**Wed 8/13/25**	**119**
121		**Solar Panel System**	**14 days**	**Wed 6/11/25**	**Mon 6/30/25**	**119**
122		**Solar Panel System Procurement**	**14 days**	**Wed 6/11/25**	**Mon 6/30/25**	**119**
123		Request for Quotation	1 day	Wed 6/11/25	Wed 6/11/25	
124		Review Submission	1 day	Wed 6/18/25	Wed 6/18/25	123
125		Select Winning Bid	2 days	Thu 6/19/25	Fri 6/20/25	124
126		Submit confirmation to successful candidate	1 day	Mon 6/23/25	Mon 6/23/25	125
127		Submit Invoice	4 days	Tue 6/24/25	Fri 6/27/25	126
128		Make Payment	1 day	Mon 6/30/25	Mon 6/30/25	127
129		**Installation of Solar Panel System**	**0 days**	**Tue 7/1/25**	**Tue 7/1/25**	
130		Conduct Site Visit	1 day	Tue 7/1/25	Tue 7/1/25	128
131		Conduct Roof Assessment	1 day	Wed 7/2/25	Wed 7/2/25	130
132		Install Mounting System	3 days	Thu 7/3/25	Mon 7/7/25	131
133		Install Solar Panels	6 days	Tue 7/8/25	Tue 7/15/25	132
134		Install Inverter System	3 days	Wed 7/16/25	Fri 7/18/25	133

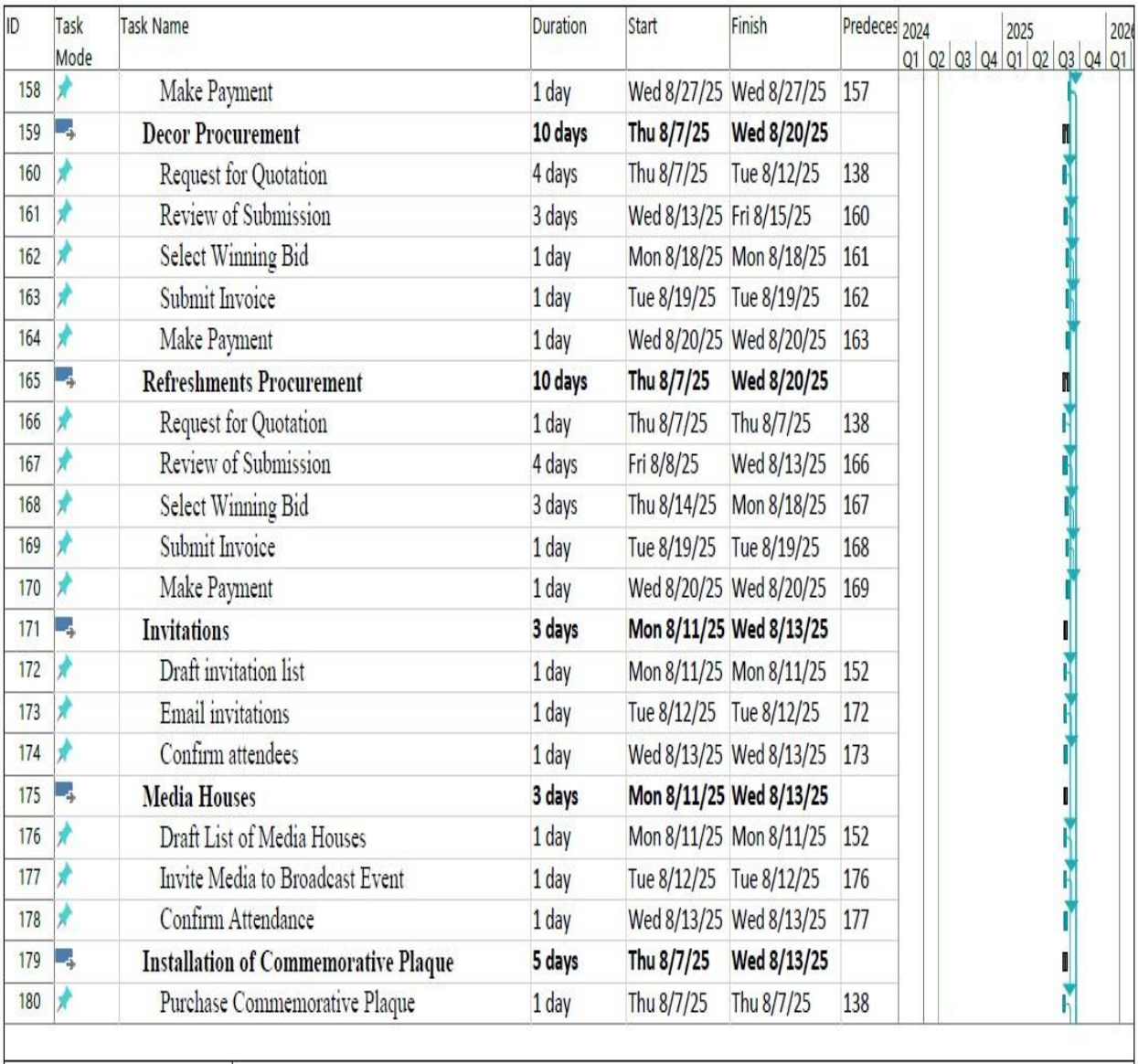
Project: Final Schedule FGP
Date: Mon 5/20/24

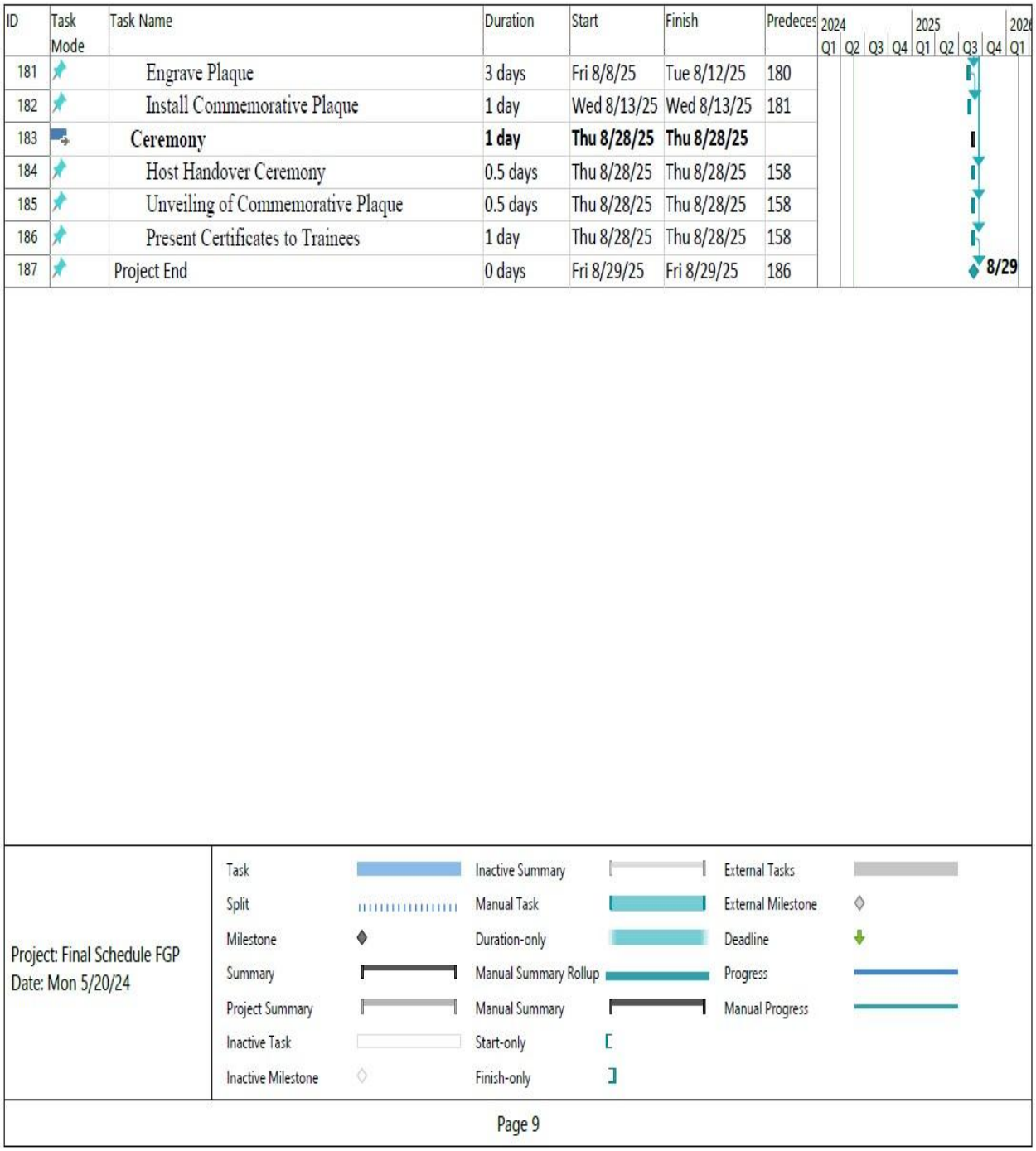
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
135		Install Electrical Wiring	4 days	Mon 7/21/25	Thu 7/24/25	134
136		Install Solar Batteries	3 days	Fri 7/25/25	Tue 7/29/25	135
137		Install Power Converter	3 days	Wed 7/30/25	Fri 8/1/25	136
138		Install Energy Meter	3 days	Mon 8/4/25	Wed 8/6/25	137
139		**Installation of LED Bulbs**	**4 days**	**Thu 8/7/25**	**Tue 8/12/25**	
140		Install Electric Wiring	3 days	Thu 8/7/25	Mon 8/11/25	138
141		Install LED Bulbs	1 day	Tue 8/12/25	Tue 8/12/25	140
142		**Post-Installation Walk Through**	**5 days**	**Thu 8/7/25**	**Wed 8/13/25**	
143		Assess Solar Panels	1 day	Thu 8/7/25	Thu 8/7/25	138
144		Assess LED Lights	1 day	Wed 8/13/25	Wed 8/13/25	141
145		**Internship**	**7 days**	**Thu 6/5/25**	**Fri 6/13/25**	
146		**Internship Request**	**7 days**	**Thu 6/5/25**	**Fri 6/13/25**	
147		Identify organizations for internship	3 days	Thu 6/5/25	Mon 6/9/25	114
148		Email request to identified organizations	3 days	Tue 6/10/25	Thu 6/12/25	147
149		Receive approval or denial of request	1 day	Fri 6/13/25	Fri 6/13/25	148
150		**Handover Ceremony**	16 days	Thu 8/7/25	Thu 8/28/25	
151		**Venue Procurement**	**15 days**	**Thu 8/7/25**	**Wed 8/27/25**	
152		Identify Venues	2 days	Thu 8/7/25	Fri 8/8/25	138
153		Conduct Site Visit	1 day	Mon 8/11/25	Mon 8/11/25	152
154		Request for Quotation	1 day	Tue 8/12/25	Tue 8/12/25	153
155		Review of Submission	4 days	Wed 8/13/25	Mon 8/18/25	154
156		Select Winning Bid	1 day	Mon 8/18/25	Mon 8/18/25	155
157		Submit Invoice	6 days	Tue 8/19/25	Tue 8/26/25	156



ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
158		Make Payment	1 day	Wed 8/27/25	Wed 8/27/25	157
159		**Decor Procurement**	**10 days**	**Thu 8/7/25**	**Wed 8/20/25**	
160		Request for Quotation	4 days	Thu 8/7/25	Tue 8/12/25	138
161		Review of Submission	3 days	Wed 8/13/25	Fri 8/15/25	160
162		Select Winning Bid	1 day	Mon 8/18/25	Mon 8/18/25	161
163		Submit Invoice	1 day	Tue 8/19/25	Tue 8/19/25	162
164		Make Payment	1 day	Wed 8/20/25	Wed 8/20/25	163
165		**Refreshments Procurement**	**10 days**	**Thu 8/7/25**	**Wed 8/20/25**	
166		Request for Quotation	1 day	Thu 8/7/25	Thu 8/7/25	138
167		Review of Submission	4 days	Fri 8/8/25	Wed 8/13/25	166
168		Select Winning Bid	3 days	Thu 8/14/25	Mon 8/18/25	167
169		Submit Invoice	1 day	Tue 8/19/25	Tue 8/19/25	168
170		Make Payment	1 day	Wed 8/20/25	Wed 8/20/25	169
171		**Invitations**	**3 days**	**Mon 8/11/25**	**Wed 8/13/25**	
172		Draft invitation list	1 day	Mon 8/11/25	Mon 8/11/25	152
173		Email invitations	1 day	Tue 8/12/25	Tue 8/12/25	172
174		Confirm attendees	1 day	Wed 8/13/25	Wed 8/13/25	173
175		**Media Houses**	**3 days**	**Mon 8/11/25**	**Wed 8/13/25**	
176		Draft List of Media Houses	1 day	Mon 8/11/25	Mon 8/11/25	152
177		Invite Media to Broadcast Event	1 day	Tue 8/12/25	Tue 8/12/25	176
178		Confirm Attendance	1 day	Wed 8/13/25	Wed 8/13/25	177
179		**Installation of Commemorative Plaque**	**5 days**	**Thu 8/7/25**	**Wed 8/13/25**	
180		Purchase Commemorative Plaque	1 day	Thu 8/7/25	Thu 8/7/25	138





ID	Task Mode	Task Name	Duration	Start	Finish	Predeces
181		Engrave Plaque	3 days	Fri 8/8/25	Tue 8/12/25	180
182		Install Commemorative Plaque	1 day	Wed 8/13/25	Wed 8/13/25	181
183		**Ceremony**	**1 day**	**Thu 8/28/25**	**Thu 8/28/25**	
184		Host Handover Ceremony	0.5 days	Thu 8/28/25	Thu 8/28/25	158
185		Unveiling of Commemorative Plaque	0.5 days	Thu 8/28/25	Thu 8/28/25	158
186		Present Certificates to Trainees	1 day	Thu 8/28/25	Thu 8/28/25	158
187		Project End	0 days	Fri 8/29/25	Fri 8/29/25	186

Note: Author's Own Work

4.3.5 Control Schedule

Control Schedule is the process of monitoring the status of the project to update the project schedule and manage changes to the schedule baseline (Project Management Institute, 2017, p. 222). The project is estimated to be completed in eleven (11) months. If this timeline is not adhered to, it can have serious implications on the project's scope, cost, and availability of resources. The project team headed by the project manager will be responsible for monitoring the timeline of the project. If the need arises for a change to the schedule, this will have to be thoroughly assessed to determine the impact on the project and what corrective measures would need to be implemented. Any request to adjust the schedule must be made in writing and submitted through the change control form (Appendix 5). Approval or Denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of two (2) weeks. If approval is granted, the schedule will be updated. It is also very important once the execution of the project takes place that the lessons learned are captured by the project team using the lessons learned register (Appendix 6).

4.4 Cost Management Plan

Project Cost Management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget (Project Management Institute, 2017, p. 231). The project manager, along with the project team inclusive of the accounting and procurement officers, will develop the cost management plan. The cost to implement the Transforming Youth through Renewable Energy project will be estimated through the use of the work break-down structure to formulate the cost associated with each work package. The overall budget will then be tabulated with the estimated cost, contingency and management reserve. The main project sponsors will be responsible for funding the overall project; however, stakeholders, such as the Trench Town CDC and the Social Development Commission, will provide funding in-kind. The budget will be monitored and controlled by the Project Manager and Steering Committee.

4.4.1 Estimate Cost

The estimation of the cost for the project provides a financial breakdown for each aspect. This provides a clear overview of what is to be spent under each work package for the commencement and close-out of the project. The project team will be responsible for the creation of the estimation of cost. The costs will be estimated using analogous and parametric estimating and expert judgment. The analogous estimating is done through the use of historical data, this would be used for the venue costs and workshops. Parametric estimating also utilizes historical data, however, it is expressed through calculations based on parameters. This would be reflected in the installation of the solar panels based on the kilowattage. Tables 12 and 13 below outline the cost estimation for the Transforming Youth through Renewable Energy project.

Table 12

Cost Estimation (Source: Author, Kimberley Wellington nee`Morgan, 2024)

WBS ID	WBS Name	Quantity	Unit Cost	Total Cost
Project Initiation				**$121,000.00**
1.1	Partnership Consultations	2	$25,000.00	$50,000.00
1.2	MOU Signing	1	$6,000.00	$6,000.00
1.3	MOU Signing Ceremony	1	$65,000.00	$65,000.00
Sensitization				**235,000**
2.1	Venue Selection	1	$60,000.00	$60,000.00
2.2	Sensitization Session	3	$ 58,333.33	$175,000.00
Recruitment				**$180,000.00**
3.1	Design Recruitment Flyer and	1	$25,000.00	$25,000.00

WBS ID	WBS Name	Quantity	Unit Cost	Total Cost
	Sign Up Sheets			
3.2	Recruitment Drive	1	$65,000.00	$65,000.00
3.3	Procurement of Town Crier	1	$15,000.00	$15,000.00
3.4	Promotion of Workshops and Trainings by Town Crier	1	$75,000.00	$75,000.00
Behaviour Change Workshop				**$450,000.00**
4.1	Venue	1	$60,000.00	$60,000.00
4.3.2	Behaviour Change Sessions	4	$93,750.00	$375,000.00
4.3.3	Evaluations	1	$15,000.00	$15,000.00
Training Sessions				**$735,000.00**

WBS ID	WBS Name	Quantity	Unit Cost	Total Cost
5.2.2	Training Sessions	16	$40,625.00	$650,000.00
5.2.3	Evaluations	4	$12,500.00	$50,000.00
5.3	Certification	30	$1,667.00	$35,000.00
Solar Panel Installation				**$3,225,000.00**
6.2	Installation of Solar Panel System	1	$3,200,000.00	$3,200,000.00
6.3	Installation of LED Bulbs	1	$25,000.00	$25,000.00
Ceremony				**$710,000.00**
8.6	Install Commemorative Plaque	1	$65,000.00	$65,000.00
8.7	Host Handover Ceremony	1	$650,000.00	$650,000.00

Note: Author's Own Work

Table 13

Cost Estimation for Human Resource (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Team Resource	Quantity	Total Cost (JMD)
Project Manager	1	$6,500,000.00
Project Coordinator	1	$5,000,000.00
Procurement Officer	1	$4,500,000.00
Project Assistant	1	$2,650,000.00
Accounting Officer	1	$2,570,600.10
Legal Officer	1	$2,651,000.00
Trench Town CDC	1	$250,000.00
Behaviour Modification Trainer	1	$550,000.00
Solar Energy and Renewable Energy Trainer	1	$1,500,000.00
Solar Panel Expert	1	$650,099.00
Total		$26,821,699.10

Note: Author's Own Work

4.4.2 Determine Budget

The total budget will be determined through the aggregation of all work packages as projected through the estimation process. It will be further compounded through the addition of the subtotal of work packages and the contingency reserve of seven percent (7%) . This is known as the cost baseline and is the approved spend for the project. The management reserve,

which is three percent (3%) of the cost baseline, will be added to finalize the budget. The management reserve will be determined by the project manager and is used for unknown risks that may occur during the execution of the project. The budget will be shared with project sponsors for approval. Table 14 outlines the budget for the Transforming Youth through Renewal Energy project.

