

# UP MSME 1-Connect

## PROJECT REPORT

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PROJECT:

Drone Assembly Unit

# **PROJECT REPORT OF DRONE ASSEMBLY UNIT**

## **PURPOSE OF THE DOCUMENT**

This particular pre-feasibility is regarding Drone Assembly Unit.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

## PROJECT AT GLANCE

<b>1 Name of Proprietor/Director</b>	XXXXXXXXXX
<b>2 Firm Name</b>	XXXXXXXXXX
<b>3 Registered Address</b>	XXXXXXXXXX
<b>4 Nature of Activity</b>	XXXXXXXXXX
<b>5 Category of Applicant</b>	XXXXXXXXXX
<b>6 Location of Unit</b>	XXXXXXXXXX
<b>7 Cost of Project</b>	11.78 Rs. In Lakhs
<b>8 Means of Finance</b>	
<b>i) Own Contribution</b>	1.18 Rs. In Lakhs
<b>ii) Term Loan</b>	8.10 Rs. In Lakhs
<b>iii) Working Capital</b>	2.50 Rs. In Lakhs
<b>9 Debt Service Coverage Ratio</b>	2.95
<b>10 Break Even Point</b>	0.30
<b>11 Power Requiremnet</b>	10 KW
<b>12 Employment</b>	4 Persons
<b>13 Major Raw Materials</b>	Frame,Electrical components etc.
<b>14 Details of Cost of Project &amp; Means of Finance</b>	

<b><u>Cost of Project</u></b>	<b>Amount in Lacs</b>
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<b>Particulars</b>	<b>Amount</b>
Land	Owned/Leased
Building & Civil Work	Owned/Leased
Plant & Machinery	6.00
Furniture & Fixture	1.00
Other Misc Assets	2.00
Working Capital Requirement	2.78
<b>Total</b>	<b>11.78</b>

### **Means of Finance**

<b>Particulars</b>	<b>Amount</b>
Own Contribution 10%	1.18
Term Loan 90%	8.10
Working capital Loan	2.50
<b>Total</b>	<b>11.78</b>

# **DRONE ASSEMBLY UNIT**

## **1. INTRODUCTION**

A “drone” is a specific type of unmanned aerial vehicle (UAV): the multirotor or multicopter. Similarly, as the name infers, these machines fly by directing thrust downwards from at least two motor-driven propellers. Drones are more formally known as unmanned aerial vehicles (UAVs) or unmanned aircraft systems. Essentially, a drone is a flying robot that can be remotely controlled or fly autonomously using software-controlled flight plans in its embedded systems, that work in conjunction with onboard sensors and a global positioning system (GPS). The most well-known consumer models are quadcopters (4 rotors), however commercial variations incorporate hexacopters (6 rotors) and octocopters (8 rotors) to provide more prominent lift. Drones are complex devices made out of various parts working together. Each component satisfies an alternate function, so various considerations come into play while choosing materials for each part. However, for each piece of a drone, the material thickness should be considered account to minimize the weight and maximize performance. With a joystick and a GPS, the activities of most consumer drones appear to be not complex as playing a video game. However, behind the simple user interface, there are an accelerometer, a gyroscope, and other complex technologies attempting to make the mechanics of drone flight as smooth as possible. Drones can likewise be controlled remotely, often from a smartphone or tablet. Drone-mounted cameras help users see difficult-to-reach areas and can be a game-changing tool for first responders, especially in search-and-rescue scenarios. Drones are being used by the media and entertainment industries for aerial photography, cinematography, and special effects. The latest drone model technologies offer navigation systems linked to the user’s device, high range, and control systems that are reliable, safe, efficient, and provide better speed. Sprayer and plant-protection drones are new tools available to farmers and can be used to apply pesticides to small land areas and acreages. This type of sprayer can access land that is either too wet or otherwise inaccessible by humans and can provide greater spray infiltration into the plant canopy.



