BUSINESS PLAN FOR NODAL SAFETY SWITH AND SOCKET

OPERATIONS PLAN

Nodal safety switch or socket is an electrical device that is designed to protect appliances and gadgets against surge power and saves energy.

PRODUCTION PROCESS

1. Circuit Diagram
2. Heshing the circuit on a copper board
3. Drilling the points hesh board
4. Fixing the circuit components
5. Soldering
6. Testing

PRODUCTION MATERIAL

1. Neon Lamp Indicator
2. A.C relay 20 amps for the contacts (2 channel relay)
3. Connecting cable; 1.5 cablesize
4. Single switch use
5. Contact pins in the socket/ switch
    i. Copper
    ii. Bronze
    iii. Steel
6. Push bottom 0.5Amps
7. Socket plastic material

BILL OF MATERIALS PREPARATION

COMPONENT FABRICATION

Most of the components used, are circuit elements which are standard parts and which are available in the local electrical markets, but could be imported in bulk for economies of scale..

MANUFACTURING LAYOUT

1. Printer Machine Layout for circuit printing
2. Preparations of chemical pot for board cleaning
3. Cutting of the copper scrap board
4. Immersion of the printed scrap in chemical pot
5. Cleaning off the chemical of with water
6. Drilling the points hesh board
7. Fixing the circuit components
8. Soldering
9. Testing

ASSEMBLY AND PACKAGING.

1. Design and 3 printing of housing (container)
2. Installation of the device inside the container,
3. Installation of input and output termination points on the container
4. Closing up of the device container
5. Quality control

CAPACITY AND QUALITY CONTROL:

Based on design, the capacity range from 500W, 1KW, 2KW, 5KW, 500KW etc. This depends on the circuit we are controlling.

CURRENT MASS PRODUCTION BUDGET SUMMARY

SN	ITEM DESCRIPTION	AMOUNT
1	Engineering Design and Simulations	10,000,000.00
2	Machining and Fabrication Equipment	25,000,000.00
3.	3D Printing Machines	23,000,000.00
4	Metal Stamping Equipment	13,000,000.00
5	Fitting and Assembly equipment	15,000,000.00
6	Circuit Board Printing Machines	15,000,000.00
7	Testing and Quality Assurance	15,000,000.00
8.	Labour Cost	15,000,000,00
9.	Consumables	15,000.000,00
10,	Training and support	12,000,000,00
	TOTAL	**153,000,000.00**

QUALITY CONTROL PROTOCOLS

Prototypes have been tested and in used

SCALABLE PRODUCTION METHODS TO BE ADDED

Product is very scalable as it could scaled based on power output and the production numbers according to demand,

SUPPLY CHAIN MANAGEMENT FOR RAW MATERIALS

Products available in the local electrical markets, but to allow for scaling production economically, components could be imported from China.

MARKETING AND SALES PLAN

Energy Safety Switch can be used to save power and surge in homes, offices, markets, airports, factories. It stops power inflow into the facility when human operators are off duty.

MARKETING STRATEGY:

Use social media platforms to demonstrate the operations of the switch
Mainstream media campaigns and exhibitions**.**
Collaboration with customer support stakeholders

Enhanced strategies:
Targeted advertising
Educational campaigns
Online marketing presence with e-commerce capabilities.

SALES CHANNELS:
Direct sales, distributors, partnerships with retailers and wholesalers.

FINANCIAL PROJECTIONS
Revenue per annum
Operating costs per annum
Net profit:
Profit margin:
Pay back period:
Roi:
Npv:

TERMS USED IN PRODUCTS ECONOMIC ANALYSIS
Direct or variable or recurrent cost (production materials, labour, marketing etc)

INDIRECT OR FIXED COST
(Rent, maintenance, utilities, etc)

FIXED RECURRING COST : N22,000,000.00

CAPITAL INVESTMENT (Assets, equipment, furniture/fittings, vehicle)
WORKING CAPITAL: 15,000,000.00
CONTINGENCY: 3,000,000.00
NET CASH FLOW: 5,000,000.00

COST OF CAPITAL: NIL
TAXES
GROSS AMOUNT 152,000,000.00 1,520,000.00 STAMP DUTY 1%
11,400,000.00 VALUE ADDED TAX 7.5%
7,600,000.00 WHT @ 5%
20,520,000.00

DEPRECIATION: N21,000,000.00

FABRICATION PER UNIT COST: N1,800.00

OVERHEAD COST:
PRODUCTION COST: N2,500 each
PROFIT MARGIN : N1,500.00 each
MANUFACTURING COST: N50,000,000 for 20,000 pieces production.

WORKING DAYS: Monday through Saturday

PROJECTED NUMBER OF PRODUCTS PER DAY/MONTH/ANNUM
Projected number of production is 20,000 pieces per month. Which is 240,000 pieces a year.

SELLING PRICE: N4,000.00 each
BREAKEVEN POINT: 102,000 pieces.
BREAKEVEN PRICE AND QUANITY: N38,000.00
BREAKEVEN REVENUE: N243,2000,000.00
PROJECTED ANNUAL REVENUE:N960,000,000.00
PROJECTED MONTHLY CASH FLOW: N80,000.00

PAYBACK PERIOD: 0.16

Formulas for Calculating Financial Projections
1. Revenue
Definition: The income generated from the sale of goods or services.
Formula:
Revenue = Number of Units Sold * Price per Unit
OR
Revenue = Total Sales

2. Operating Costs
Definition: Expenses incurred in running the business, such as rent, salaries, utilities, and marketing.
Formula:
Operating Costs = Cost of Goods Sold + Operating Expenses

3. Net Profit
Definition: The profit remaining after deducting all expenses from revenue.
Formula:
Net Profit = Revenue - Operating Costs
Cost of Goods Sold (COGS):

Operating Costs of Goods Sold: The direct costs associated with producing the goods sold.

4. Profit Margin
Definition: A profitability ratio that measures how much gross income is generated as a percentage of revenue.

Formula:
Profit Margin = (Gross Profit / Revenue) * 100

5. Return on Investment (ROI)
Definition: A performance measure used to evaluate the efficiency or profitability of an investment.
Formula:
ROI = (Net Profit / Cost of Investment) * 100

6. Payback Period
Definition: The length of time required to recover the cost of an investment.
Formula:
Payback Period = Initial Investment / Annual Cash Inflow

7. Linear Regression for Estimating Payback Period from a Graph
Definition: Linear regression is a statistical method used to model the relationship between two variables by fitting a linear equation to1 observed data. In this case, the two variables would be the cumulative cash flow (y-axis) and time (x-axis).
Formula:
$y = mx + c$
where:
y = cumulative cash flow
x = time
m = slope of the line (representing the annual cash inflow)
c = y-intercept (representing the initial investment)
Estimating Payback Period: Once the linear regression equation is determined, the payback period can be estimated by setting $y = 0$ and solving for x. This will give you the time at which the cumulative cash flow becomes zero, indicating the recovery of the initial investment.

Additional Notes on the Graph: To estimate the payback period from a graph, you would plot the cumulative cash flow over time and visually estimate the point where the line intersects the x-axis (time axis).