Table 14

Budget (Source: Author, Kimberley Wellington nee`Morgan, 2024)

Budget Items	Cost
Project Initiation	$121,000.00
Sensitization	$235,000.00
Recruitment	$180,000.00
Behaviour Change Workshop	$450,000.00
Training Sessions	$735,000.00
Solar Panel Installation	$3,225,000.00
Ceremony	$710,000.00
Team Resource	$26,821,699.10

Budget Items	Cost
Subtotal	$32,477,699.10
Contingency (10%)	$2,273,438.93
Cost Baseline	$34,751,138.04
Management Reserve (3%)	$1,071,764.07
Total Budget	**$35,822,902.11**

Note: Author's Own Work

4.4.3 Control Cost

Once the budget has been approved, checks and balances need to be integrated to ensure that the funds are allocated according to what was approved. This takes into consideration possible changes to the cost and the measures to counter. It also considers the measures needed to ensure the activities to which funding has been assigned is carried out satisfactorily. Much of the effort of cost control involves analyzing the relationship between the consumption of project funds and the work being accomplished for such expenditure (Project Management Institute, 2017, p. 259). The project manager will utilize tools and techniques such as Cost Variance, Inspections and Expenditure Reports to monitor how the budget is spent based on the activities.

The Cost Variance is a mathematical calculation used to determine if the budget is over or under the threshold. The cost variance will be determined by subtracting the Earned Value (EV), which is the value of the approved budgeted work from the Actual Cost (AC), which is the expense made to date for the activity. If the result from the calculation yields to zero or a positive

number, this indicates that the project is within budget or under budget. If the results, however, are negative. This indicates that the project is over budget and corrective actions are needed. To monitor this, the project manager will carry out monthly checks to determine the status of the project. If the project is over budget, the project manager will assess the situation to identify the cause of the over-run and determine the impact of the project as well as the recommended corrective measures. This will be reported to the Project Steering Committee and the project sponsors two (2) days after identification. Thereafter, the Project Steering Committee and project sponsors will deliberate and select the best way forward, after which the project manager will facilitate implementation and monitoring of the selected corrective action.

Inspections will also be used in tandem with the monitoring of the costs. This is to ensure that the work stated for the budgeted cost is the actual work accomplished. These will take place as impromptu inspections for days of the training and installation of the solar panels.

Expenditure reports will be completed monthly by the project assistant and accounting officer and submitted to the project manager to analyze the amount of funds spent over the period. To develop these reports a projected monthly estimate (Figure 11) will be developed. It will outline the activities where money will be spent and the amount needed. This will help the project assistant and accounting officer to determine if the budgeted amount was under or over the amount actually spent.

Figure 11

Projected Monthly Estimates (Source: Author, Kimberley Wellington nee`Morgan, 2024)

WBS ID	WBS Name	Quantity	Unit Cost	Total Cost	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11
Project Initiation				**$121,000.00**											
1.1	Partnership Consultations	2	$25,000.00	$50,000.00	$50,000.00										
	Human Resources				$2,170,145.46										
1.2	MOU Signing	1	$6,000.00	$6,000.00		$6,000.00									
1.3	MOU Signing Ceremony	1	$65,000.00	$65,000.00		$65,000.00									
	Human Resources					$2,170,145.46									
Sensitization				**235,000**											
2.1	Venue Selection	1	$60,000.00	$60,000.00			$60,000.00								
	Human Resources						$2,170,145.46								
2.2	Sensitization Session	3	$58,333.33	$175,000.00				$175,000.00							
	Human Resources							$2,170,145.46							
Recruitment				**$180,000.00**											
3.1	Design Recruitment Flyer and Sign Up Sheets	1	$25,000.00	$25,000.00					$25,000.00						
3.2	Recruitment Drive	1	$65,000.00	$65,000.00					$65,000.00						
3.3	Procurement of Town Crier	1	$15,000.00	$15,000.00					$15,000.00						
3.4	Promotion of Workshops and Trainings by Town Crier	1	$75,000.00	$75,000.00					$75,000.00						
	Human Resources			$2,420,145.46					$2,420,145.46						
Behaviour Change Workshop				**$450,000.00**											
4.1	Venue	1	$60,000.00	$60,000.00						$60,000.00					
	Human Resources			$2,420,145.46						$2,420,145.46					
4.3.2	Behaviour Change Sessions	4	$93,750.00	$375,000							$375,000				
4.3.3	Evaluations	1	$15,000.00	$15,000.00							$15,000.00				
	Human Resources			$2,720,145.46							$2,720,145.46				
Training Sessions				**$735,000.00**											
5.2.2	Training Sessions	16	$40,625.00	$650,000.00								$650,000.00			
	Human Resources			$3,670,145.46								$3,670,145.46			

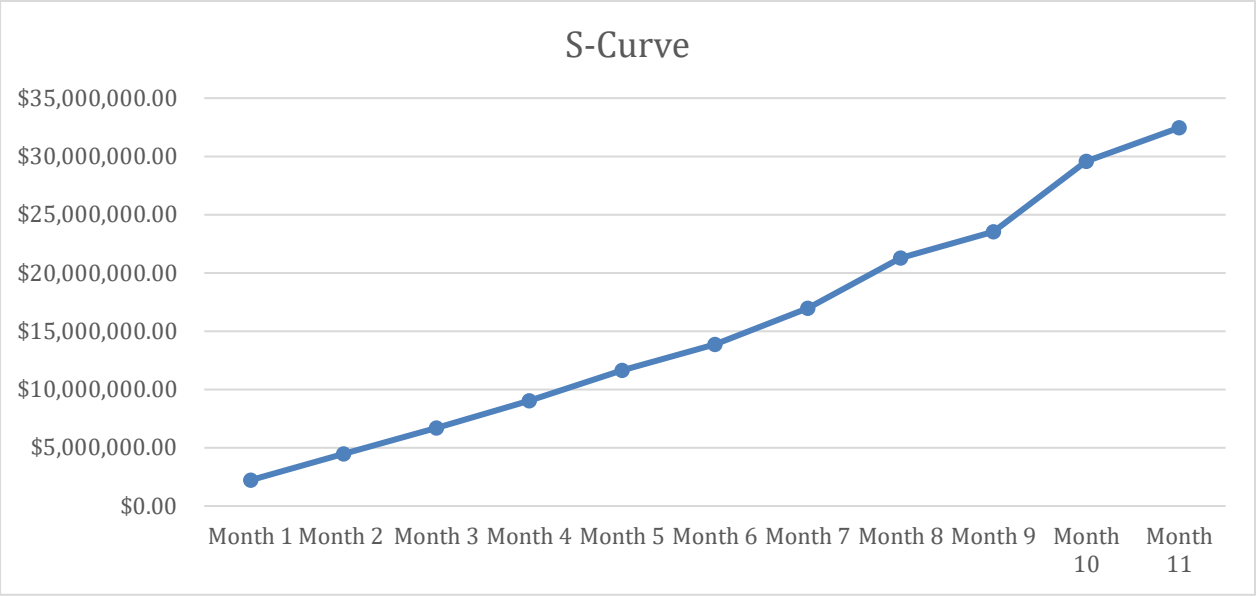
WBS ID	WBS Name	Quantity	Unit Cost	Total Cost	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11
	Human Resources			$2,170,145.46									$2,170,145.46		
Solar Panel Installation				**$3,225,000.00**											
6.2	Installation of Solar Panel System	1	$3,200,000.00	$3,200,000.00										$3,200,000.00	
6.3	Installation of LED Bulbs	1	$25,000.00	$25,000.00										$25,000.00	
	Human Resources			$2,820,244.46										$2,820,244.46	
Ceremony				**$710,000.00**											
8.6	Install Commemorative Plaque	1	$65,000.00	$65,000.00											$65,000.00
8.7	Host Handover Ceremony	1	$650,000.00	$650,000.00											$650,000.00
	Human Resources			$2,170,145.46											$2,170,145.46
				PV Total	$2,220,145.46	$2,241,145.46	$2,230,145.46	$2,345,145.46	$2,600,145.46	$2,480,145.46	$3,110,145	$4,320,145.46	$2,755,145.46	$6,045,244.46	$2,885,145.46
				PV Cummalative	$ 2,220,145.46	$ 4,461,290.93	$ 6,691,436.39	$ 9,036,581.85	$ 11,636,727.32	$ 14,116,872.78	$ 17,227,018.24	$ 21,547,163.71	$ 23,802,309.17	$ 29,847,553.63	$ 32,732,699.10

Note: Author's Own Work

The S-Curve (Figure 12) is a graphical representation of the cumulative budgeted amount. This serves as a baseline that will be compared with the actual cost.

Figure 12

S-Curve Graph (Source: Author, Kimberley Wellington nee`Morgan, 2024)



Note: Author's Own Work

Any request to adjust the budget must be made in writing and submitted through the change control form (Appendix 5). Approval or Denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of two (2) weeks. If approval is granted, the plan will be updated. It is also very important once the execution of the project takes place that the lessons learned are captured by the project team using the lessons learned register (Appendix 6).

4.5 Stakeholder Management Plan

Project Stakeholder Management includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project; to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution (Project Management Institute, 2017, p. 503). The project manager will identify the stakeholders of the Transforming Youth through Renewable Energy project. This will be done through the creation of a stakeholder register. The identified stakeholders will then be further reviewed and classified based on their level of authority and interest in the project as well as their level of awareness and support given it.

4.5.1 Identify Stakeholder

There are thirteen stakeholders identified as persons or organizations that could impact or be impacted by the Transforming Youth through Renewable Energy Project. They will be classified by their roles and responsibilities, their communication method, their expectations, and what is required of them to complete the project. Stakeholder identification has an impact on the success of the project as knowing who the stakeholders are allows the project manager to develop strategies to engage and successfully manage them. It also helps to foster plans to create stakeholder buy-in and support for the project Table 15 shows the stakeholder register created to identify the stakeholders of the project. Below that, Table 16 shows the power and interest classification and the justification behind each selection.

Table 15

Stakeholder Register (Source: Author, Kimberley Wellington nee`Morgan, 2024)

ID	Stakeholder	Role\Responsibilities	Category	Communication Method	Expectations	Requirements
1	Government of Jamaica	Project Sponsor - provision of funds, approval of spend and change control request	External	Face to face meetings, phone calls, emails	Increased economic gain	Funding to execute all project deliverables
2	Planning Institute of Jamaica	Project Sponsor - provision of funds, approval of spend and change control request	Internal	Face to face meetings, phone calls, emails	Increased usage of renewable energy to generate electricity	Funding to execute all project deliverables
3	HEART NSTA/Trust	Certification Providers - Certify Trench Town Youth based on their performance in the training	External	Face to face meetings, phone calls, emails	Increased employability of youth in Trench Town	Provision of certification

ID	Stakeholder	Role\Responsibilities	Category	Communication Method	Expectations	Requirements
4	Caribbean Maritime University	Trainers - Execute training in renewable energy and behaviour modification	External	Face to face meetings, phone calls, emails	Increased number of youth interested in renewable energy	Provision of training outline, Execution of training material. Completion of Training Report
5	Vector Institute	Trainers - Execute training in Solar Photovoltaic (PV) Installation	External	Face to face meetings, phone calls, emails	Increased number of youth interested in Solar Photovoltaic (PV) Installation	Provision of training outline, Execution of training material. Completion of Training Report
6	Social Development Commission	Community Liaison - contacting community group and providing them with information	External	Face to face and virtual meetings, phone calls, emails	Improved relationship with community residents	Main facilitator between Project Team and Trench Town CDC
7	Trench Town Community Development Committee	Community Group - Representative of the community, they promote and recruit all aspects of the	External	Face to face meetings, phone calls, emails, whats app messages	Improved relationship with community residents	Promote trainings and workshops and recruit youth

ID	Stakeholder	Role\Responsibilities	Category	Communication Method	Expectations	Requirements
		project				
8	Trench Town Youth	Trainees - Main Beneficiaries of the project	External	Face to face meetings, phone calls, emails, whats app messages, town cryer	Increased youth employability	Actively attend and participate in trainings and workshops
9	Trench Town Residents	Community - Participation in sensitization sessions	External	Face to face meetings, phone calls, emails, whats app messages, town cryer	Improved usage of renewable energy	Attend and participate in sensitization sessions
10	Member of Parliament	Political Representative - promotion of the project	External	Face to face meetings, phone calls, emails, text messages	Improved relationship with community residents	Promote trainings and workshops
11	Project Team	Project Team - planning, executing and monitoring of project activities to completion	Internal	Face to face meetings, phone calls, emails, whats app messages	Completed project in time, scope and budget	Clear understanding of project objectives and how to execute them
12	Solar Panel Energy Expert	Lead Installer for the	External	Face to face meetings,	Completed solar panel installation	Have requisite skills and

ID	Stakeholder	Role\Responsibilities	Category	Communication Method	Expectations	Requirements
		installation of solar panel unit and LED bulbs		phone calls, emails		experience to provide recommendations and execute installation of 10 KWh solar energy system
13	Steering Committee	Steering Committee - monitor project progress and grant approvals	Internal	Face to face meetings, phone calls, emails	Completed project in time, scope and budget	Provide technical guidance, approvals and monitoring of project objectives

Note: Author's Own Work

Table 16

Power Interest Classification (Source: Author, Kimberley Wellington nee`Morgan, 2024)

ID	Stakeholder	Power	Interest	Explanation
1	Government of Jamaica	High	High	The Government of Jamaica has high power and high interest in this project which indicates that they have to be managed closely. As a major sponsor of this project, they have the authority to make key decisions and approve or deny changes to the project. Their interest in the project is high as they stand to benefit economically through the increase in number of persons employed and also further achievement of the Jamaica's Vision 2030 and SDGs with the increase use of renewable energy

ID	Stakeholder	Power	Interest	Explanation
2	Planning Institute of Jamaica	High	High	The PIOJ has high power and high interest in this project which indicates that they have to be managed closely. As a major sponsor of this project, they have the authority to make key decisions and approve or deny changes to the project. Their interest in the project is high as they stand to benefit through the achievement of the Jamaica's Vision 2030 and SDGs with the increase use of renewable energy
3	HEART NSTA/Trust	Low	High	The HEART NSTA/Trust has low power and high interest in this project which indicates they have to be kept informed. This means that they are provided with timely updates on the project. Their low power is indicative of the limited authority the organization has to make decisions as it relates to the project. Their interest is high in the project as it offers the ability to achieve their mandate of increased youths trained and certified.
4	Caribbean Maritime University	Low	High	The Caribbean Maritime University has low power and high interest in this project which indicates they have to be kept informed. This means that they are provided with timely updates on the project. Their low power is indicative of the limited authority the organization has to make decisions as it relates to the project. Their interest is high in the project as they aim to benefit from the promotion of their university through their participation.
5	Vector Institute	Low	High	The Vector Institute has low power and high interest in this project which indicates they have to be kept informed. This means that they are provided with timely updates on the project. Their low power is indicative of the limited authority the organization has to make decisions as it

ID	Stakeholder	Power	Interest	Explanation
				relates to the project. Their interest is high in the project as they aim to benefit from the promotion of their institution in Solar Photovoltaic (PV) Installation.
6	Social Development Commission	Low	High	The Social Development Commission has low power and high interest in this project which indicates they have to be kept informed. This means that they are provided with timely updates on the project. Their low power is indicative of the limited authority the organization has to make decisions as it relates to the project. Their high interest in the project is in regard to their mandate of community development.
7	Trench Town Community Development Committee	Medium	High	The Trench Town Community Development Committee has medium power and high interest in this project. This means they have to be managed closely and be kept informed. Their medium power is indicative of having authority to influence decision-making. The committee serves as the representative body of the community, it is important to include their needs to ensure community buy-in of the project. They have a high interest in the project as it will be beneficial to their community.
8	Trench Town Youth	Low	High	The Trench Town Youth have low power and high interest in this project which indicates they have to be kept informed. This means that they are provided with timely updates on the project. Their low power is indicative of the limited authority they have to make decisions as it relates to the project. Their high interest in the project is based on their benefits to become more employable
9	Trench Town Residents	Low	High	Trench Town Residents has low power and high interest in this project which indicates they have to be kept informed. This means that they are provided with timely updates

ID	Stakeholder	Power	Interest	Explanation
				on the project. Their low power is indicative of the limited authority the organization has to make decisions as it relates to the project. They have a high interest in the project as it will be beneficial to their community.
10	Member of Parliament	Low	High	The Member of Parliament has low power and high interest in this project which indicates they have to be kept informed. This means that they are provided with timely updates on the project. The low power is indicative of the limited authority he has to make decisions as it relates to the project. He has a high interest in the project as it will be beneficial to the community which he represents.
11	Project Team	Medium	High	The project team has medium power and high interest in this project. This means they have to be managed closely and be kept informed. Their medium power is indicative of having authority to influence decision-making through their expertise and experience. They have a high interest in the project as their aim is to bring the project to successful completion
12	Solar Panel Energy Expert	Low	Low	The Solar Panel Energy Expert has low power and low interest in the project and should be monitored. The low power is indicative of the limited authority the expert has to make decisions as it relates to the project. The low interest is due to the limited benefits of the outcome of the outcome.
13	Steering Committee	High	High	The Steering Committee has high power and high interest in this project which indicates that they have to be managed closely. They have the authority to make key decisions and approve or deny changes to the project. Their interest in the project is high as their aim is to monitor the project