## **2. MARKET POTENTIAL**

The global consumer drone market size was valued at USD 3.42 billion in 2021 and is anticipated to grow at a compound annual growth rate (CAGR) of 13.8% from 2022 to 2030. Consumer drones are becoming increasingly popular among people that want to earn a second income, explore aerial photography, or fly drones for fun, in addition to traditional flight enthusiasts and hobbyists. Customers are increasingly exploring the benefits of drones in enriching leisure activities and interests, resulting in a significant increase in global consumer drone sales. Furthermore, the recent initiatives by the Federal Aviation Authority (FAA) and additional governmental spending on advanced drones are anticipated to drive industry growth in the U.S. Drones appear to be whatever now. They are shooting movies, featuring in movies, broadcasting sports, creating new sports, working at homesteads and factories, hunting other drones, and soon they might be packaging materials, AI, and microcontrollers improve, drones will keep on changing a wide scope of industries. The developing realization of drone deployment in military operations has encouraged vendors to offer drones that can be utilized in various commercial applications. The fastest growth opportunity comes from business and civil government. The consumer drone market was the first to develop outside the military. Demand has taken off in the last two years and hobbyist drones have become a familiar sight, but there is plenty of room for growth. Drones were given their start as safer, cheaper, and frequently greater successful alternatives to manned military aircraft. The defense will remain the biggest marketplace for

the foreseeable destiny as global competition heats up and technology continues to enhance. Demand for commercial aerial photography is growing year over year, as a result, more drone pilots provide aerial photography and videography services. Agriculture spraying drones can replace the traditional pesticide sprayer and its speed is 40times of the traditional sprayer. It will save 90% water and 30%-40% pesticide. Small droplet diameters make the pesticide more well-distributed and improve the effect. At the same time, it will make people far away from the pesticide and reduce the pesticide remaining in the crop. Drones are likewise being embraced in other applications, incorporating internet provision in remote places, aerial photography and video recording, survey and documenting wildlife, and public service missions. A few companies primarily offer small drones that are utilized in agricultural, aerial photography and data collection applications. Home deliveries via drones have come to be a reality because of the efforts of logistics and retail companies like Amazon and UPS toward rolling out the technology. As commercial drones can travel at up to 100 mph and deliver goods under 5lbs (2.3 kg), the delivery mechanism is expected to decrease delivery time and related expenses. More desirable investments in drone technologies are also anticipated to foster long-term growth of the market. However, the growth of the drone market may be hindered by way of technological constraints such as limited endurance, Swap challenges, and the presence of non-uniform laws and regulations that could limit the usage of such systems in the airspace of specific nations.

### **3. PRODUCT DESCRIPTION**

#### **3.1 PRODUCT USES**

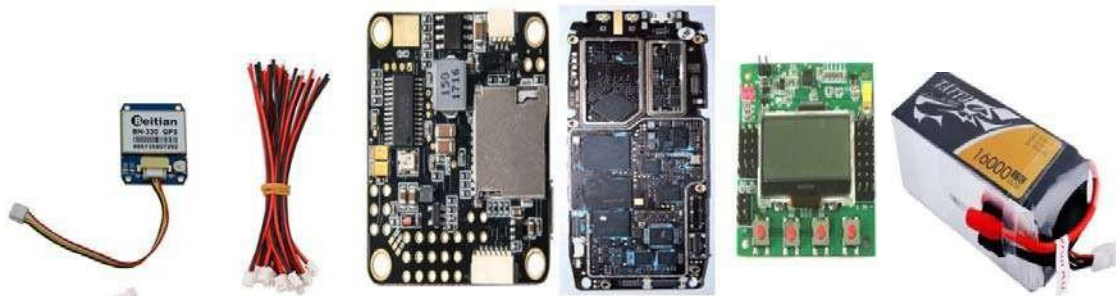
Drones can be used in Aerial photography, shipping, and delivery, geographic mapping, disaster management, precision agriculture, search and rescue, weather forecast, wildlife monitoring, law enforcement, entertainment, etc.

#### **3.2 RAW MATERIAL REQUIREMENT**

- **Frame-** Plastic or carbon fibre frames can be used. Fibre tubes are used for landing gears. Arms and propellers are made up of plastic and fibre.



- **Electrical components-** Motor, Battery, Battery contacts, Switches, Display, Sensor board, LED, Displays, Charging port jack, Heat sink, Cooling fan, Controller PCB, etc.



