

# UKS31464

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**ASSIGNMENT A - PREPARE AN OUTLINE BUSINESS CASE  
FOR A RENEWABLE ENERGY PROJECT**

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## 1. Project Environment Analysis

<b>Strength</b> <ul style="list-style-type: none"> <li>• The utilization of rich solar resources</li> <li>• Rich resources of land and space</li> <li>• Application for suitable pv solar system</li> </ul>	<b>Weakness</b> <ul style="list-style-type: none"> <li>• Renewable energy investment from the government has been low.</li> <li>• Insufficient knowledge of environmental and social benefits.</li> </ul>
<b>Opportunity</b> <ul style="list-style-type: none"> <li>• Can increase awareness for Changing climate.</li> <li>• Increased gap between demand and energy supply.</li> </ul>	<b>Threat</b> <ul style="list-style-type: none"> <li>• The dominant situation of fossil fuel</li> <li>• Discontinuity on policies related to energy transfer</li> </ul>

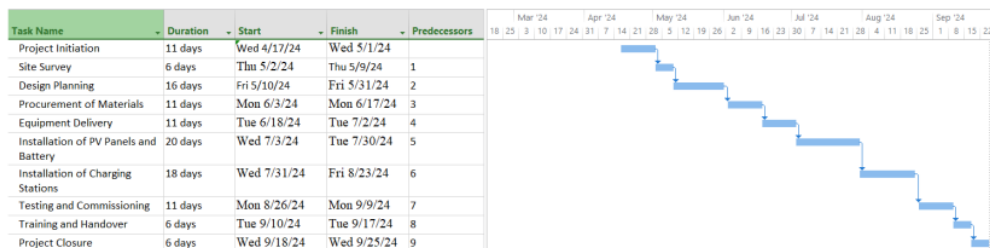
**Table 1: SWOT**

(Source: Self-created)

### Speaker Note:

The richness of solar resources exhibits depreciated remarkable advantages for this project in terms of finding potential. Compared to traditional power generation methods that use fossil fuels, PV solar power generation requires more land per unit capacity (Ahmed *et al.* 2020). For instance, a 1 MW solar PV system that uses polycrystalline PV modules needs around 1 hectare of land. The large bulk of investment must be a weakness for this PV Solar power project. Rising consumption is of energy deficit energy trade more. Large-scale adoption of solar PV may inevitably clash with the interests of the major fossil fuel-based electricity generators.

## 2. Project scheduling and organization (Gantt, CPA & RACI) 20 marks



**Figure 1: Gantt chart**

(Source: Self-created)

**Speaker Note:** By effectively managing time with tasks, the project can achieve its goals while minimizing any negative impacts on the project (Suhanda and Pratami, 2021). CPA would connect from the site survey to the installation of PV panels and battery then closure to the project.

<b>Task</b>	<b>Responsible (R)</b>	<b>Accountable (A)</b>	<b>Consulted (C)</b>	<b>Informed (I)</b>
<b>Project Initiation</b>	Project Manager	Finance Manager	Team Members	Stakeholders
<b>Site Survey</b>	Mechanical Eng	Electrical Eng	Transport Eng	Team Members
<b>Design Planning</b>	Electrical Eng	Mechanical Eng	Transport Eng	Team Members
<b>Procurement of Materials</b>	Supply Chain	Finance Manager	Project Manager	Team Members
<b>Equipment Delivery</b>	Supply Chain	Project Manager	Finance Manager	Team Members
<b>Installation of PV Panels and Battery</b>	Electrical Eng	Mechanical Eng	Transport Eng	Team Members
<b>Installation of Charging Stations</b>	Electrical Eng	Mechanical Eng	Transport Eng	Team Members
<b>Testing and</b>	Electrical Eng	Mechanical Eng	Transport Eng	Team Members

<b>Commissioning</b>				
<b>Training and Handover</b>	Electrical Eng	Project Manager	Finance Manager	Team Members
<b>Project Closure</b>	Project Manager	Finance Manager	Team Members	Stakeholders

**Table2: RACI**

(Source: Self-created)

**Speaker note:** RACI Matrix has highlighted each role of their terms denotes who is responsible for project management in their actions (Dai *et al.* 2022).