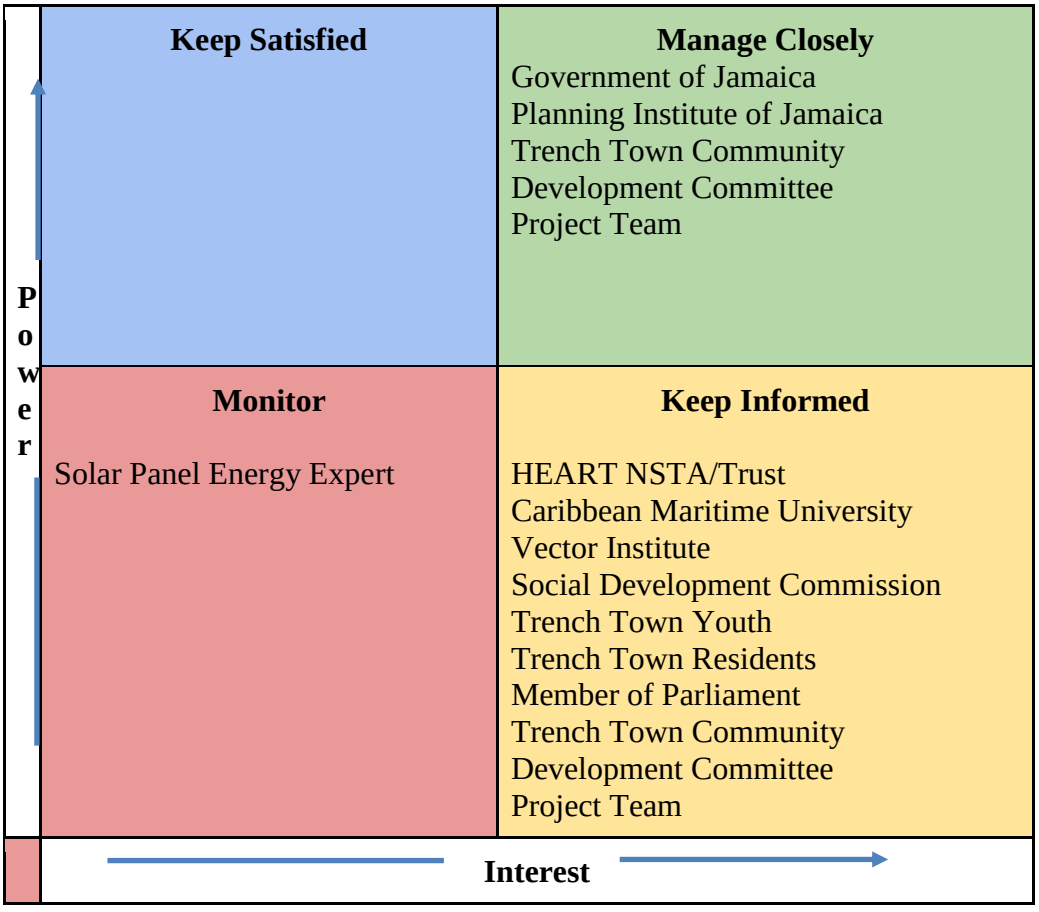
ID	Stakeholder	Power	Interest	Explanation
				activities to ensure its successful completion

Note: Author's Own Work

The project's stakeholders have been classified using a power interest matrix. Figure 13 further elaborates on this visually.

Figure 13

Power Interest Stakeholder Matrix (Source: Author, Kimberley Wellington nee`Morgan, 2024)



Note: Author's Own Work

4.5.2 Plan Stakeholder Engagement

Once the stakeholders have been identified, a plan must be put in place to determine how best they should be engaged. Table 17 outlines the stakeholder engagement matrix which shares five (5) statuses based on a stakeholder's level of awareness of the project and their support towards it. The status of each stakeholder will be noted with the letters 'D' and 'Ç'. 'D' is the desired state the project wishes the stakeholder to be in and 'Ç' outlines the current state of the stakeholder, Based on this analysis, the project manager must prepare a plan of action to improve the stakeholder's current state to their desired state.

Table 17

Stakeholder Engagement Assessment Matrix (Author: Kimberley Wellington nee` Morgan, 2024)

Stakeholder	Unaware	Resistant	Neutral	Supportive	Leading
Government of Jamaica					C D
Planning Institute of Jamaica					C D
HEART NSTA/Trust			C	D	
Caribbean Maritime University			C	D	
Vector Institute			C	D	

Social Development Commission				C	D
Trench Town Community Development Committee				C	D
Trench Town Youth			C	D	
Trench Town Residents			C	D	
Member of Parliament			C	D	
Project Team					C D
Solar Panel Energy Expert	C		D		
Steering Committee					C D

Note: Author's Own Work

4.5.3 Manage Stakeholder Engagement

Manage Stakeholder Engagement is the process of communicating and working with stakeholders to meet their needs and expectations, address issues, and foster appropriate stakeholder involvement (Project Management Institute, 2017, p. 523). The stakeholders under this project will be managed utilizing specific techniques and tools. This includes but is not limited to, the identification of the best means of communication for each stakeholder, this will be further elaborated in the communication management plan.

The project manager will also utilize skills in conflict management and negotiation to address stakeholder's concerns and purposefully increase their awareness of the project's goals and objectives sharing the benefits to each stakeholder, thus increasing their level of support for the project. The project manager will also have to be culturally and politically aware based on the location of the project and the vulnerability of the groups.

Meetings will be used to manage the stakeholder's needs and address any issues they may be facing with the implementation of the project. It is important to make the stakeholder's feel involved especially those who are unsure of the project and those who are also not supportive. The management of these stakeholders will be dependent on the Project Manager and Project Team.

4.5.4 Monitor Stakeholder Engagement

As stated previously, the project manager and project team are responsible for managing the expectations, issues and needs of all stakeholders of the project. The communication methods for each stakeholder will be elaborated in the communication management plan and would be used to monitor this aspect of the project. the monitoring of stakeholder engagement is especially important as stakeholders can disrupt the progress of the project if they feel as though their needs are not being met or they are unaware of the project.

As such, the project manager and project team will work assiduously to engage stakeholders based on their preferred communication mode and the level of frequency that they desire. This will include, information on the project, timelines, project updates and any interference, disruption or delays. The stakeholders will also be able to contact the project manager and project team regarding any issues or concerns they may have about the project. Any request to adjust the stakeholder engagement plan must be made in writing and submitted through the change control form (Appendix 5). Approval or Denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of two (2) weeks. If approval is granted, the plan will be updated. It is also very important once the execution of the project takes place that the lessons learned are captured by the project team using the lessons learned register (Appendix 6).

4.6 Communications Management Plan

The communication management plan defines and documents the project's communication needs. It is a guide which serves to identify the intended audience, the various communication channels and how they align to the needs of the project. Communication is crucial to the process of project management. This forms a key role in how the work of project will be completed. Communication should be clear, accurate and concise and the mode in which

it is carried out should be identified as the best means to prevent any issues associated with miscommunication. The main modes of communication include: Face-to-face and virtual meetings, emails, hard copy reports, town cryer, flyers, telephone calls and whats app messages. The following outlines the list of the key audience as it relates to the project:

- ➢ Project Sponsors
- ➢ Project Steering Committee
- ➢ Trench Town Community Development Committee
- ➢ Trench Town Residents
- ➢ Project Team
- ➢ Trainers
- ➢ Solar Panel Expert

The communication management plan details the project's communication matrix and communication escalation plan and how the monitoring of the plan will take place.

4.6.1 Plan Communications Management

Plan Communications Management is the process of developing an appropriate approach and plan for project communication activities based on the information needs of each stakeholder or group, available organizational assets, and the needs of the project (Project Management Institute, 2017, p. 365). This features the communication matrix which is a tool used to determine the best mode of communication to achieve a particular deliverable, that is also best suited for the intended audience.

Table 18

Communications Matrix *(Author: Kimberley Wellington nee` Morgan, 2024)*

Communication Type	Frequency	Delivery Method	Purpose	Owner	Audience
Project Kickoff Meeting	Once at the start of the project	Face-to-face Meetings	Detailed Review of the project's objectives, budget, resources and schedule	Project Manager	Project Sponsors, Project Steering Committee, Trench Town CDC, Project Team
Steering Committee Meetings	Monthly	Face-to-face and virtual meetings	Meeting with core group of stakeholders, who can provide technical advice to move the project forward and grant approvals to meet the project's objective	Planning Institute of Jamaica)Project Sponsor)	Steering Committee
Project Progress Meetings	Monthly	Face-to-face Meetings	Meetings to provide updates on the work being done on the project, to get clarity, raise issues and solve problems	Project Manager	Steering Committee, Trench Town CDC. Project Team
Project Status Report	Monthly	Hard Copies, Email	Detailed update of monthly progression	Project Team	Steering Committee, Trench Town CDC.

Communication Type	Frequency	Delivery Method	Purpose	Owner	Audience
			of the project		
Project Team meetings	Weekly	Face-to-face Meetings, whats app messages	Review of project activities and deliverables of each team member	Project Manager	Project Team
Sensitization Session	As needed	Face-to-face Meetings	Information sharing on the project and its objectives and the benefits to the community	Project Manager	Trench Town Residents
Trainer's Report	As requested	Hard Copies, Email	Detailed report outlining what took place in the trainings, who attended and the main achievements	Trainers	Project Manager, Steering Committee
Site Visit	For every venue selection	Face-to-face Meeting	Review of site to determine acceptability	Project Manager	Project Team
Post Installation Walk-through	After installation of solar panels	Face-to-face Meeting	Physical inspection to evaluate if the installation is operational	Project Manager	Project Team, Solar Panel Expert, Trainer
Project Debriefing	Once at the end of the project	Face-to-face Meeting	Review of project objective to determine if	Project Manager	Project Sponsors, Project Steering

Communication Type	Frequency	Delivery Method	Purpose	Owner	Audience
			they were achieved and lessons learned		Committee, Trench Town CDC, Project Team

Note: Author's Own Work

4.6.2 Manage Communications Management

Once the audience has been identified based on the type of communication and purpose, the management of communication among stakeholders needs to take place. Ground rules need to be established for the communication methods to ensure the flow of information throughout the project. Emails, especially those sent to the Project Manager, Project Team, Steering Committee, or Project Sponsor must receive an acknowledgment of the email once received. A structured response to the request of the email must be given within two (2) business days. For more interactive modes of communication such as meetings, invitations must be sent at least two weeks before the meeting and follow-up to confirm responses must be done at least three (3) days prior. On the day, the meeting should have a timed agenda and chair of the meeting. It should result in the key actions or steps to be taken following the end of the meeting.

If there are instances in which a challenge has been experienced with communication especially about tasks that have a high impact on the project. These must be escalated to the appropriate officer to get results. Table 19 provides an example of possible risks in communication and the assigned person for escalation.

Table 19

Communication Escalation Matrix (Author: Kimberley Wellington nee` Morgan, 2024)

Issue Description	Priority	Owner	Escalation
Venues unavailable	High	Procurement Officer	Project Manager
No training report received	Medium	Project Manager	Steering Committee
No project status report received	High	Project Manager	Project Sponsor
Solar panels not delivered	High	Project Manager	Steering Committee

Note: Author's Own Work

4.6.3 Monitor Communications Management

The Project manager and Project Team will be responsible for monitoring the management of communication among stakeholders. The project manager will use the communications matrix as a guide to ensure the timely delivery of reports, meetings and other deliverables. The stakeholder listing associated with the communication matrix is subject to change as the project gets more in-depth.

If the need arises to change the communication mode, frequency or purpose, it must be made in writing and submitted through the change control form. Approval or Denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of one (1) week. If approval is granted, the communication management plan will be updated.

4.7 Quality Management Plan

The Project Management Institute (2017) states that the quality management plan describes how applicable, policies, procedures, and guidelines will be implemented to achieve the quality objectives. This plan is developed by the Project Manager and Project Team. It focuses on Plan Quality Management which outlines the key quality success factors and the metric and quality baseline. It also takes into consideration how quality is managed and controlled throughout the project.

4.7.1 Plan Quality Management

Plan Quality Management is the process of identifying quality requirements and/or standards for the projects and its deliverables and documenting how the project will demonstrate compliance with quality requirement and/or standards (Project Management Institute, 2017, p.277). The key quality success factors for the project have been identified and defined as represented in Table 20 below. This outlines what is needed to have a favourable outcome for the project. The quality baseline as presented in Table 21 was established to identify the standards to which the project must uphold. This is used especially as a guide for the monitoring of the project. These tools were developed with the use of expert judgment and meetings.

Table 20

Key Quality Success Factors (Author: Kimberley Wellington nee` Morgan, 2024)

Factor	Factor Definition
Solar Panel Installation	Solar Panels are securely installed and functional
Solar Panels	Solar panels meeting the quality standard of International Electro technical Commission (IEC 60904-1)
Training	Classroom and practical-based sessions aimed at increasing the participant's knowledge
Training Facilities	Location that has classroom type set-up located in close proximity to the communities
Qualified Trainers	Trainers will skill set and background in renewable energy
Certification	Certification provided by HEART NSTA/Trust which is recognized globally
Available Job Experience	Paid internship providing real-life experience based on areas of training

Note: Author's Own Work

Table 21

Quality Baseline (Author: Kimberley Wellington nee` Morgan, 2024)

Quality Objective	Metric	Metric definition	Expected outcome/result	Measurement frequency	Responsible
100% of Training Curriculum developed	Two (2) training curriculum developed- 100% One (1) training curriculum developed - 50%	Percentage of training curriculum developed for renewable energy and behaviour modification and solar photovoltaic (PV) installation	Training curriculum developed for renewable energy and behaviour modification and solar photovoltaic (PV) installation	Monthly review (prior to start of training)	Caribbean Maritime University Vector Institute Project Manager Steering Committee
80% of Participants trained in renewable energy and behaviour modification and solar photovoltaic (PV) installation	Measurement of: Participation >/= 80% Attendance >/= 95% Assignment completion >/=100%	Participants who have a minimum of 80% participation, 95% attendance and 100 % assignment completed are classified as trained in the modules	Increased knowledge in renewable energy and installation of solar panels	Once (end of training module)	Caribbean Maritime University Vector Institute Project Manager

Quality Objective	Metric	Metric definition	Expected outcome/result	Measurement frequency	Responsible
90% of participants receiving Certification	>/= 65% examination grade	Achieving an examination pass mark of 65% qualifies a participant to attain certification	Increased level of qualification and employability of youth	End of project	HEART NSTA Trust Steering Committee Project Manager
80% of residents having increased knowledge in renewable energy from sensitization sessions	30% increase in post-test evaluation	A minimum 30% increase in post-test evaluation	Increased awareness of the importance of renewable energy	Once at start of the project	Project Manager Steering Committee
80% of trainees aligned to internship	80% Acceptance of youth for internship	Acceptance letters received from companies aligned to the trainings	Increased opportunity for job experience and improved competence of youth	End of project	Project Manager Steering Committee

Quality Objective	Metric	Metric definition	Expected outcome/result	Measurement frequency	Responsible
100% of solar panel system suitable and functional	100% of solar panel system installed	10 kwh solar panel system installed complete with electric wiring and mounting	Reduction in energy cost by at least 50%	Monthly, after installation	Project Manager Project Steering Committee

Note: Author's Own Work

4.7.2 Manage Quality Management

The completion of the quality baseline and the implementation of the project triggers the management of quality throughout the project. This is developed by the project manager and project team. They utilize meetings and expert judgment to identify how the quality of the project will be managed and develop templates such as the Quality Activities Matrix (Table 22). Audits, document analysis, and checklists will be utilized to maintain the project's quality. The use of these tools and techniques will help to develop the quality assurance of the project, which is a preventative action to avert failures associated with quality. Various groups or individuals will be responsible for the management of quality as outlined below in Table 22.

Table 22

Quality Activities Matrix (Author: Kimberley Wellington nee` Morgan, 2024)

Deliverable	Requirement	Manage and Control activities	Frequency	Responsible
1. Final Report on sensitization sessions	Completion of sensitization sessions	**Manage:** Document analysis of attendance registers and content for sensitization sessions	Once	Project Manager Steering Committee
		Control: Use of checklist to analyse components associated with the content	Once	Project Manager Steering Committee
Overview of training modules	Selection of trainer	**Manage:** Document Analysis of Curriculum Vitae of potential trainers	Prior to trainings	Project Manager Project Steering Committee

Deliverable	Requirement	Manage and Control activities	Frequency	Responsible
		Control: Use of checklist to determine if criteria required matches what is presented on the curriculum vitae	Prior to trainings	Project Manager Project Steering Committee
Final Training Report	Completion of Training	**Manage:** Document analysis of attendance registers and content of trainings	Weekly (prior to start of training)	Project Manager Trainer
		Control: Evaluation of participants' experience and knowledge	Once	Project Manager Trainer

Deliverable	Requirement	Manage and Control activities	Frequency	Responsible
Certification of youth	Completion of training	**Manage:** Use of Checklist to determine if participants meet requirements for certification	Once (after completion of training)	HEART NSTA Trust
		Control: Survey of participants to assess their grades to determine certification requirements	Once (after completion of training)	HEART NSTA Trust
Installation of solar energy system	Site Visit of location	**Manage:** Use of checklist to determine the location's suitability	Once	Project Manager Steering Committee Solar Panel Expert

Deliverable	Requirement	Manage and Control activities	Frequency	Responsible
		Control: Inspection used to determine if solar energy system is being installed as stated	Once	Project Manager Steering Committee
Offer Letters to be engaged in internship	Trainees certified	**Manage:** Use of audits to determine if trainees are at the standard to be certified	Once (After trainings)	Project Manager Steering Committee
		Control: Surveys to evaluate trainings	Once (After trainings)	Project Manager Steering Committee

Note: Author's Own Work

4.7.3 Control Quality Management

Control quality is the process of monitoring and recording results of executing quality management activities to assess performance and ensure the project outputs are complete, and correct, and that they meet customer expectations (Project Management Institute, 2017, p. 295). As noted in Table 22, the quality will be controlled through the use of surveys, checklists, and inspections.