- **Other-** Landing pad, Rotor, Solder wire, Solder paste, Solder flux, wires, Screws, etc.



### 3.4 MANUFACTURING PROCESS

This process can be broken down into the following steps-

1. Raw material procurement
2. Assembly
3. Testing

#### **4. PROJECT COMPONENTS**

##### **4.1 Plant & Machinery**

<b>Sr. No.</b>	<b>Plant &amp;Machinery / Equipment</b>
1.	Assembly tools
2.	Temperature-controlled soldering station
3.	Testing equipment's
4.	Miscellaneous



<b>PROJECTED PROFITABILITY STATEMENT</b>					(in Lacs)
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
Capacity Utilisation %	<b>45%</b>	<b>50%</b>	<b>55%</b>	<b>60%</b>	<b>65%</b>
<b><u>SALES</u></b>					
<b>Gross Sale</b>					
Drone	24.75	31.24	36.11	41.39	47.10
<b>Total</b>	<b>24.75</b>	<b>31.24</b>	<b>36.11</b>	<b>41.39</b>	<b>47.10</b>
<b><u>COST OF SALES</u></b>					
Raw Material Consumed	13.39	15.62	18.04	20.67	23.52
Electricity Expenses	1.08	1.44	1.58	1.73	1.87
Depreciation	1.30	1.11	0.95	0.81	0.69
Wages & labour	3.00	3.60	4.32	4.97	5.71
Repair & maintenance	0.25	0.31	0.36	0.41	0.47
Consumables & Packaging	0.37	0.47	0.54	0.62	0.71
<b>Cost of Production</b>	<b>19.39</b>	<b>22.55</b>	<b>25.80</b>	<b>29.21</b>	<b>32.97</b>
<b>Add: Opening Stock</b>	<b>-</b>	<b>1.62</b>	<b>1.88</b>	<b>2.15</b>	<b>2.43</b>
<b>Less: Closing Stock</b>	<b>1.62</b>	<b>1.88</b>	<b>2.15</b>	<b>2.43</b>	<b>2.75</b>
Cost of Sales	17.77	22.29	25.53	28.93	32.66
<b>GROSS PROFIT</b>	<b>6.98</b>	<b>8.95</b>	<b>10.58</b>	<b>12.46</b>	<b>14.45</b>
<b>Gross Profit Ratio</b>	<b>28.18%</b>	<b>28.64%</b>	<b>29.30%</b>	<b>30.11%</b>	<b>30.67%</b>
Salary to Staff	1.44	1.73	2.07	2.49	2.99
Interest on Term Loan	0.80	0.70	0.50	0.31	0.11
Interest on working Capital	0.28	0.28	0.28	0.28	0.28
Rent	1.20	1.32	1.45	1.60	1.76
Selling & Administrative Exp.	0.50	0.94	1.44	1.86	2.36
<b>TOTAL</b>	<b>4.21</b>	<b>4.96</b>	<b>5.75</b>	<b>6.53</b>	<b>7.48</b>
NET PROFIT	2.77	3.98	4.83	5.94	6.97
Taxation	0.01	0.07	0.12	0.22	0.32
PROFIT (After Tax)	2.76	3.91	4.72	5.72	6.64
<b>Net Profit Ratio</b>	<b>11.13%</b>	<b>12.52%</b>	<b>13.06%</b>	<b>13.81%</b>	<b>14.10%</b>