### 3. Financial forecasting (cash flow, Payback period, NPV) 20 marks

<b>Electricity Generated</b>	1000000 units
<b>Electricity Stored</b>	10000 units
<b>Electricity cost</b>	£151500
<b>Cash Flow</b>	£5338500
<b>Payback period</b>	£9.365926758
<b>NPV</b>	£51914179.93

**Table 3: Financial forecasting**

(Source: Self-created)

**Speaker Note:**

Electricity Generated = 200,000 units / 0.2 = 1,000,000 units

Electricity Stored = 10,000 units

Assuming an electricity price of £0.15 per unit, the total electricity cost for the project will be  

$$= (\text{Electricity Generated} + \text{Electricity Stored}) * £0.15 = £151500$$

#### Cash Flow

Cash Flow = Total Revenue - Total Costs = £6,000,000 - (£500,000 + £10,000 + £150,150) =  
 £5338500

#### Payback Period

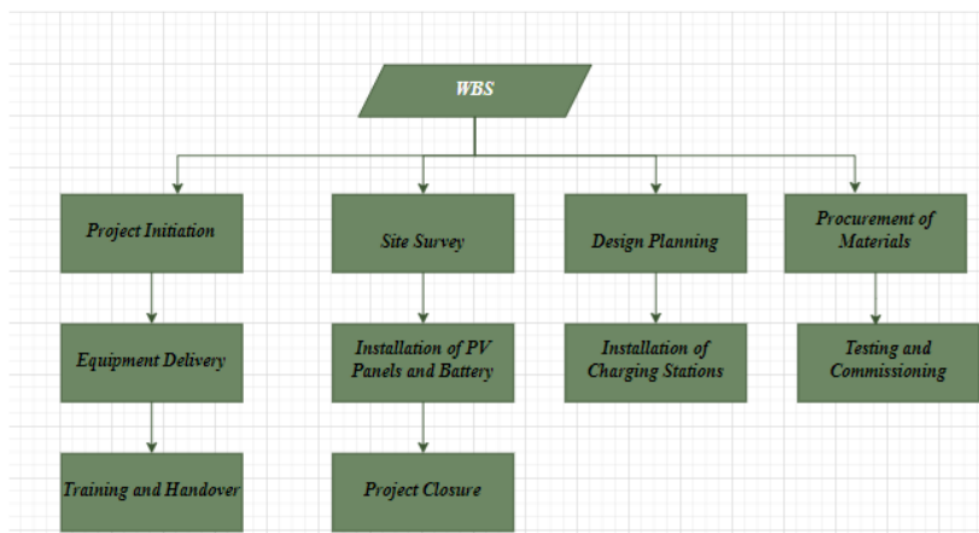
Payback Period = Capital Cost / Annual Cash Flow = 9.37 years.

#### NPV

NPV =  $(\text{Cash Flow} / (1 + \text{Discount Rate})^{20}) - \text{Capital Cost} = (£5338500 / (1 + 0.08)^1) +$   
 $(£5338500 / (1 + 0.08)^2) + \dots + (£5338500 / (1 + 0.08)^{20}) - £500,000 = £51914179.93$

### 4. Operational management (WBS, Risk register) 20 mark

#### WBS



**Figure2: WBS**

(Source: Self-created)

#### Speaker Note:

The above figure is for WBS structure will be the main task-based activity that will enforce the project faster (Wang, 2020).

#### Risk registration

Risk	Probability	Severity	Mitigation
Delays in equipment delivery	High	Medium	A lot of alternate suppliers and maintain regular communication with team members to ensure timely delivery.
Changes in government policies	Low	High	Monitor government policies and develop contingency plans to adapt to changes.
Technology obsolescence	Medium	High	Regularly evaluate new technologies and plan for regular updates.
Power outages	Low	High	Implement backup power solutions

**Table 4: Risk registration**

(Source: Self-created)

**Speaker Notes:** By identifying and planning for potential risks, the project team can minimize the likelihood and impact of negative events and ensure the project's success.

## 5. Stakeholder management (at least 3 key stakeholders)

- Identification of stakeholder (*Government, Employees, Investors*)
- Developing their activity
- Forecasting of budget and planning support
- Management plan and progress

**Speaker Note:**



For PV installation and battery storage installation, it will be necessary to identify customers, investors, local communities, government, suppliers, employees, etc (Martinsuo and Ahola, 2022). Employees like mechanical engineers, electrical, transport, and finance engineers will help to robust the work procedures perfectly. Engagement activities like surveys, focus groups, and meetings would bring concern over project progress.

## Reference List

### Journals

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