Surveys will be used to determine the level of satisfaction from the beneficiaries of the workshops and training. A template will be developed by the project team which will outline key questions to determine if the training and workshops would have met the intended objectives and quality.

Checklists will be used as quality control and will detail a list of criteria or specifications that are needed to meet the quality objectives. The checklists will be used by the responsible member who will compare what is listed on the checklist to what has been implemented.

Inspections are the examination of a work product to determine if it conforms to documented standards (Project Management Institute, 2017, p. 303). It will be used specifically to evaluate the installation of the solar energy system.

The Transforming Youth through Renewable Energy project will also utilize continuous quality improvement through the Plan-Check-Do-Act. Table 23 outlines how each process will be utilized.

Table 23

Plan-Check-Do-Act (Author: Kimberley Wellington nee` Morgan, 2024)

Process Description
1. Plan: This aspect is focused on problem identification. The project team will use tools and techniques such as brainstorming sessions and the use of cause-and-effect diagrams. From this further analysis will be done with the beneficiaries to identify the root cause of the problem. Subsequently, objectives will be developed to alleviate the problem.
2. Do: The identified objectives will be implemented as part of the continuous improvement plan.
3. Check: After the objectives are implemented, an analysis will be done to determine the overall impact and whether or not the objectives have been achieved. This could be facilitated through surveys and review sessions.
4. Act: After the analysis has been conducted, it would then be determined if the initiatives have worked. If they have not worked the process will then have to be repeated to allow for continuous improvement.

Note: Author's Own Work

Any request to adjust the quality management plan must be made in writing and submitted through the change control form (Appendix 5). Approval or Denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of two (2) weeks. If approval is granted, the plan will be updated. It is also very important once the execution of the project takes place that the lessons learned are captured by the project team using the lessons learned register (Appendix 6).

4.8 Risk Management Plan

The Risk Management Plan is developed by the project manager along with the project team. Within the plan, it outlines all possible challenges that may affect the development and implementation of the project to realize the project's objectives. It is important to plan, identify, analyze, and monitor risks. Most importantly, the team needs to define how it will respond to risks, should they occur. The plan identifies and details the use of various tools in the process, such as Risk Breakdown Structure, Probability and Impact Matrix, and Risk Register.

4.8.1 Plan Risk Management

To effectively decide how to tackle potential problems, a comprehensive risk assessment is conducted at the beginning of every project. It is important to anticipate the varying risks, their impact on the project and the measures for eradication. The project team will utilize the project charter and stakeholder register as inputs to this process. The key benefit of this process is that it ensures that the degree, type, and visibility of risk management are proportionate to both risks and the importance of the project to the organization and other stakeholders (Project Management Institute, 2017, p. 401).

4.8.2 Identify Risks

Identify Risks is the process of identifying individual project risks, as well as sources of overall project risks, and documenting their characteristics. This process is done throughout the lifecycle of the project as risks may occur at any point in the project. It is important to identify all risks, the cause of the risks, and the consequences that may befall the project.

The project team will use a series of inputs to aid in the identification process. These include, but are not limited to: Schedule, Cost, Resource and Quality Management Plans and also

the stakeholder register. In reviewing this information, the project team then utilizes meetings for brainstorming sessions and root cause analysis to identify the project risks. The first result of the identification process is the development of a Risk Breakdown Structure (RBS). This hierarchical structure classifies the risks at three levels from Level Zero (0) to Level Two (2). Level One (1) categorizes the risks into four main areas. These are:

1. Management Risks: This is focused on factors relating to how effective the leadership style has been on the project team and other key stakeholders.
2. Technical Risks: This relates to the possibility of any technological failures.
3. Commercial Risks: This relates to risks associated with the procurement process, primarily with the contract agreements and bidding process.
4. External Risks: These are risks which the project team has difficulty determining based on their nature. They are normally outside of the project team's jurisdiction, but will require the team to be flexible to combat them..

Table 24

Risk Breakdown Structure (Author: Kimberley Wellington nee` Morgan, 2024)

Level 0	Level 1	Level 2
Project Risks	1. Management	1.1 Human Resources
		1.2 Communication
	2. Technical	2.1 Equipment
		2.2 Scope
		2.3 Budget Estimates
	3. Commercial	3.1 Contracts

		3.2 Vendors and Suppliers
	4. External	4.1 Crime
		4.2 Attrition
		4.3 Youth Interest
		4.4 Natural Disasters
		4.5 External Resources

Note: Author's Own Work

After the risks are categorized using the RBS, the team develops a Risk Register which further identifies the risks, detailing their causes and the consequences to the project. It also details the probability of the occurrence of the risks and the impact on the project. It further classifies the trigger that would alert the owner of the risk and the planned response should the risks occur. Table 25 outlines the risk register for the Transforming Youth through Renewable Energy.

Table 25

Risk Register (Author: Kimberley Wellington nee` Morgan, 2024)

RBS Code	Cause	Risk	Consequence	Probability	Impact	PxI	Trigger	Potential Risk Response	Owner
1.1	Inexperienced project team	Inability to complete project activities in scheduled time frame	Delays in the project's scope, budget and schedule	2	5	10	Missed deadlines	**Mitigate:** Training with more experienced project members	Project Manager
1.2	Slow response to stakeholders	Delayed communication of project updates	Disengaged stakeholders, project delays and reputational damage	2	5	10	Lack of response after a 3 business days	**Mitigate** Revisit communication plan and enforce management and monitoring measures Apologize to stakeholders and reassure them of their importance	Project Manager

RBS Code	Cause	Risk	Consequence	Probability	Impact	PxI	Trigger	Potential Risk Response	Owner
								and timeline for updates	
2.1	Technology Failure of the solar energy system	The community centre reverting to fossil fuel electricity generation	Project objectives not being achieved	2	5	10	No change in electricity bill	**Mitigate:** Procure a reputable company whose products are verified by the Bureau of Standards of Jamaica	Project Manager
2.1	Shipping delays	Delays in the installation of the solar energy system	Delays in the project scope, cost, and schedule.	3	5	15	Missed arrival of equipment	**Avoid**: Ordering equipment in advance to avoid delays	Solar Panel Expert
2.2	Additional unapproved	Scope creep	Delays in the project's	3	5	15	Client requires change in scope after	**Mitigate**: Institute change control process	Project Manager

RBS Code	Cause	Risk	Consequence	Probability	Impact	PxI	Trigger	Potential Risk Response	Owner
	project requirements		scope, budget and schedule				scope baseline has been set	for every additional request	
2.3	Inaccurate calculations	Inaccurate Budget Estimates	Inaccurate Cost Baseline	1	5	5	Costs are 15% above expectation	**Mitigate**: Ensure use of software for calculations to prevent possible inaccuracies	Project Accountant
3.1	Poorly written contracts	Non-enforceable contract	Objectives not being achieved	1	5	5	Unreviewed contracts	**Mitigate:** Documented process for the creation and review of contracts	Legal Officer
3.2	Improper selection of vendors	Poor quality of goods or services	Impacts the overall quality objectives	1	5	5	Procurement process not followed	**Mitigate:** Selection of vendors will be conducted	Procurement Officer

RBS Code	Cause	Risk	Consequence	Probability	Impact	PxI	Trigger	Potential Risk Response	Owner
								through a committee	
4.1	The community is volatile	Criminals steal the solar equipment	Project objectives not being achieved	3	5	15	Increase in criminal activities	**Escalation:** Alert security authorities to patrol area	Project Sponsor
4.1	The high crime rate	Flare-ups of violence	Affect the youths ability to attend trainings	4	5	20	Increase in violence activities	**Mitigate:** Collaborate with police force to engage residence and provide transportation to youth	Project Manager
4.2	Youth pre-maturely leave the trainings	Competing opportunities	Delays in the project's scope and cost.	3	5	15	Lower attendance rate to trainings	**Mitigate:** Provide competitive stipend tied to completion of training	Project Manager

RBS Code	Cause	Risk	Consequence	Probability	Impact	PxI	Trigger	Potential Risk Response	Owner
4.3	Low Youth Interest	Low number of target beneficiaries recruited	Project unable to successfully foster youth development	3	5	15	Low recruitment numbers	**Mitigate:** Host Sensitization Sessions and use community members to recruit youth	Project Manager
4.4	Natural Disaster	Delay in the installation of the solar energy system	Delays in the project scope, cost, and schedule	3	5	15	Announcements from the Meteorological Unit and the Office of Disaster Preparedness and Emergency Management	**Transfer:** Risk will be passed on to the solar panel company	Solar Panel Company
4.5	Limited Resources within	Trained youth not being accommodated within	Scope not being achieved	2	4	8	Rejection Letters	**Mitigate:** Expand request for number of organizations to	Project Manager

RBS Code	Cause	Risk	Consequence	Probability	Impact	PxI	Trigger	Potential Risk Response	Owner
	internship organizations	internship organizations						provide internship	

Note: Author's Own Work

4.8.3 Risk Analysis

Following the identification of risks that may affect the project, an analysis of these risks has to be conducted. The analysis can be conducted using two methods which are quantitative analysis and or qualitative analysis. Quantitative risk analysis is the process of numerically analyzing the combined effect of identified individual project risks and other sources of uncertainty on overall project objectives (Project Management Institute, 2017, p. 428). It utilizes tools such as simulation, sensitivity analysis, and decision tree analysis to perform this type of risk analysis. Quantitative Risk Analysis usually requires specialized risk software and expertise in the development and interpretation of risk models (Project Management Institute, 2017, p.429).

Qualitative Risk Analysis assesses the priority of identified individual project risks using their probability of occurrence and the corresponding impact on project objectives if the risks occur and other factors (Project Management Institute, 2017, p.420). It utilizes tools and techniques such as risk probability and impact assessment and probability impact matrix. Based on the type of project as well as the team's expertise and availability of resources, the preferred choice of analysis is the qualitative risk analysis. The risk probability and impact assessment take into consideration the likelihood and effect of risk on the project. Risk Impact Assessment considers the potential effect on one or more project objectives such as schedule, cost, quality, or performance (Project Management Institute, 2017, p.423). Table 26 presents this information for the project.

Table 26

Risk Probability and Impact Assessment (Author: Kimberley Wellington nee` Morgan, 2024)

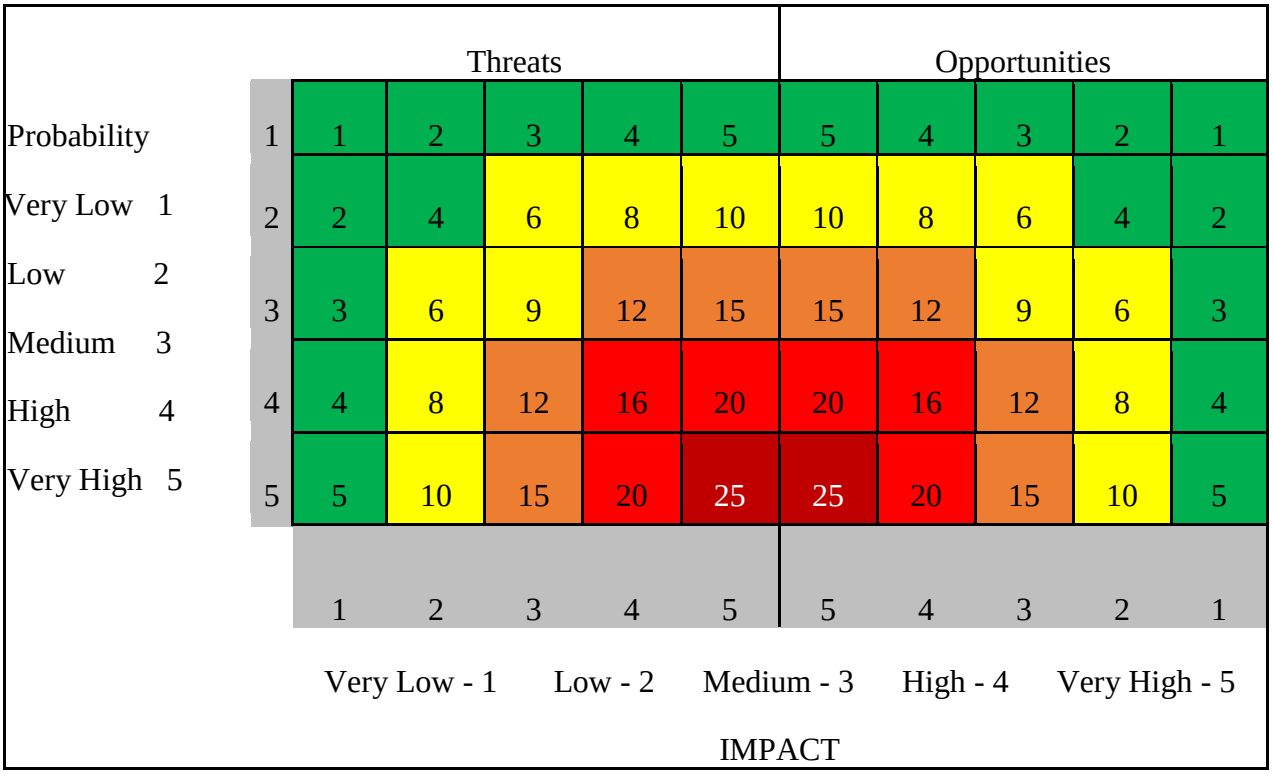
Probability Score	Scale	Probability	Impact			Impact Score
			Schedule	Cost	Scope	
1	Very Low	<1%	No change to the project's timeline	No change to the project's cost	No change to the project scope	1
2	Low	<10%	Schedule impacted by 1 week	Cost impacted by <3%	Minor changes to scope with minimal consequences	2
3	Medium	10% to <30%	Schedule impacted by 2 weeks	Cost impacted by 3 to <5%	Minor changes with medium consequences	3
4	High	30% to <50%	Schedule impacted by 3 weeks	Cost impacted by 5%	Major changes to the scope	4
5	Very High	>50%	Schedule impacted by over 3 weeks	Cost impacted by >5%	Project at risk of failure	5

Note: Author's Own Work

The probability and impact matrix is developed by the project team. The category for both probability and impact is ranked from one (1) to five (5), where 1 is the lowest and 5 is the highest. The selection of the ranking for the probability and the impact is determined by the project team based on their knowledge and expertise in addition to information deriving from previous projects. Figure 14 below presents a graphical representation of the matrix, and Table 27 shows the legend to help users to identify what the numbers and colours represent. The final results from the use of the matrix are documented in the Risk Register which is outlined in Table 25.

Figure 14

Probability x Impact Matrix (Author: Kimberley Wellington nee` Morgan, 2024)



Note: Author's Own Work

Table 27

Probability x Impact Matrix Legend (Author: Kimberley Wellington nee` Morgan, 2024)

Risk Legend	
Very Low	**1 to 5**
Low	**6 to 10**
Moderate	**11 to 15**
High	**16 to 20**
Very High	**21 to 25**

Note: Author's Own Work

4.8.4 Plan Risk Response

The completion of the analysis of the varying risks automatically leads to developing mitigation strategies.. Risks can be prioritized for further analysis and mitigation based on their probability and impacts (Project Management Institute, 2017, p.425). As identified by the risk register based on the responses, the project has fourteen (14) risks, which are classified under threats. The project does not present any opportunities. The classifications are as follows:

- Escalate: Escalation is appropriate when the project team or project sponsor agrees that a threat is outside the scope of the project or that the proposed response would exceed the project manager's authority (Project Management Institute, 2017, p.442).
- Avoid: Risk avoidance is when the project team acts to eliminate the threat or protect the project from its impact (Project Management Institute, 2017, p.443).

- Transfer: Transfer involves shifting ownership of a threat to a third party to manage the risk and to bear the impact if the threat occurs (Project Management Institute, 2017, p.443).
- Mitigate: In risk mitigation, action is taken to reduce the probability of occurrence and/or impact of a threat (Project Management Institute, 2017, p.443).
- Accept: Risk acceptance acknowledges the existence of a threat, but no proactive action is taken (Project Management Institute, 2017, p.443).

4.8.5 Implement Risk Response

Each risk is categorized based on the risk register through the probability and impact score. This leads to the prioritization of the risks. This means risks that are ranked in the high and very high categories will automatically take precedence over those that are categorized as low. Those risks that are ranked higher are treated with greater urgency as they have a higher chance of derailing the project. The owner of the risk takes primary responsibility for implementing the necessary actions and also monitor the risks to identify triggers that could initiate the risk.

4.8.6 Monitor Risks

Monitor Risks is the process of monitoring the implementation of agreed-upon risk response plans, tracking identified risks, identifying and analyzing new risks, and evaluating risk process effectiveness throughout the project (Project Management Institute, 2017, p.453). Monitoring of risks is a continuous process that is carried out throughout the project. The risk register serves as the main input for this process and is updated accordingly. The project

manager and team will control this process and will meet on a bi-weekly basis to provide updates on the viability of risks and the measures. This forms part of the team's status updates.

Any request to adjust the risk management plan must be made in writing and submitted through the change control form (Appendix 5). Approval or Denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of two (2) weeks. If approval is granted, the plan will be updated. It is also very important once the execution of the project takes place that the lessons learned are captured by the project team using the lessons learned register (Appendix 6).

4.9 Procurement Management Plan

Projects require the use of external goods and or services by vendors. To ensure this process is kept fair, procurement will be used to invite, identify and select vendors using a specified criteria. The development of the procurement management plan serves as a guide project manager and project team to increase efficiency and minimize risks to obtain goods and services needed for the implementation of the project. For this project's development, it takes into consideration the planning, conducting, and controlling of procurement management. The project will procure goods such as the solar energy system and services such as the trainers to aid in achieving the project's objectives.