<b>PROJECTED BALANCE SHEET</b>					
					(in Lacs)
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
<b><u>Liabilities</u></b>					
<b>Capital</b>					
Opening balance		2.43	3.84	5.56	7.28
Add: - Own Capital	1.18				
Add: - Retained Profit	2.76	3.91	4.72	5.72	6.64
Less: - Drawings	1.50	2.50	3.00	4.00	4.50
<b>Closing Balance</b>	<b>2.43</b>	<b>3.84</b>	<b>5.56</b>	<b>7.28</b>	<b>9.42</b>
Term Loan	7.20	5.40	3.60	1.80	-
Working Capital Limit	2.50	2.50	2.50	2.50	2.50
Sundry Creditors	0.45	0.52	0.60	0.69	0.78
Provisions & Other Liability	1.00	1.20	1.44	1.73	2.07
<b>TOTAL:</b>	<b>13.58</b>	<b>13.46</b>	<b>13.70</b>	<b>13.99</b>	<b>14.78</b>
<b><u>Assets</u></b>					
<b>Fixed Assets (Gross)</b>					
Gross Dep.	1.30	2.41	3.36	4.17	4.86
<b>Net Fixed Assets</b>	<b>7.70</b>	<b>6.59</b>	<b>5.64</b>	<b>4.83</b>	<b>4.14</b>
<b>Current Assets</b>					
Sundry Debtors	1.24	1.56	1.81	2.07	2.36
Stock in Hand	2.51	2.92	3.35	3.81	4.32
Cash and Bank	2.13	2.39	2.90	3.28	3.97
<b>TOTAL:</b>	<b>13.58</b>	<b>13.46</b>	<b>13.70</b>	<b>13.99</b>	<b>14.78</b>

<b>PROJECTED CASH FLOW STATEMENT</b>					<b>(in Lacs)</b>
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
<b><u>SOURCES OF FUND</u></b>					
Own Margin	1.18				
Net Profit	2.77	3.98	4.83	5.94	6.97
Depreciation & Exp. W/off	1.30	1.11	0.95	0.81	0.69
Increase in Cash Credit	2.50	-	-	-	-
Increase In Term Loan	8.10	-	-	-	-
Increase in Creditors	0.45	0.07	0.08	0.09	0.09
Increase in Provisions & Oth liabilities	1.00	0.20	0.24	0.29	0.35
	-				
<b>TOTAL:</b>	<b>17.29</b>	<b>5.37</b>	<b>6.10</b>	<b>7.12</b>	<b>8.10</b>
<b><u>APPLICATION OF FUND</u></b>					
Increase in Fixed Assets	9.00				
Increase in Stock	2.51	0.41	0.43	0.46	0.50
Increase in Debtors	1.24	0.32	0.24	0.26	0.29
Repayment of Term Loan	0.90	1.80	1.80	1.80	1.80
Drawings	1.50	2.50	3.00	4.00	4.50
Taxation	0.01	0.07	0.12	0.22	0.32
<b>TOTAL:</b>	<b>15.16</b>	<b>5.11</b>	<b>5.59</b>	<b>6.74</b>	<b>7.41</b>
Opening Cash & Bank Balance	-	2.13	2.39	2.90	3.28
Add : Surplus	2.13	0.26	0.51	0.38	0.69
Closing Cash & Bank Balance	<b>2.13</b>	<b>2.39</b>	<b>2.90</b>	<b>3.28</b>	<b>3.97</b>