4.9.1 Plan Procurement Management

Plan Procurement Management is the process of documenting project procurement decisions, specifying the approach and identifying potential sellers (Project Management Institute, 2017, p. 466). The project manager and procurement officer will be the responsible persons for the definition, management, and monitoring of the procurement process. The inputs

utilized for this process are the project charter, scope management plan, risk register, and stakeholder register. The information garnered from these documents are used in tandem with expert judgement, data analysis through source selection criteria, and meetings to determine how the plan will be executed.

4.9.2 Conduct Procurement Management

To initiate this process, the procurement officer, legal officer, and project manager will identify the procurement needs of the project through discussions held during meetings. To ascertain approval for the identification of these procurement needs, Table 28 provides an overview that outlines the needs along with the justification, which will also be used as a supporting document for the disbursement of funds.

Following this, the Scope of Work (SOW) and Terms of Reference (TOR) for the procurement of the following will be developed:

- Trainers
- Venue
- Town Crier
- Solar Energy System
- Decor
- Refreshments

The SOW and TOR will outline what the respective party should achieve and how it should be completed. They include the project's main objective along with the vendor's requirements, roles and responsibilities, and exclusions. Exclusions are used to avoid scope creep by detailing what the work does not include.

Table 28

Procurement Justification (Author: Kimberley Wellington nee` Morgan, 2024)

Procurement Need	Justification	Pre-Tender Estimate	Date of Invitation to Bid	No. of Bids Requested	No. of Bids Received
Trainer specialized in Renewable Energy	One trainer is required to conduct behaviour change workshops to increase the knowledge and improve the understanding of the impact of renewable energy on their environment.	$550,000.00	Feb 18, 2025	3	To be decided (TBD)
Trainer Specialized in Solar photovoltaic installation and Green Energy	One trainer is required to train 30 youth in Solar Energy Technologies and Green Energy Efficiency to increase their knowledge and improve their earning ability	$1,500,000.00	March 20, 2025	3	TBD
Venue for trainings	Appropriate venue is required with the right	$120,000.00	January 27, 2025	3	TBD

Procurement Need	Justification	Pre-Tender Estimate	Date of Invitation to Bid	No. of Bids Requested	No. of Bids Received
	capacity and amenities for the intended purpose				
Town Crier	Aids in the promotion of trainings and workshops to reach the target beneficiaries	$15,000.00	January 27, 2025	1	TBD
Solar Energy System and installation	10KW renewable energy (solar) system at the Trench Town Community Centre to reduce their energy cost by at least 50% to improve its sustainability.	3,200,000.00	June 11, 2025	3	TBD
Decor	Enhance the venue for the official close-out ceremony	150,000.00	July 8, 2025	3	TBD
Refreshments	Refreshment for the invited guests of the close-out ceremony	350,000.00	July 8, 2025	3	TBD

Note: Author's Own Work

The development of the Request for Quotation (RFQ) is executed by the procurement officer. The RFQ outlines the purpose of the goods or service the project wishes to procure, the technical specifications required and submissions requirement. The request for quotation will be done using two methods: the first method entails emailing three (3) main vendors and the second method will focus on single sourcing. This means that though the product or service is being provided by multiple vendors, the team will identify a single source based on the benefits to the project or their experience with working with the vendor. If the single source pre-tender estimate is above $1,000,000.00 JMD permission is required from the Director General of the PIOJ to proceed.

The project team led by the Procurement Officer will establish a Vendor Selection Criteria that will outline the qualities by which the submissions will be graded. The form will be developed based on the submission requirements to evaluate the vendor's quotation, experience, and reputation. Once the bidders have submitted their quotations, an analysis will be conducted by the Procurement Officer, Project Manager, Legal Officer, and Accounting Officer. In cases of the quotation being above JMD 1,000,000.00, this will be passed on to an internal procurement committee for approval following the initial evaluation. The identification of the vendor will be completed using evaluation based on the quality and cost. Due to the limited financial resources to complete the project, the vendor who proposes the best quality for the cost will be selected. Once the vendor has been selected, the legal officer has the responsibility to draft the contract. Fixed price contracts are the preferred contract type to be used in this project. It involves setting a fixed total price for a defined product, service or result to be provided (Project Management Institute, 2017, p.471). This is suitable when the type of work is

predictable and the requirements are well defined and not likely to change (Project Management Institute, 2017, p.476).

4.9.3 Control Procurement Management

Control Procurements is the process of managing procurement relationships; monitoring contract performance, making changes and corrections as appropriate and closing out contracts (Project Management Institute, 2017, p. 492). The finalization of a contract triggers the procurement officer and project manager to begin the monitoring process. They will be responsible for ensuring that the work as stipulated by the contract is conducted on time and in good quality.

The close-out of the contract will be determined by the project manager and procurement officer. This will be noted by the contract end date and the deliverables met. An email with an official letter outlining the end of the contract will be sent to the vendors once the contract has ended. An evaluation will be conducted for all vendors of the project to assess their competence in achieving the contract's deliverables. This evaluation will detail a scoring from one (1) - Very Poor to five (5) - Excellent. This evaluation rates their performance based on the criteria provided. The final evaluation will be submitted to be entered into an internal procurement repository to be used by future projects. Figure 13 presents the template that will be used. If the contract is rated satisfactorily, this will trigger the issue of payments to be made.

Figure 15

Evaluation of Vendors (Author: Kimberley Wellington nee` Morgan, 2024)

Date:		
Evaluator's Name:		
Contractor's Name:		
Contractor's Address:		
Details	**Rating**	**Comments**
Conduct of staff		
Customer relations		
Quality of goods and/or services		
Responsiveness of management		
Adherence to delivery timeline		
Average Score over 5		
Rating system: Ø *Excellent = 5* Ø *Good = 4* Ø *Average = 3* Ø *Poor = 2* Ø *Very Poor = 1*		
Evaluator's Signature: **Date:**		

Note: Adapted from PIOJ's Procurement Unit

If the need arises to change any aspect of the contract, for example an extension of the contract end date, the request must be made in writing and addressed to the project manager. The project manager will present this request to the steering committee after which, approval or denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of one (1) week. If approval is granted, an amendment will be made to the contract. It is also very important once the execution of the project takes place that the lessons learned are captured by the project team using the lessons learned register (Appendix 6).

4.10 Resource Management Plan

The resource management plan is focused on the identification, management, and control of human and physical resources. Human resources have specific roles and responsibilities as outlined in Table 29. These are linked to the scope of the project to ensure all activities aligned to the project's success are achieved. The human resources are responsible for executing the project's work. As they are so critical to the project's success, proper management is needed to address factors such as performance and conflict. The physical resources on the other hand are the equipment or materials used to achieve the project objectives. These are identified in Table 30 and outline the quantity of each resource needed and also the person responsible for acquiring these resources.

Table 29

Team's Roles and Responsibilities (Author: Kimberley Wellington nee` Morgan, 2024)

Roles	**Responsibilities**
Project Sponsor	Provision of funds to finance project Provide approval for budgetary items Provide approval for change control request
Project Manager	Sensitize stakeholders regarding project Manage and monitor the project's scope, cost, schedule and quality Manage project team Provide project status updates to steering committee and project sponsor Provide reports to the steering committee for approval Provide approval for change control request Approve procurement
Steering Committee	Provides oversight to the project Approves training reports

Roles	**Responsibilities**
	Approves or denies change request
Procurement Officer	Draft request for quotation Reviews quotation Approve procurement
Accounting Officer	Review quotation Makes payment for all completed work Draft and complete expenditure reports
Legal Officer	Draft and finalize memorandum of understanding Draft and finalize contracts
Project Coordinator	Coordinates site visits Assists with recruitment process Stakeholder liaison Assist with schedule, scope and cost management
Project Assistant	Schedule management - tracking deadlines Meeting management - scheduling, prepare agenda and minutes Draft and complete expenditure reports
Trainers	Develop training outline Execute evalutions (Pre and Post Test) Execute training activities
HEART NSTA/Trust	Provide certification to trainees in solar photovoltaic installation
Solar Energy Expert	Install 10KW solar energy system Conduct walk-through Ensure everything is passed by the Bureau of Standards, Jamaica
Trench Town Community Development Committee	Promote the project throughout the community Recruit youth for trainings

Note: Author's Own Work

The physical resources for the project have been outlined in table 30 below.

Table 30

Physical Resources (Author: Kimberley Wellington nee` Morgan, 2024)

Physical Resources	**Quantity**	**Responsible Person**
Solar panel energy system	1	Solar Energy Expert
LED bulbs	15	Solar Energy Expert
Venue	3	Project Manager

Note: Author's Own Work

Team resources are assigned to the different work packages once they have been identified. This is done by using a Responsibility Assignment Matrix (RAM). The category of RAM used is the RACI Matrix. This matrix classifies each team resource based on their level of responsibility, accountability, consulting, or the need for them to be informed as it relates to the specific work package. Table 31 outlines this for the Transforming Youth through Renewable Energy project. The definitions of the letters used in the table are as follows:

- Responsible (R) - Individual whose role is to complete the work.
- Accountable (A) - An individual whose role is to create checks and balances to ensure the work is completed.
- Consult (C) - Individuals whose expertise is needed to complete the work.
- Inform (I) - An individual who should be kept informed of the progress and completion of the work.

Table 31

Responsibility Assignment Matrix (Author: Kimberley Wellington nee` Morgan, 2024)

	Project Initiation	**Sensitization**	**Recruitment**	**Behaviour Modification Workshop**	**Training**	**Solar Energy System Installation**	**Internship**	**Close-out Ceremony**
Project Sponsor	**C**	**I**	**I**	**I**	**I**	**I**	**I**	**C**
Project Manager	**R, A**	**R, A**	**R, A**	**A**	**A**	**A, C**	**R**	**R, A**
Steering Committee	**R**	**C**	**I**	**I**	**I**	**C**	**R**	**R**
Procurement Officer				**I**	**I**	**I**		**I**
Accounting Officer				**I**	**I**	**I**		**I**
Legal Officer	**C**				**I**	**I**		
Project Coordinator	**A**	**R**	**R**	**I**	**I**	**I**	**R**	**R**
Project Assistant	**A**	**R**	**R**	**I**	**I**	**I**	**R**	**R**
Trainers			**I**	**R**	**R**			**I**
HEART NSTA/ Trust	**I**			**C**	**C**		**C**	**I**
Solar Energy Expert						**R**		
Trench	**I**	**I, C**	**R**	**I**	**I**	**C**	**I**	**I**

	Project Initiation	**Sensitization**	**Recruitment**	**Behaviour Modification Workshop**	**Training**	**Solar Energy System Installation**	**Internship**	**Close-out Ceremony**
Town Community Development Committee								

Note: Author's Own Work

4.10.1 Resource Acquisition

Acquire resources is the process of obtaining team members, facilities, equipment, materials, supplies and other resources necessary to complete project work (Project Management Institute, 2017, p. 328). The resources for the Transforming Youth through Renewable Energy project are classified into two categories: human and physical. The project manager, project coordinator and project assistant will be acquired through the internal hiring process of the PIOJ as contractual workers. They will be selected based on their experience and knowledge. The procurement officer, legal officer, and accounting officer are full time employees of the PIOJ. They will be partially assigned to the project and be given an added bonus for their work on the project. The Steering Committee will consist of internal and external persons. The external persons will be formally invited to sit on the committee based on their experience and knowledge on key components of the project. The trainers and solar panel expert will be acquired through the procurement process through the use of a competitive bidding process and a selection made based on the cost and quality. The physical resources such

as, the venue and solar panel system will be acquired also through competitive bidding using the procurement process.

4.10.2 Develop Team

After identifying and acquiring the human resources required to compose the project team, the development of this team is critical to the project's success. This process will focus on creating a cohesive team that is focused on collaboration, effective communication, and meeting the project's objectives promptly. The strategies to be utilized include:

- Establishment of clear objectives: These objectives will be tailored to the roles and responsibilities of each team member. This will help each individual to have a deeper understanding of what is to be achieved and how they contribute to the overall development of the project.
- Provision of growth opportunities: Four trainings will be curated for the project team aimed at skills and tool development. These include effective project reporting, team communication, certification in Microsoft Projects, and strategic planning.
- Provision of feedback and support: Constant and clear communication will be exercised with the project team to reduce any misunderstandings. Constructive feedback will be given to help the team improve. An open-door policy will be introduced to create a safe, comfortable, and trustworthy method of communicating between the project manager and project team.
- Manage conflict: It is known that conflicts will arise within project teams, however, how they are handled determines the extent of issues that it may cause. Conflicts will be dealt with in a professional and timely manner with a focus on resolution.

- Team building: These activities will be throughout the project during meetings and social events.
- Celebrate successes and reward achievements: This will be focused on celebrating the project's milestones as a team. Public acknowledgment of team members who are excelling will be utilized. The team will also be rewarded at the end of the project at the project's close-out ceremony.

These strategies will help to build a team that will operate optimally to advance good work and overcome challenges to achieve the project's objectives.

4.10.3 Manage Team

This is the process of tracking team member performance, providing feedback, resolving issues and managing team changes to optimize project performance (Project Management Institute, 2017, p. 345). The project manager will be responsible for conducting assessments of the project team's performance. Informal assessments will be done monthly at the status update meetings. Formal assessment will be conducted three times throughout the eleven (11) months of the project. The formal assessment will be conducted using a grading scheme from one (1) being the lowest to five (5) being the highest. It takes into account an assessment based on conduct, competency, and skills aligned to their roles and responsibilities. This total is averaged, and team members are required to have at least sixty percent (60%) to continue as part of the team or to receive full payment. In the informal assessment, this is determined by the level of completion of the deliverables assigned to each team member. Both methods are conducted fairly and without bias. These assessments allow the project manager to provide feedback on the performance of the team members and how they can make improvements and provide the opportunity for growth and development.

When conflicts arise in the project, the project manager has the main responsibility of managing the team and maintaining trust among team members. The project manager will identify one (1) of the five (5) techniques:

Avoid

Accommodate

Compromise

Force

Collaborate

If a change should occur with the team. the project manager will notify the steering committee and project sponsors. Documentation is paramount within the project, and all team members are required to ensure the flawless handover of documents and processes should there be a change in the team's resources.

4.10.4 Control Resources

If the need arises to change any of the physical resources, the request must be made in writing and addressed to the project manager. The project manager will present this request to the steering committee after which approval or denial of any changes will be given through the steering committee on behalf of the project sponsors. This process will last a maximum time of one (1) week. If approval is granted, an amendment will be made to the contract. Another aspect is the monitoring of physical resources. This involves ensuring that the resource is acquired by the agreed timeline and that it is used or installed as outlined. It is also very important once the execution of the project takes place that the lessons learned are captured by the project team using the lessons learned register (Appendix 6).

5 CONCLUSION

1. The integration management plan outlines a roadmap of all key areas developed in the plan. The Project Charter was used to show the linkages among all areas. This was created for the Transforming Youth through Renewable Energy project and provides a high-level summarized version of the project. This abridgment of the project provides readers with relevant information that pertains to the chronological procedures and requirements necessary for the successful preparation, execution, and culmination of the project. It presents information on the objectives, milestones, risks, assumptions, and budget among other requisites for an efficient and successful project. The project also includes a signed project charter which authorizes the start of the project. This charter provides a more detailed submission rather than a project proposal which would traditionally be used. It also creates a greater chance of approval by the internal stakeholders.
2. The project's Scope Management Plan details all the work that is to be accomplished to achieve the project's objectives. It identifies the needs of the project, the technical and functional requirements that are required to address those needs, as well as the means of verification to determine that the work will be executed as outlined. This management plan includes the scope statement which details the project's scope, including a clear description, deliverables, acceptance criteria, constraints, and assumptions. It also includes the Work Breakdown Structure (WBS), which graphically represents the project's work packages and a dictionary that defines the entire WBS to reduce any aspects of miscommunication on the work to be completed. The use of this plan will help to keep the team on track to achieving its deliverables. This plan aims to prevent

past issues of scope creep from reoccurring and to keep the team focused on achieving the project's deliverables.

3. The Schedule Management Plan is the project's roadmap in detailing the timeline for each activity and ultimately determining the overall project duration. This plan serves as the baseline for tracking progress and identifying any deviations. Activities are derived by breaking down the work packages from the WBS into smaller, more manageable tasks. Microsoft Project will be the primary tool for creating and managing this schedule. Incorporating this tool will allow the organization to have a clear deadline setting and keep the project on track. It will also help to manage resources effectively with the avoidance or mitigation of potential risks.
4. Similar to the Schedule Management Plan, the Cost Management Plan tracks project activities. A detailed budget is created, assigning a cost to each activity. This goes beyond the high-level estimates typically used in project proposals. The plan incorporates two types of reserves: contingency and management. The contingency reserve typically included addresses unforeseen risks. The management reserve, however, is an additional buffer for anticipated but not yet defined needs, thus enhancing the project's preparedness. This is not normally incorporated but will help to alleviate unknown risks to eliminate cost overrun. Cost performance will be monitored through cost variance analysis, inspections, and expenditure reports. These tools will help identify whether or not the project is on a budget or exceeding expectations.
5. The Stakeholder Management Plan proactively identifies individuals and groups who may be impacted by the project, either positively or negatively. These stakeholders are

then categorized based on their level of influence and power over the project's implementation. This classification informs the strategy for managing and engaging with each stakeholder group.

6. The Communication Plan complements the Stakeholder Management Plan by ensuring clear and consistent messaging. It proactively addresses potential misunderstandings by defining communication methods, frequency, and purpose for each stakeholder group. This transparency empowers the team to plan effectively for the implementation, and monitoring of the project's communication. An escalation matrix outlines the process for resolving communication issues, thereby guaranteeing timely intervention.
7. The Quality Management Plan establishes the criteria for acceptable project deliverables. It identifies and defines key quality success factors consequently forming the quality baseline. This baseline details quality objectives, metrics, expected results, measurement frequency, and ownership for achieving quality. To prevent quality issues, the plan outlines quality control activities in a Quality Activities Matrix. Surveys, inspections, and checklists will be used to monitor and ensure quality. Furthermore, the plan incorporates continuous improvement through the Plan-Do-Check-Act (PDCA) process.
8. The Risk Management Plan Proactively identifies potential challenges that could derail the project objectives. A Risk Breakdown Structure (RBS) is employed to categorize and classify these risks. For each identified risk, the plan determines the root cause and potential consequences. A qualitative analysis assesses the likelihood and impact of each risk, aiding in the assignment of risk ownership and the development of mitigation strategies.

9. The Procurement Management Plan establishes a transparent process for selecting and contracting goods or services that meet project objectives. A Procurement Justification Matrix details the rationale behind each purchase, including the purpose and pre-tender estimates. For monitoring purposes, the plan tracks key milestones such as invitation to bid date and number of bids requested and received. To ensure quality and build a reliable vendor pool, a performance-based evaluation will assess each vendor's service delivery. This evaluation determines their inclusion in the approved service provider database.
10. The Resource Management Plan comprehensively identifies and details all resources required for the project, including both human resources and physical resources. The plan clearly outlines the roles and responsibilities of each team member. To ensure clear accountability, a Responsibility Assignment Matrix (RAM) is used to define whether a resource is Responsible (performs the work), Accountable (holds ultimate ownership), Consulted (provides input), or Informed (kept up-to-date). Furthermore, the plan acknowledges the importance of team dynamics by addressing team building and conflict management strategies.
11. This project, designed to empower youth development through renewable energy in their community space, embraces principles of both regenerative and sustainable development. It goes beyond simply reducing environmental impact by incorporating these elements. For instance, procurement prioritizes vendors who demonstrate strong corporate social responsibility practices and deliver high-quality products. Additionally, the solar energy system selected will meet quality standards, thus ensuring long-term functionality and minimal environmental impact.

6 RECOMMENDATIONS

1. The PIOJ's CRP should continue to implement the Project Management Institute's definition of a project management plan and also institute its best practices and methodology for future projects.
2. The project manager should revert to the scope baseline when stakeholders ask for additional works to be completed. The scope should be clearly communicated to these stakeholders to prevent scope creep. These can be presented as stakeholder meetings which can allow for questions and answers for further clarification.
3. The PIOJ's CRP should ensure they create detailed cost estimates, rather than high-level estimates to create a more efficient level of budget tracking. Also, in the creation of budgets for new projects, the PIOJ should always include a percentage for the management reserve to factor in unknown risks that may occur.
4. The project manager should be very targeted in his/her sensitization to the community. The engagement should be concise, clear, informative, and suit the target audience to ensure stakeholder buy-in.
5. The PIOJ's CRP should integrate the following tools/templates: WBS, WBS Dictionary, Microsoft Projects, Scope Statement, Stakeholder Register, Risk Register, Quality Activities Matrix and Procurement Justification Matrix to ensure greater efficiency in monitoring and controlling the project's activities.
6. The project manager should ensure proper research is conducted to identify vendors or service providers. The selection process should be fair and transparent and should include the use of a small committee and a template for grading. Ethical sourcing should

also be incorporated to ensure alignment of sustainable development based on the company's values.

7. The PIOJ's CRP should incorporate a quality baseline for future projects to ensure the deliverables of these projects meet the acceptable standards.
8. The project manager should encourage the proactive identification of risks. The use of the risk breakdown structure and qualitative analysis should also be incorporated for future projects.
9. Post-project, the PIOJ's CRP Monitoring and Evaluation Specialist should carry out an evaluation to determine if the youth are gainfully employed and if the community centre has positively been impacted by the project.
10. The PIOJ's CRP should train all team members in project management to create an equal level of knowledge and understanding among the staff to ensure the project management practices are upheld.
11. The PIOJ's CRP should create a lessons learned database for projects that have been completed so that staff members have access to consult for future projects.

7 VALIDATION OF THE FGP IN THE FIELD OF REGENERATIVE AND SUSTAINABLE DEVELOPMENT

With innovation, technology, and the revolutionization of industries, the human population has become selfish with its motives and has neglected the overall health of the planet. However, through the awareness and integration of elements of regenerative and sustainable development there has been a reduction in these negative practices. This project aimed at fostering youth development through the integration of renewable energy has elements of both regenerative and sustainable development.

To understand regenerative development it can be best explained that:

> Regenerative approaches seek not only to reverse the degeneration of the earth's natural systems, but also to design human systems that can co-evolve with natural systems—evolve in a way that generates mutual benefits and greater overall expression of life and resilience (Mang et. tal, 2020 p.3).

Regenerative Development covers six principles, namely: ecologically, socially, economically, culturally, politically, and spiritually. Table 33 below compares the regenerative principles to the project and shares whether or not the principles are aligned.

Table 32

Regenerative Principles and its Alignment to the Project (Source: Author, Kimberley Wellington nee` Morgan)

Regenerative Principles	Alignment	Analysis
1. Ecological Regeneration of functional landscapes, where we produce and conserve, maximizing ecosystem function(Müller, 2017, p.1)	Aligned	The ecosystem approach (EA) is defined as "a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way" (Müller, 2017, p.16) . The project is in alignment with this principle. It promotes conservation and sustainable use through the integration of renewable energy, more specifically, harvesting the use of solar energy. This results in the reduction of the use of fossil fuels which lowers the release of green house gases and air pollution which in turn has a positive impact on the climate. It also reduces the dependence on water for the generation of electricity. Solar panels don't use any water to generate electricity, they don't release harmful gases into the environment, and the source of their energy is abundant and, best of all, free ("Here are the top 5 advantages of solar energy on the environment," n.d.).
2. Social Social strengthening by community organization and development, to cope	Aligned	In the application of social regeneration, the main goal is to empower local communities in a way that

with adaptation to climate change and reduce sumptuous consumption patterns (Müller, 2017, p.1)		they assume their own development instead of waiting for outside forces to do so (Müller, 2017, p.19). Through this project, the community will be empowered through the hands on approach of the integration of renewable energy. This will solidify stakeholder buy-in which will help to improve adaptation to climate change which will help them think more consciously as it relates to their electricity consumption.
3. Economical A new paradigm for economic development where people matter more than markets and money, measured according to the well-being of humans and all life forms (Müller, 2017, p.1)	Aligned	This project will reduce a community's space dependence on the electrical grid. As this is a vulnerable community, the cost saving from the implementation of this project will help to push more resources towards their own community development to better alleviate the challenges that they face.
4. Culture conservation and valuation of living culture which is the necessary bond for community life, where local knowledge, values and traditions are shared within family, friends and the community as a whole (Müller, 2017, p.1).	Aligned	This project utilizes youth within a vulnerable community to upgrade a communal community space. Through this project it will integrate the youth and community leaders, this will help to foster a relationship between the two groups where knowledge and traditions can be shared.
5. Political	Aligned	The Government of Jamaica

Rethinking and redesigning current political structures so they reflect true participatory democracy without the influence of money and power and especially fostering long term vision and actions that seek increased livelihoods and happiness and not only gross income (Müller, 2017, p.1).		has sought to push for more inclusion of renewable energy policies , with the hope of have 50% of the population integrated by 2030. Along with the positive impact on the country's environment, it will also facilitate job creation. This project is in alignment with the Government's objectives.
6. Spiritual Fostering deep spiritual and value structures based on ethics, transparency and global well-being to allow humanity to live in peace with itself and Mother Earth (Müller, 2017, p.1).	Partially Aligned	The country of Jamaica is very spiritually based with majority of the country upholding Christian beliefs. This is also ingrained into our constitutions, values and beliefs system. The project, however does not necessary have a spiritual aspect towards it, but can help to increase ethics through persons reducing electricity theft, which is a big issue especially in communities such as these.

Note: Author's Own Work

Sustainability requires change, and change is almost always delivered through projects (Carboni et al., 2018, p.21). The relation to sustainability for this project is its alignment to the Sustainability Development Goals (SDGs). The SDGs are an agenda to advance People, Planet, Prosperity, Peace and Partnership (5Ps) (Vision 2030 Jamaica, 2021, Sustainability Development Goals Section). There are 17 SDGs that are aimed at improving the state of the earth and the lives of all who inhabit it. Out of the 17 SDGs, six (6) SDGs are directly aligned to the project. Below illustrates the alignment of these SDG Goals to the elements of the project.

Table 33

Sustainable Development Goals and its Alignment to the Project (Source: Author, Kimberley Wellington nee` Morgan)

Sustainable Development Goal	Analysis
1. Goal # 1- No Poverty	The project is aligned to SDG # 1 as it seeks to lower the contributing factors to poverty. It seeks to empower youth by equipping them with the skills to seek employment in a field that is economically viable to increase their earning potential.
2. Goal #4 - Quality Education	The project is aligned to SDG # 4 as it serves to increase the knowledge and skill set of the youth within the specified community through training
3. Goal #6 - Clean Water and Sanitation	The project is aligned to SDG # 6 as based on the use of renewable energy, more specifically, solar energy, it reduces the dependence of water to power electricity. No water is used in the generation of solar energy which helps in lowering its usage and consumption. It also would help in providing water to areas that have low or no supply.
4. Goal #7 - Affordable and Clean Energy	The project is aligned to SDG # 7 as the utilization of solar energy to provide electricity results in the reduction of the use of fossil fuels which lowers the release of green house gases and air pollution which in turn has a positive impact on the climate.
5. Goal #8 - Decent Work and Economic Growth	The project is aligned to SDG # 8 as it increases access to employment through equipping youth with the requisite skills to seek employment in a field that is economically viable to increase their earning potential. This then allows them to contribute to the economic growth of the country.
6. Goal # 13 - Climate Action	The project is aligned to SDG # 13 as it links with the use of renewable energy, as well as creating awareness and a mindset change to create positive climate action.

Note: Author's Own Work

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APPENDICES

Appendix 1: FGP Charter

CHARTER OF THE PROPOSED
FINAL GRADUATION PROJECT (FGP)

1. Student name

KIMBERLEY ALICIA-VANESSA WELLINGTON nee` MORGAN

2. FGP name

A PROJECT MANAGEMENT PLAN TO FOSTER YOUTH DEVELOPMENT THROUGH THE INTEGRATION OF RENEWABLE ENERGY IN THE COMMUNITY CENTRE OF TRENCH TOWN, JAMAICA

3. Application Area (Sector or activity)

Climate Change Adaptation/ Socio-Economic Development/ Youth Development

4. Student signature

5. Name of the Graduation Seminar facilitator

Carlos Brenes Mena

6. Signature of the facilitator

7. Date of charter approval

February 25, 2024

8. Project start and finish date

January 8, 2024	July 19, 2024

9. Research question

What elements are needed to create a Project Management Plan to foster youth development through the integration of renewable energy in the community centre of Trench Town, Jamaica?

10. Research hypothesis

The development and use of a project management plan increases the successful integration of renewable energy within the community of Trench Town, Jamaica to positively impact youth

11. General objective

To develop a Project Management Plan in keeping with the standards associated with the Project Management Institute to foster youth development through the integration of renewable energy in the community centre of Trench Town, Jamaica

12. Specific objectives

12. To create a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager
13. To develop a Scope Management Plan to identify and document all work that would render the project complete
14. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored and controlled to facilitate the timely completion of the project
15. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.
16. To design a Stakeholder Management Plan to identify all individuals, groups or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle
17. To design a Communications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed
18. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project
19. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored
20. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project

21. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed and controlled throughout the project.
22. To include regenerative and sustainability practices in project activities to create positive impacts in the environment

13. FGP purpose or justification

The Planning Institute of Jamaica's Community Renewal Programme, though not an implementing entity has the main role for coordination of social projects within vulnerable spaces. In the development of these social projects, the use of the Project Management Institute's (PMI's) definition of a Project Management Plan is rarely used, this often has resulted in scope creep, cost overruns, and schedule delays.

The purpose of this Final Graduation Project is to develop a Project Management Plan for the Planning Institue of Jamaica's Community Renewal Programme. The project is aimed at fostering youth development through the integration of renewable energy. With an estimated 23% of Jamaicans living in poverty we must partner with young people to tackle climate change through advocacy collaborations and emerging jobs and employment opportunities to bolster mitigation efforts ("Prepare youth for a climate-resilient, poverty-free future," 2023). Projects of this nature are aligned to help achieve Jamaica's National Vision 2030 Development Goals.

Developing and utilizing a Project Management Plan will help formalize the implementation process to increase the project's overall chance for success. According to Rushton, 2023 organizations that use project management practices consistently have a 92% success rate in meeting project objectives. The development of this project management plan helps to set a precedent for future projects to come. It will help to document lessons learned and best practices which can be further integrated. This will also help to formalize the organization's processes on how it deals with projects and also improve the challenges faced as mentioned above.

14. Work Breakdown Structure (WBS). In table form, describing the main deliverable as well as secondary, products or services to be created by the FGP.

0. Final Graduation Project
    1. Graduation Seminar
        1.1 Final Graduation Project Deliverables
            1.1.1 Charter
            1.1.2 Work Breakdown Structure
            1.1.3 Chapter 1 - Introduction
            1.1.4 Chapter 2 - Theoretical framework
            1.1.5 Chapter 3 - Methodological framework
            1.1.6 Chapter 7 - Project Validation in Regenerative and Sustainable Development
            1.1.7 Annexes
                1.1.7.1 Schedule
                1.1.7.2 Bibliography
        1.2 Graduation Seminar Approval
    2. Tutoring Process
        2.1 Tutor
            2.1.1 Tutor Assignment
            2.1.2 Communication with Tutor
        2.2 Adjustments of Previous Chapters (if needed)
        2.3 Chapter 4 - Development (Results)
            2.3.1 Project Charter
            2.3.2 Scope Management Plan
            2.3.3 Schedule Management Plan
            2.3.4 Cost Management Plan
            2.3.5 Stakeholder Management Plan
            2.3.6 Communication Management Plan
            2.3.7 Quality Management Plan
            2.3.8 Risk Management Plan
            2.3.9 Procurement Management Plan
            2.3.10 Resource Management Plan
        2.4 Chapter 5 - Conclusion
        2.5 Chapter 6 - Recommendations
    3.Reading by Reviewers
        3.1 Reviewers Assignment Request
            3.1.1 Assignment of two reviewers
            3.1.2 Communication with reviewers
            3.1.3 Final Graduation Project Submission to Reviewers
        3.2 Reviewers Work
            3.2.1 Reviewer 1
                3.2.1.1 Final Graduation Project Reading
                3.2.1.2 Reader 1 Report
            3.2.2 Reviewer 2

3.2.2.1 Final Graduation Project Reading
3.2.2.2 Reader 2 Report
4. Adjustments
4.1 Report for Reviewers
4.2 Final Graduation Project Update
4.3 Second Review by Reviewers
5. Presentation to Board of Examiners
5.1 Final Review by Board
5.2 Final Graduation Project Grade Report

15. FGP budget

The Final Graduation Project Budget is estimated at a total of: $ 211,950.00 JMD or 1,358.65 USD

The breakdown is detailed below:

Tasks	Unit	Unit Cost	Total Cost
1. Printing	1	$7,500.00	$7,500
2. Perfect Binding	1	$21,000.00	$21,000.00
0. Postal and Shipping Fees	1	$15,000.00	$15,000.00
0. In-person interviews	2	$2,500.00	$5,000
0. Philologist - Proof Reading	1	$15,000.00	$15,000.00
0. Internet	19 weeks (7 seminar + 12 FGP)	$2,200.00	$2,200.00
0. Electricity	19 weeks (7 seminar + 12 FGP)	$3,750.00	$71,250
0. Laptop	1	$75,000.00	$75,000
		Grand Total	$211,950 JMD

16. FGP planning and development assumptions

1. The Project Management Plan will be completed and submitted to the UCI by the requisite time outlined.
2. All information required to complete the Project Management Plan will be available without restriction.
3. Monies will be available to action the items outlined in the budget.
4. The assigned tutor will provide the necessary review and guidance to facilitate the completion of the Final Graduation Project.
5. Researcher will meet the requirements to complete and successfully pass the Final Graduation Project.

17. FGP constraints

1. Time: The finalized Final Graduation Project has to be completed in the timespan of twelve (12) weeks.
2. Cost: Exorbitant inflation rates might drastically increase the budgeted amount for completion.
3. Scope: Information to assist the project is not located in one central location.
4. Quality: Limited feedback from tutors which is needed to refine the deliverables.

18. FGP development risks

1. Researcher may have difficulty meeting deadlines due to work obligations which would delay submissions and reduce the quality of work produced.
2. The researcher's location is susceptible to several natural disasters, such as hurricanes, floods and earthquakes which can disrupt internet connectivity and electricity which would impact the time required to achieve the deliverables.
3. Technical difficulties may occur on the UCI portal which could impact the researcher's ability to upload their deliverables to meet the submission deadline.
4. The researcher may face difficulties to secure interviews to attain relevant information this would impact the quality of work produced and delay submission.

19. FGP main milestones

Deliverable	Finish estimated date
1.1.1 Charter	February 25, 2024
1.1.2 Work Breakdown Structure	January 21, 2024
1.1.3 Chapter 1 - Introduction	February 18, 2024
1.1.4 Chapter 2 - Theoretical Framework	February 4, 2024
1.1.5 Chapter 3 - Methodological Framework	February 11, 2024
1.1.6 Chapter 7 - Project Validation in Regenerative and Sustainable Development	February 18, 2024
1.1.7 Annexes	February 25, 2024
1.2 Graduation Seminar Approval	February 29, 2024
2.1.1 Tutor Assignment	March 4, 2024
2.1.1 Communication with Tutor	March 6, 2024
2.2 Adjustments of Previous Chapters (if needed)	March 10, 2024
2.3.1 Project Charter	March 17, 2024
2.3.2 Scope Management Plan	March 24, 2024
2.3.3 Schedule Management Plan	March 31, 2024
2.3.4 Cost Management Plan	April 7, 2024
2.3.5 Stakeholder Management Plan	April 14, 2024
2.3.6 Communication Management Plan	April 21, 2024
2.3.7 Quality Management Plan	April 28, 2024
2.3.8 Risk Management Plan	May 5, 2024
2.3.9 Procurement Management Plan	May 12, 2024
2.3.10 Resource Management Plan	May 19, 2024
2.4 Chapter 5 - Conclusion	May 26, 2024
2.5 Chapter 6 - Recommendations	June 2, 2024
3.1 Reviewers Assignment Request	June 7, 2024
3.1.1 Assignment of two reviewers	June 4, 2024
3.1.2 Communication with reviewers	June 6, 2024
3.1.3 Final Graduation Project Submission to Reviewers	June 7, 2024
3.2 Reviewers Work	June 21, 2024
3.2.1 Reviewer 1	June 21, 2024
3.2.2 Reviewer 2	June 21, 2024
4.1 Report for Reviewers	June 28, 2024
4.2 Final Graduation Project Update	July 1, 2024
4.3 Second Review by Reviewers	July 12, 2024
5.1 Final Review by Board	July 16, 2024
5.2 Final Graduation Project Grade Report	July 19, 2024

20. Theoretical framework

20.1 Estate of the “matter”

Jamaica, known for its vibrant culture and picturesque beaches, faces a pressing energy challenge that affects both its economy and its people (Marsh, 2023). Along with the challenges faced regarding energy consumption, Jamaica also has experiences challenges with youth development, in particular, youth unemployment. In recent years, the trend has been decreasing, but unemployment remains high for Jamaica’s youth (United Nations - Jamaica, 2023). With an estimated 23% of Jamaicans living in poverty we must partner with young people to tackle climate change through advocacy collaborations and emerging jobs and employment opportunities to bolster mitigation efforts ("Prepare youth for a climate-resilient, poverty-free future," 2023).