REPAYMENT SCHEDULE OF TERM LOAN							
						Interest	11.00%
Year	Particulars	Amount	Addition	Total	Interest	Repayment	Closing Balance
<b>1st</b>	Opening Balance						
	1st month	-	8.10	8.10	-	-	8.10
	2nd month	8.10	-	8.10	0.07	-	8.10
	3rd month	8.10	-	8.10	0.07	-	8.10
	4th month	8.10	-	8.10	0.07		8.10
	5th month	8.10	-	8.10	0.07		8.10
	6th month	8.10	-	8.10	0.07		8.10
	7th month	8.10	-	8.10	0.07	0.15	7.95
	8th month	7.95	-	7.95	0.07	0.15	7.80
	9th month	7.80	-	7.80	0.07	0.15	7.65
	10th month	7.65	-	7.65	0.07	0.15	7.50
	11th month	7.50	-	7.50	0.07	0.15	7.35
	12th month	7.35	-	7.35	0.07	0.15	7.20
					<b>0.80</b>	<b>0.90</b>	
<b>2nd</b>	Opening Balance						
	1st month	7.20	-	7.20	0.07	0.15	7.05
	2nd month	7.05	-	7.05	0.06	0.15	6.90
	3rd month	6.90	-	6.90	0.06	0.15	6.75
	4th month	6.75	-	6.75	0.06	0.15	6.60
	5th month	6.60	-	6.60	0.06	0.15	6.45
	6th month	6.45	-	6.45	0.06	0.15	6.30
	7th month	6.30	-	6.30	0.06	0.15	6.15
	8th month	6.15	-	6.15	0.06	0.15	6.00
	9th month	6.00	-	6.00	0.05	0.15	5.85
	10th month	5.85	-	5.85	0.05	0.15	5.70
	11th month	5.70	-	5.70	0.05	0.15	5.55
	12th month	5.55	-	5.55	0.05	0.15	5.40
					<b>0.70</b>	<b>1.80</b>	
<b>3rd</b>	Opening Balance						
	1st month	5.40	-	5.40	0.05	0.15	5.25
	2nd month	5.25	-	5.25	0.05	0.15	5.10
	3rd month	5.10	-	5.10	0.05	0.15	4.95
	4th month	4.95	-	4.95	0.05	0.15	4.80
	5th month	4.80	-	4.80	0.04	0.15	4.65
	6th month	4.65	-	4.65	0.04	0.15	4.50
	7th month	4.50	-	4.50	0.04	0.15	4.35
	8th month	4.35	-	4.35	0.04	0.15	4.20
	9th month	4.20	-	4.20	0.04	0.15	4.05
	10th month	4.05	-	4.05	0.04	0.15	3.90
	11th month	3.90	-	3.90	0.04	0.15	3.75
	12th month	3.75	-	3.75	0.03	0.15	3.60
					<b>0.50</b>	<b>1.80</b>	

<b>4th</b>	Opening Balance					
	1st month	3.60	-	3.60	0.03	3.45
	2nd month	3.45	-	3.45	0.03	3.30
	3rd month	3.30	-	3.30	0.03	3.15
	4th month	3.15	-	3.15	0.03	3.00
	5th month	3.00	-	3.00	0.03	2.85
	6th month	2.85	-	2.85	0.03	2.70
	7th month	2.70	-	2.70	0.02	2.55
	8th month	2.55	-	2.55	0.02	2.40
	9th month	2.40	-	2.40	0.02	2.25
	10th month	2.25	-	2.25	0.02	2.10
	11th month	2.10	-	2.10	0.02	1.95
	12th month	1.95	-	1.95	0.02	1.80
					<b>0.31</b>	<b>1.80</b>
<b>5th</b>	Opening Balance					
	1st month	1.80	-	1.80	0.02	1.65
	2nd month	1.65	-	1.65	0.02	1.50
	3rd month	1.50	-	1.50	0.01	1.35
	4th month	1.35	-	1.35	0.01	1.20
	5th month	1.20	-	1.20	0.01	1.05
	6th month	1.05	-	1.05	0.01	0.90
	7th month	0.90	-	0.90	0.01	0.75
	8th month	0.75	-	0.75	0.01	0.60
	9th month	0.60	-	0.60	0.01	0.45
	10th month	0.45	-	0.45	0.00	0.30
	11th month	0.30	-	0.30	0.00	0.15
	12th month	0.15	-	0.15	0.00	-
					<b>0.11</b>	<b>1.80</b>
	DOOR TO DOOR	60	MONTHS			
	MORATORIUM PERIOD	6	MONTHS			
	REPAYMENT PERIOD	54	MONTHS			

<b><u>CALCULATION OF D.S.C.R.</u></b>					
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
CASH ACCRUALS	4.06	5.02	5.66	6.53	7.34
Interest on Term Loan	0.80	0.70	0.50	0.31	0.11
<b>Total</b>	<b>4.85</b>	<b>5.72</b>	<b>6.17</b>	<b>6.83</b>	<b>7.44</b>
<b><u>REPAYMENT</u></b>					
Instalment of Term Loan	0.90	1.80	1.80	1.80	1.80
Interest on Term Loan	0.80	0.70	0.50	0.31	0.11
Total	1.70	2.50	2.30	2.11	1.91
<b>DEBT SERVICE COVERAGE RATIO</b>	<b>2.86</b>	<b>2.29</b>	<b>2.68</b>	<b>3.25</b>	<b>3.90</b>
<b>AVERAGE D.S.C.R.</b>	<b>2.95</b>				

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