In order to tackle the challenges faced regarding energy consumption and youth unemployment, it is key to have inclusivity with vulnerable groups and communities. To ensure a project of this nature creates the positive impact intended of not only social but environmental, it is necessary to create a project management plan that is aligned to the best practices of the Project Management Institute. The implementation of this project will add value by helping to increase the use of renewable energy whilst equipping youth with requisite skills for the future. The creation of the Final Graduation Project will provide the road map necessary to execute the project to achieve these objectives

20.2 Basic conceptual framework

Project, Project Management, Program, Project Management Process Groups, Project Management Knowledge Areas, Project Management Domains, Project Life Cycle, Project Management Principles, Regenerative Development, Renewable Energy

21. Methodological framework

Objective	Name of deliverable	Information sources	Research method	Tools	Restrictions
1. To create a Project Charter to provide a high level documentation of the project and enable the authorization of the Project Manager	Project Charter	**Primary Source:** Interviews with PIOJ's Technical Specialist Interview with Trench Town Community Development Committee (CDC) President Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide	Elements of the project charter will be developed through the use of interviews to collect qualitative data to populate areas such as the objectives, justification and deliverables. The quantitative method will be used to document the milestones and budget.	Expert Judgement, Document Analysis, Interviews	Project charter must be completed within a week. Approval may not be given in a timely manner

		Seventh Edition Trench Town Baseline Study VNR SDGs report Journal Article Internet			
2. To develop a Scope Management Plan to identify and document all work that would render the project complete	Scope Management Plan, Work Breakdown Structure (WBS), WBS Dictionary	**Primary Source:** Interviews with PIOJ's Technical Specialist Project Charter Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®)	The Scope Management Plan will be developed using qualitative research methods.It will utilize interviews and document analysis of similar type projects to determine all the work to be completed by the project.	Expert Judgement, Document Analysis, Interviews, Brainstorming	The time to complete the project is twelve (12) weeks which gives an estimated week for completion

		Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study UCI Documents			
3. To develop a Schedule Management Plan to ensure the identified project activities are sequenced, monitored and controlled to facilitate the timely completion of the project	Schedule Management Plan, Project Schedule	**Primary Source:** Interviews with PIOJ's Technical Specialist Project Charter Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition	The Schedule Management Plan will be developed using qualitative research methods. This will be done through the use of interviews, observations and document analysis of similar projects to determine the project's duration, the order in which activities would be executed and the identification of schedule constraints.	Expert Judgement, Document Analysis, Decomposition, Microsoft Projects, Analogous Estimating, Critical Path Method	The time to complete the project is only twelve (12) weeks which gives an estimated week for completion

		PMBOK® Guide Seventh Edition			
4. To develop a Cost Management Plan to determine how financial resources will be estimated, managed and allocated to prevent cost overrun.	Cost Management Plan, Budget	**Primary Source:** Interviews with PIOJ's Technical Specialist Project Charter Project Team Meetings Steering Committee Meetings Quotations **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition	The Cost Management Plan will be developed using-qualitative research methods through the analysis of historical data and interviews with key subject matter experts	Expert Judgement, Meetings, Analogous Estimating	Due to increasing inflation rates budgetary amounts may increase over the original cost given

5. To design a Stakeholder Management Plan to identify all individuals, groups or organizations that may be affected by the project work and determine the best mechanisms for their engagement and management throughout the project's lifecycle	Stakeholder Management Plan , Stakeholder Register, Power/Influence Matrix	**Primary Source:** Interviews with PIOJ's Technical Specialist Interviews with Trench Town CDC President Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study	The Stakeholder Management Plan will be developed using mixed-methods research methods. It will utilize surveys to determine the best ways of engagement. It will also utilize interviews and document analysis to identify the stakeholders	Expert Judgement, Stakeholder Analysis, Meetings, Document Analysis	Stakeholders are not available for engagement at the same time
6. To design a Commun	Communications	**Primary Source:**	The Communications	Expert Judgement, Meetings,	Internet connectivity issues to

ications Management Plan to determine how project information will be distributed among stakeholders and how it will be properly managed	Management Plan	Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition	Management Plan will be developed using mixed methods in which interviews and surveys will be utilized to determine the best ways information will be distributed among stakeholders	Communication requirements analysis	facilitate the distribution of information
7. To develop a Quality Management Plan to identify and determine the how the quality standards will be managed throughout the project	Quality Management Plan	**Primary Source:** Project Team Meetings Steering Committee Meetings Interview with Trainers Interview with Solar Panels Expert **Secondary Source:**	The Quality Management Plan will be developed using qualitative research methods. This will be done through the use of document analysis to determine the pre-set standards of quality required for different elements of the project. It would also	Expert Judgement, Audits, Meetings, Document Analysis	Limited access to expert subject matter

		A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition	utilize surveys and questionnaires to execute quality audits		
8. To develop a Risk Management Plan to identify risks and opportunities associated with the project and outline how they should be managed and monitored	Risk Management Plan, Risk Matrix	**Primary Source:** Interview with Trench Town Community Development Committee (CDC) President Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition	The Risk Management Plan will be developed using mixed methods in which quantitative methods will be used to help determine how best to assess the risk. It will also include qualitative data, through the analysis of historical data and lessons learned in identifying risks.	Expert Judgement, Meeting, Document Analysis, Brainstorming, Interviews, Risk Categorization, Probability and impact assessment	The community is highly volatile which may result in unforeseen risks

		PMBOK® Guide Seventh Edition Trench Town Baseline Study Report			
9. To develop a Procurement Management Plan to manage the acquisition of goods and services needed for the project	Procurement Management Plan	**Primary Source:** Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Jamaica legal procurement framework	The Procurement Management Plan will be developed using qualitative research methods through the usse of document analysis such as the procurement act to ensure the guidelines are adhered to	Expert Judgement, Meetings, Audits, Document Analysis	Procurement options are restricted to the approved budget

10. To develop a Resource Management Plan to identify the team and physical resources and how they should be assigned, managed and controlled throughout the project.	Resource Management Plan, RACI Chart	**Primary Source:** Project Team Meetings Steering Committee Meetings **Secondary Source:** A Guide to Project Management Body of Knowledge (PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition Trench Town Baseline Study	The Resource Management Plan will be developed using qualitative research methods. Interviews and document analysis will be required to identify the different resources and h	Expert Judgement, Meetings, Document Analysis, Analogous Estimating, Responsibility assignment matrix	The project will be completed by only one researcher
11. To include regenerative and sustainability practices in project activities to create positive impacts in the	Validation of Regenerative and Sustainability Development	**Primary Source:** Emails to UCI Professors **Secondary Source:** A Guide to Project Management Body of Knowledge	The inclusion of regenerative and sustainability practices will be developed using qualitative research methods. Document Analysis and interviews	Expert Judgement, Document Analysis	Access may be limited to key experts who can provided relevant information

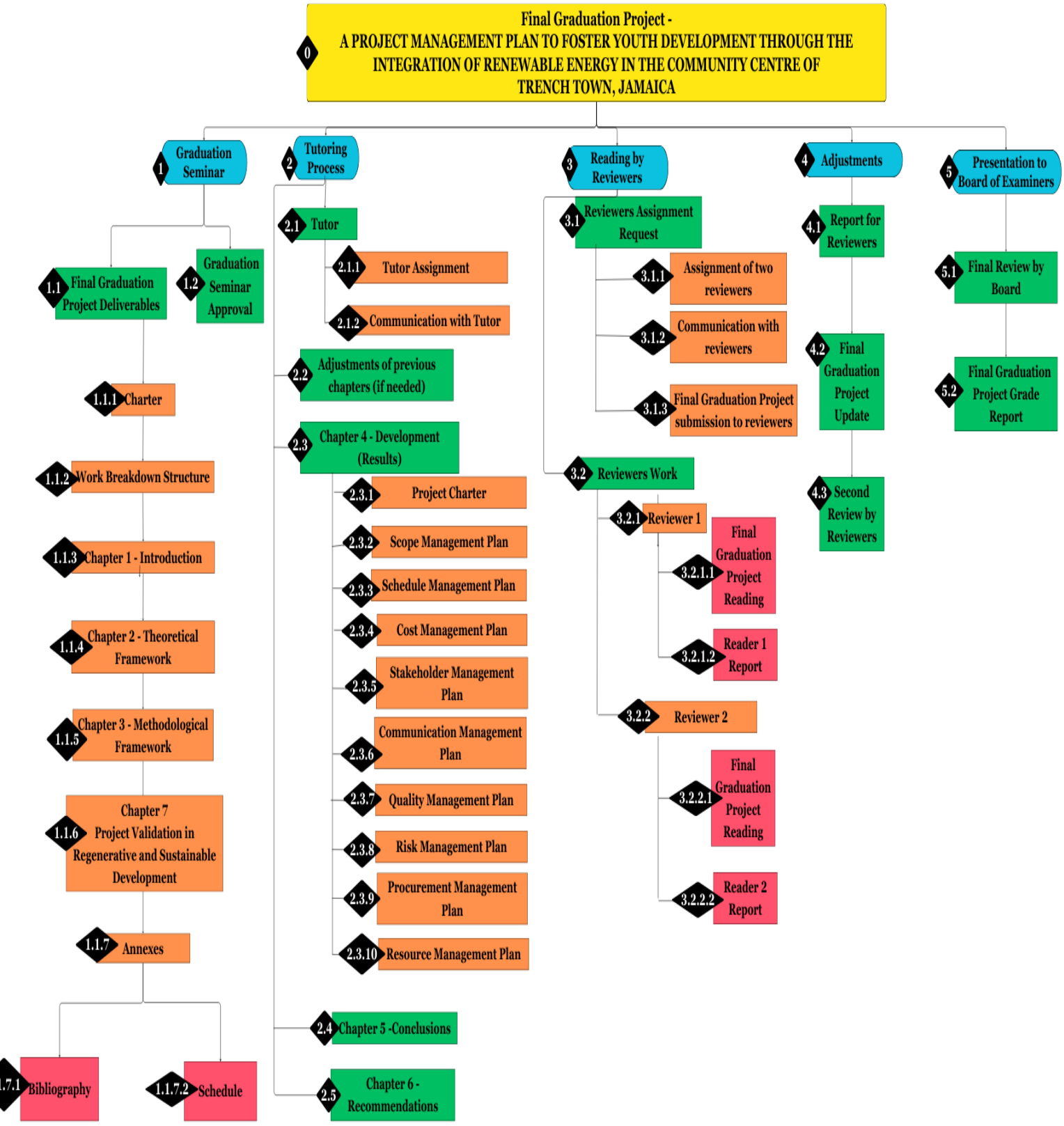
environment		(PMBOK®) Guide Sixth Edition PMBOK® Guide Seventh Edition The GPM P5 Standard for Sustainability in Project Management	with subject matter experts.		

22. Validation of the work in the field of the regenerative and sustainable development.

With innovation, technology, and the revolutionization of industries, the human population has become selfish with its motives and has neglected the overall health of the planet. However, through the awareness and integration of elements of regenerative and sustainable development there has been a reduction in these negative practices. This project aimed at fostering youth development through the integration of renewable energy has elements of both regenerative and sustainable development. The project is fully aligned to five (5) of the six (6) regenerative principles and is partially aligned to one. It is also aligned to six (6) of the seventeen (17) Sustainable Development Goals. Indicators of achieving the SDGs are:

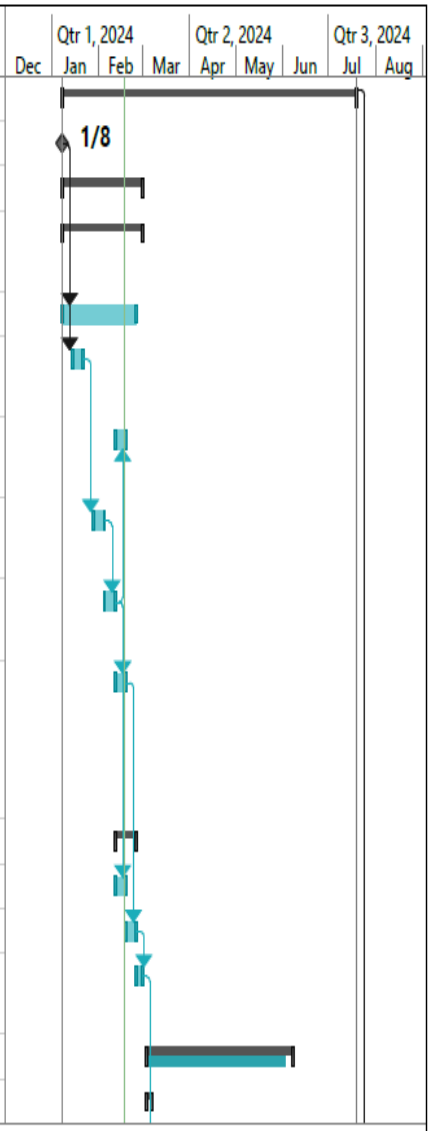
Sustainable Development Goals	Indicators
Goal 1: No Poverty	Number of youth attaining a paid job directly related to areas of training within the project up to 12 months after project completion
Goal #4 - Quality Education	Number of youth trained and certified in the project cycle
Goal #6 - Clean Water and Sanitation	Utilization of solar energy to produce electricity to operate community centre
Goal #7 - Affordable and Clean Energy	Utilization of solar energy to produce electricity to operate community centre
Goal #8 - Decent Work and Economic Growth	Number of youth attaining a paid job directly related to areas of training within the project up to 12 months after project completion
Goal # 13 - Climate Action	Utilization of solar energy to produce electricity to operate community centre

Appendix 2: FGP WBS



Appendix 3: FGP Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Final Graduation Project**	**143 days**	**Mon 1/8/24**	**Fri 7/19/24**	
2		Final Graduation Start	0 days	Mon 1/8/24	Mon 1/8/24	
3		**1. Graduation Seminar**	**41 days**	**Mon 1/8/24**	**Thu 2/29/24**	
4		**1.1 Final Graduation Deliverables**	**41 days**	**Mon 1/8/24**	**Thu 2/29/24**	
5		1.1.1. Charter	38 days	Mon 1/8/24	Sun 2/25/24	2
6		1.1.2 Work Breakdown Structure	6 days	Mon 1/15/24	Sun 1/21/24	2
7		1.1.3 Chapter 1 - Introduction	6 days	Mon 2/12/24	Sun 2/18/24	9
8		1.1.4 Chapter 2 - Theoretical framework	6 days	Mon 1/29/24	Sun 2/4/24	6
9		1.1.5 Chapter 3 - Methodological	6 days	Mon 2/5/24	Sun 2/11/24	8
10		1.1.6 Chapter 7 - Project Validation in Regenerative and Sustainable	6 days	Mon 2/12/24	Sun 2/18/24	9
11		**1.1.7 Annexes**	**11 days**	**Mon 2/12/24**	**Sun 2/25/24**	
12		1.1.7.1 Schedule	6 days	Mon 2/12/24	Sun 2/18/24	9
13		1.1.7.2 Bibliography	6 days	Mon 2/19/24	Sun 2/25/24	10
14		1.2 Graduation Seminar Approval	4 days	Mon 2/26/24	Thu 2/29/24	13
15		**2. Tutoring Process**	**70 days**	**Mon 3/4/24**	**Fri 6/7/24**	
16		**2.1 Tutor**	**3 days**	**Mon 3/4/24**	**Wed 3/6/24**	

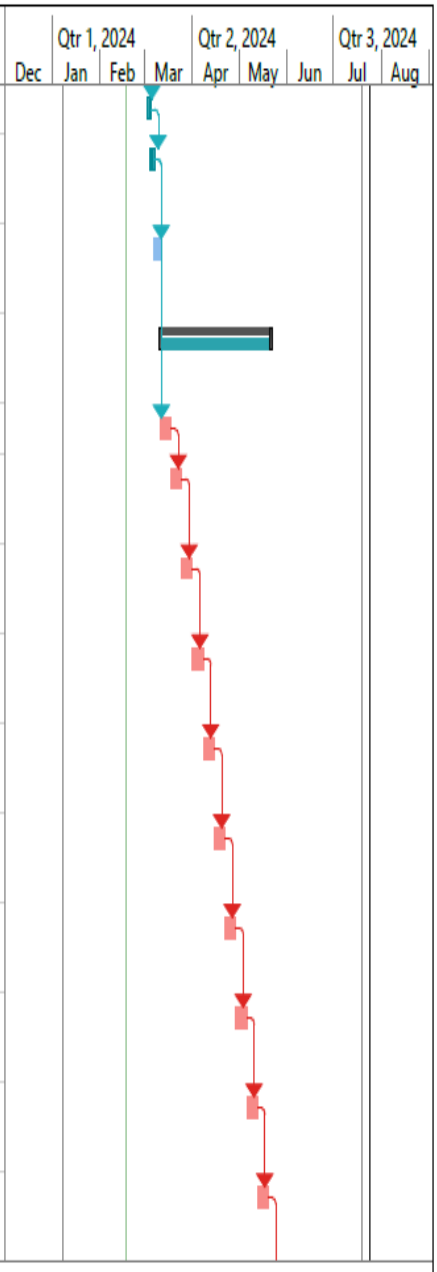


Project: Wellington nee Morgan
Date: Sun 2/18/24

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Critical
Project Summary	Manual Summary	Critical Split
Inactive Task	Start-only	Progress
Inactive Milestone	Finish-only	Manual Progress

Page 1

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
17		2.1.1 Tutor Assignment	1 day	Mon 3/4/24	Mon 3/4/24	14
18		2.1.2 Communication with Tutor	2 days	Tue 3/5/24	Wed 3/6/24	17
19		2.2 Adjustments of Previous Chapters (if	2 days	Thu 3/7/24	Sun 3/10/24	18
20		**2.3 Chapter 4 - Development (Results)**	**52 days**	**Mon 3/11/24**	**Tue 5/21/24**	
21		2.3.1 Project Charter	6 days	Mon 3/11/24	Sun 3/17/24	18
22		2.3.2 Scope Management Plan	6 days	Mon 3/18/24	Sun 3/24/24	21
23		2.3.3 Schedule Management Plan	6 days	Mon 3/25/24	Sun 3/31/24	22
24		2.3.4 Cost Management Plan	6 days	Mon 4/1/24	Sun 4/7/24	23
25		2.3.5 Stakeholder Management Plan	6 days	Mon 4/8/24	Sun 4/14/24	24
26		2.3.6 Communication Management Plan	6 days	Mon 4/15/24	Sun 4/21/24	25
27		2.3.7 Quality Management Plan	6 days	Mon 4/22/24	Sun 4/28/24	26
28		2.3.8 Risk Management Plan	6 days	Mon 4/29/24	Sun 5/5/24	27
29		2.3.9 Procurement Management Plan	6 days	Mon 5/6/24	Sun 5/12/24	28
30		2.3.10 Resource Management Plan	6 days	Mon 5/13/24	Sun 5/19/24	29



Project: Wellington nee Morgan
Date: Sun 2/18/24

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
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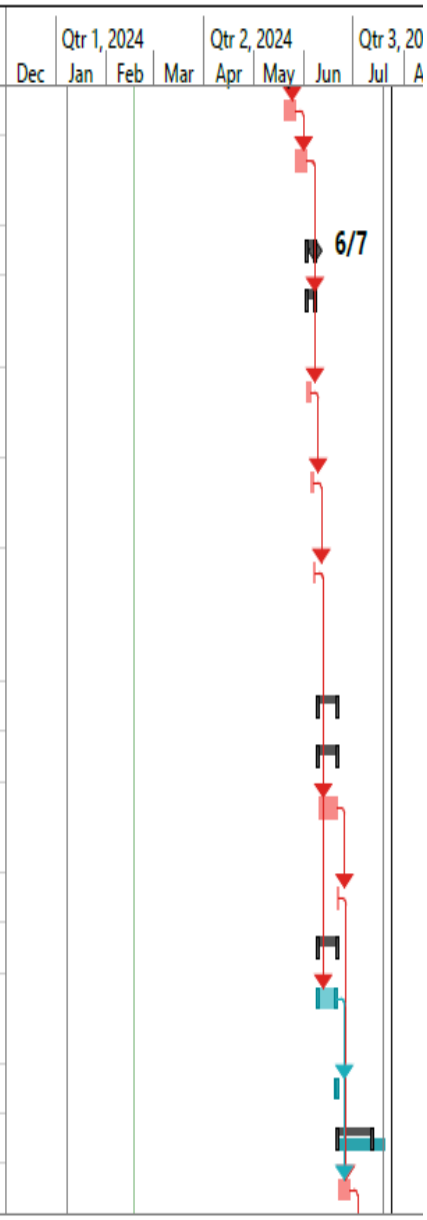
Project Summary	Manual Summary	Critical Split
Inactive Task	Start-only	Progress
Inactive Milestone	Finish-only	Manual Progress

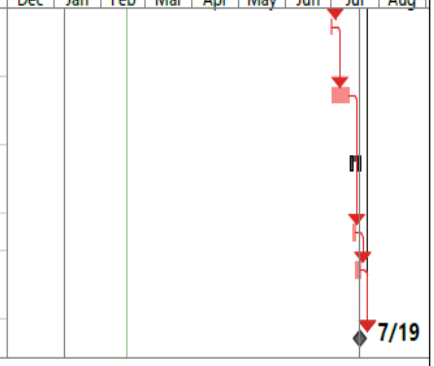
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
31		2.4 Chapter 5 - Conclusion	6 days	Mon 5/20/24	Sun 5/26/24	30
32		2.5 Chapter 6 - Recommendations	6 days	Mon 5/27/24	Sun 6/2/24	31
33		**3.Reading by Reviewers**	**5 days**	**Mon 6/3/24**	**Fri 6/7/24**	
34		**3.1 Reviewers Assignment Request**	**5 days**	**Mon 6/3/24**	**Fri 6/7/24**	**32**
35		3.1.1 Assignment of two reviewers	2 days	Mon 6/3/24	Tue 6/4/24	32
36		3.1.2 Communication with reviewers	2 days	Wed 6/5/24	Thu 6/6/24	35
37		3.1.3 Final Graduation Project Submission to Reviewers	1 day	Fri 6/7/24	Fri 6/7/24	36
38		**3.2 Reviewers Work**	**10 days**	**Mon 6/10/24**	**Fri 6/21/24**	
39		**3.2.1 Reviewer 1**	**10 days**	**Mon 6/10/24**	**Fri 6/21/24**	
40		3.2.1.1 Final Graduation Project Reading	9 days	Mon 6/10/24	Thu 6/20/24	37
41		3.2.1.2 Reader 1 Report	1 day	Fri 6/21/24	Fri 6/21/24	40
42		**3.2.2 Reviewer 2**	**10 days**	**Mon 6/10/24**	**Fri 6/21/24**	
43		3.2.2.1 Final Graduation Project Reading	9 days	Mon 6/10/24	Thu 6/20/24	37
44		3.2.2.2 Reader 2 Report	1 day	Fri 6/21/24	Fri 6/21/24	43
45		**4. Adjustments**	**16 days**	**Sat 6/22/24**	**Fri 7/12/24**	
46		4.1 Report for Reviewers	6 days	Sat 6/22/24	Fri 6/28/24	41,43



Project: Wellington nee Morgan
Date: Sun 2/18/24

Task	Inactive Summary	External Tasks	
Split	Manual Task	External Milestone	
Milestone	Duration-only	Deadline	
Summary	Manual Summary Rollup	Critical	
Project Summary	Manual Summary	Critical Split	
Inactive Task	Start-only	Progress	
Inactive Milestone	Finish-only	Manual Progress	

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
47		4.2 Final Graduation Project Update	1 day	Mon 7/1/24	Mon 7/1/24	46
48		4.3 Second Review by Reviewers	9 days	Tue 7/2/24	Fri 7/12/24	47
49		**5. Presentation to Board of Examiners**	**5 days**	**Mon 7/15/24**	**Fri 7/19/24**	
50		5.1 Final Review by Boar	2 days	Mon 7/15/24	Tue 7/16/24	48
51		5.2 Final Graduation Project Grade Report	3 days	Wed 7/17/24	Fri 7/19/24	50
52		End	0 days	Fri 7/19/24	Fri 7/19/24	1,51



Project: Wellington nee Morgan
Date: Sun 2/18/24

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Inactive Task	Start-only	Progress
Inactive Milestone	Finish-only	Manual Progress

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Note: Prepared by Author, Kimberley Wellington nee`Morgan

Appendix 4: Preliminary bibliographical research

Aprilia, A. (2023). Empowering youth: Transforming passion into action for energy transition. *UNDP*. https://www.undp.org/indonesia/blog/empowering-youth-transforming-passion-action-energy-transition

This article referenced three key ways in which youth can contribute to sustainable energy practices

Brac Consultants. (2020). *Conducting Baseline Studies for Seventeen Vulnerable and Volatile Communities in support of the Community Renewal Programme*. Planning Institute of Jamaica.

This baseline study report outlines the developmental challenges faced by the community of Trench Town. It also details background information about the community.

Certwise by Holmes Corporation. (2020). Project Life Cycles, Phases, and Process Groups. In *The certwise learning system for PMP exam preparation* (pp. 23,24,25). Holmes Corporation. https://www.certwise.com/wp-content/uploads/2017/03/CW_PMP_Reading-Sample.pdf

International Institute for Sustainable Development. (2022). *Jamaica's Adaptation Communication*. https://unfccc.int/sites/default/files/ACR/2022-12/Adaptation%20Communication%20for%20Jamaica.pdf

This report outlines the impact and risk of climate change on various sectors in Jamaica and the different types of climate adaptation interventions that have taken place. It also shares the barriers and challenges faced in the adaptation process.

Jensen, E. (n.d.). *Solar*. Regeneration.org. https://regeneration.org/nexus/solar

This article outlines the advantages of using solar energy.

Mang, Pamela & Reed, Bill. (2020). Regenerative Development and Design. 10.1007/978-1-0716-0684-1_303.

Marketing Communications: Web // University of Notre Dame. (2021). *Rankings // Notre Dame global adaptation initiative // University of Notre Dame*. Notre Dame Global Adaptation Initiative. https://gain.nd.edu/our-work/country-index/rankings/

This website shares the worldwide statistical ranking for all country's vulnerability to climate change.

Marsh, J. (2023). *The state of renewable energy in Jamaica*. Borgen Project. https://borgenproject.org/renewable-energy-in-jamaica/

This article shares the state of renewable energy in Jamaica,

Müller, E. (2017). Regenerative development, the way forward to saving our civilization. San Jose, Costa Rica: UCI.

Nediger, M. (2023, October 31). What is the project life cycle & its 5 main phases? Venngage. https://venngage.com/blog/project-life-cycle/

Planning Institute of Jamaica. (2022). *Voluntary National Review Report: Implementation of the 2030 Agenda and the Sustainable Development Goals 2022*. https://www.pioj.gov.jm/product/voluntary-national-review-report-on-the-2030-agenda-and-the-sustainable-development-goals/

This report shared the Voluntary National Review Report: Implementation of the 2030 Agenda and the Sustainable Development Goals (SDGs) 2022. It shared SDGs Goal 13 which is to take urgent action to combat climate change and its impacts. It outlined the various ways in which this was being incorporated in Jamaica.

Planning Institute of Jamaica. (2018). Jamaica voluntary national review on the implementation of the 2030 Agenda for Sustainable Development. https://www.pioj.gov.jm/product/jamaica-voluntary-national-review-report-on-the-implementation-of-the-2030-agenda-for-sustainable-development/

Prepare youth for a climate-resilient, poverty-free future. (2023, February 9). UNDP. https://www.undp.org/jamaica/blog/prepare-youth-climate-resilient-poverty-free-future

This website provides information on poverty statistics in Jamaica.

Project Management Institute. (2017). A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) - Sixth Edition, Project Management Institute, Inc., 2017.

This book provides key information on the inputs, tools & techniques, and outputs for each knowledge area which is key to developing the project management plan.

Project Management Institute. (2021). A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) - Seventh Edition, Project Management Institute, Inc., 2021.

This book outlines the various development approaches and methodologies. It features the performance domains which are used to deliver value to a project.

Rabaia, M., Abdelkareem, M., Sayed, E., Elsaid, K., Chae, K., Wilberforce, T., & Olabi, A. (2021). Environmental impacts of solar energy systems: A review. *Science of The Total Environment, 754*. https://www.sciencedirect.com/science/article/pii/S0048969720355182

This journal article outlines the impact of solar energy as a renewable energy product on the environment.

Rushton, J. (2023, September 13). *50+ Project Management Statistics You Need to Know – Success, Failure, and the Market*. Technopedia. https://www.techopedia.com/project-management-statistics

This website provides information on statistics relating to project management

United Nations - Jamaica. (2023). *Jamaican economy panel commends reduction in youth unemployment and debates options for its continued decline*. Jamaica. https://jamaica.un.org/en/248782-jamaican-economy-panel-commends-reduction-youth-unemployment-and-debates-options-its

Vision 2030 Jamaica. (2021, August 26). *National goals and outcomes*. Vision 2030. https://www.vision2030.gov.jm/national-goals-and-outcomes/

This website shares the National Development Goals and Outcomes to which the project is aligned.

Appendix 5: Change Control Process

Integrating changes to the project requires approval from the change control board. The members and their roles and responsibilities are detailed below.

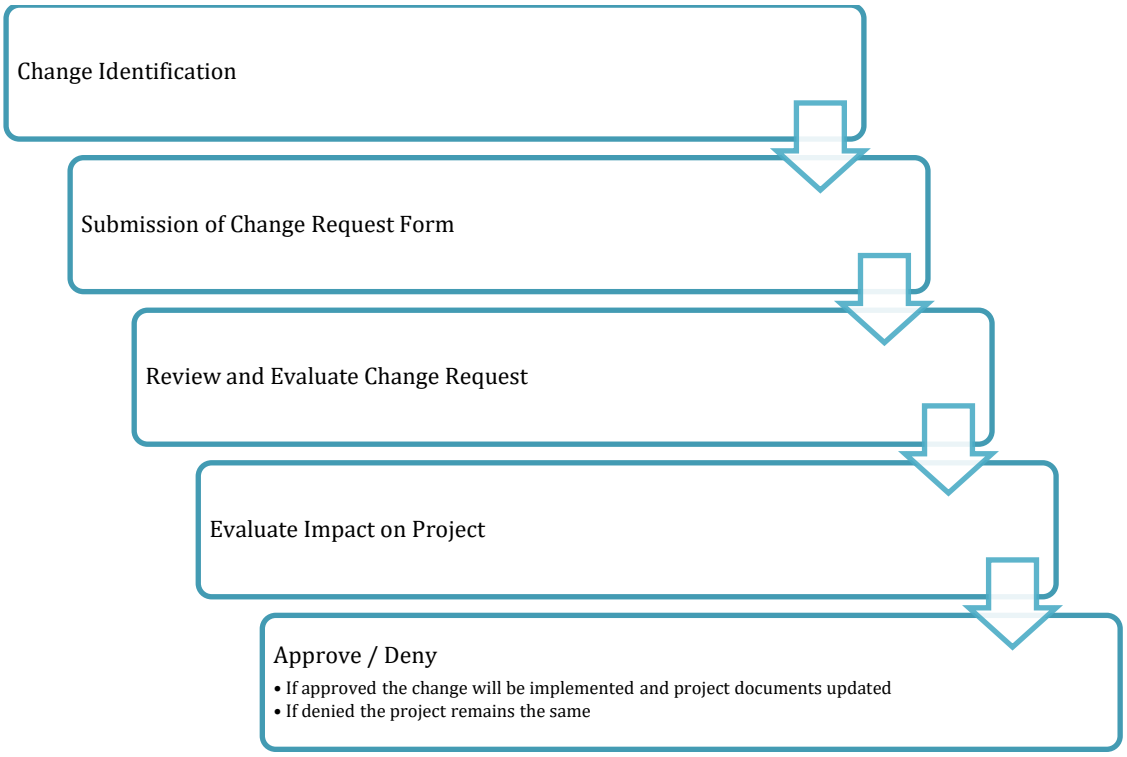
Change Control Board

Role	Responsibility
Chief Financial Controller – Government of Jamaica	Review and evaluate change request submissions Approve/Deny Change Request
Director General – Planning Institute of Jamaica	Review and evaluate change request submissions Approve/Deny Change Request
Steering Committee Delegate	Review and evaluate change request submissions Approve/Deny Change Request
Project Assistant	Organize and record meetings
Project Manager	Submit change requests Provide information on possible impact to the project Implement approved changes

Note: Author's own work

The change control process is represented graphically below.

Change Control Process



Note: Author's Own Work

To ensure transparency in the change control process, every request is submitted through this form which is coded and filed.

Change Request Form

Code:		
Project name:		
Submitted by:		
Date:		
Type of change requested:		
Reason for change requested:		
Impact on project cost, schedule, scope and quality:		
Reason for Approval or Denial:		
Approval:	_____ Project Sponsor	Date:
Witness		Date:
Approval:	_____ Steering Committee Delegate	Date:
Witness		Date:

Note: Author's own work

Appendix 6: Lessons Learned Register

1.Task/Activity/ Output	[add text]	[add text]	[add text]
2.What worked well and should be repeated or scaled up?	[add text]	[add text]	[add text]
3.What did not work well	[add text]	[add text]	[add text]
4.What action should be taken to improve No.3?	[add text]	[add text]	[add text]
5.Who has been tasked with this action?	[add text]	[add text]	[add text]
6.Who should know about this lesson?	[add text]	[add text]	[add text]
7.Who can be approached for details on this lesson?	[add text]	[add text]	[add text]

Source: Adapted from the Planning Institute of Jamaica

Appendix 7: Philological Dictum

KENEISHA
LEWIS

May 19, 2024

Academic Advisor
Master's Degree in Project Management (MPM)
Universidad para la Cooperacion Internacional (UCI)
San Jose 10101
Costa Rica

Dear Sir/Madam,

This letter serves as confirmation that I received the Final Graduation Project (FGP) submitted by Kimberley Alicia-Vanessa Wellington née Morgan entitled "A PROJECT MANAGEMENT PLAN TO FOSTER YOUTH DEVELOPMENT THROUGH THE INTEGRATION OF RENEWABLE ENERGY IN THE COMMUNITY CENTRE OF TRENCH TOWN, JAMAICA", in partial fulfillment of the requirements for the Master's in Project Management (MPM) degree.

I confirm that Mrs. Wellington has made all syntactic and grammatical corrections that I suggested as an English teacher and that her paper meets the linguistic and language proficiency requirements of the MPM by the Universidad para la Cooperacion Internacional.

Sincerely,

Kenelsha Lewis

Stonewain Ct
Towson, MD 21204
asheniek@gmail.com