Back

Reference No.:- IDEAHR023552

1. Details of Incubatee:

1.1 Details of the Host Institute (HI)	K R Mangalam University , Sohna Rural, Haryana 122103 , 01148884888 , vc@krmangalam.edu.in , 9811074867	1.2 Name of the Business Incubator (BI)	Anshika Prakash , Associate Professor , anshika.prakash@krmangalam.edu.in , 8791558236
1.3 Category of the Incubatee	Student	1.4 Incubatee Name	Shivani Sharma
1.5 State	HARYANA	1.6 District	GURUGRAM
1.7 Email ID	shivani.sharma.22ece@bmu.edu.in	1.8 Mobile Number	8588074592
1.9 Category	General	1.10 Gender	Female
1.11 Address	17B second floor SS Almeria Sector 84, Gurgaon, Haryana, 122001		

2. Details of Idea:

2.1 Title of proposed idea/innovation	Sustainable Sunflower-Shaped Solar Panel System with PWM Charge Controller
2.2 Whether the idea involves use of existing intellectual property or not, give brief detail there of	The sunflower-shaped solar panel system incorporates existing solar panel technology, PWM charge controllers, and STM32-based control systems. While the concept combines these components, the unique design and integration of a self-cleaning mechanism, along with aesthetic and functional elements, represents an innovative approach to sustainable energy solutions.
2.3 Briefly explain newness/uniqueness of the innovation	Our project introduces an innovative sunflower-shaped solar panel system designed to maximize sunlight capture through intelligent orientation. The STM32-based control system efficiently manages the panel&#';s self-cleaning mechanism and energy flow. The system incorporates a brush-based cleaning mechanism, eliminating the need for water, making it environmentally friendly and low-maintenance. A PWM charge controller optimizes energy storage and usage, ensuring peak efficiency. In addition to improving energy output, the project enhances sustainability in public spaces like parks or residential societies by integrating a sitting area beneath the panels, equipped with charging ports, Wi-Fi connectivity, and CCTV cameras. This multi-functional design promotes green energy use while providing useful amenities, making the area more sustainable and aesthetically pleasing.

2.4 Concept & Objective	The main objective is to design a highly efficient solar panel system capable of self-maintenance, reducing the impact of environmental factors like dust accumulation. The system is also equipped with a PWM charge controller to optimize energy storage and utilization. The primary objective of the Sunflower-Shaped Solar Panel System with PWM Charge Controller is to design and develop an innovative solar energy system that maximizes energy efficiency, enhances sustainability, and provides affordable, reliable power, particularly in remote or underserved areas. The specific objectives of this project are as follows: 1. Maximize Solar Energy Harvesting 2. Improve Energy Management with PWM Charge Controller 3. Promote Sustainable Energy Solutions 4. Increase Accessibility to Clean Energy 5. Support Environmental Conservation and Aesthetic Design 6. Contribute to Global Renewable Energy Goals
2.5 Specify the potential areas of application in Industry/market in brief	The Sunflower-Shaped Solar Panel System with PWM Charge Controller has diverse applications across various industries and markets due to its innovative design, efficiency, and adaptability. The system&#';s ability to maximize solar energy harvesting, coupled with its sustainable and scalable design, makes it suitable for numerous use cases, particularly in the following sectors: 1. Agriculture and Farming: Solar-powered irrigation systems, greenhouse energy supply, remote farm monitoring, and agricultural processing units. 2. Residential Solar Power: Home energy generation and storage for off-grid or hybrid solar systems. 3. Commercial and Industrial Facilities: Solar energy generation for manufacturing plants, warehouses, retail stores, and office buildings. 4. Urban and Public Infrastructure: Powering public buildings, parks, transportation hubs, and street lighting. 5. Remote and Rural Areas: Energy solutions for off-grid rural areas, remote communities, and islands.. 6. Educational Institutions and Research Facilities: Providing renewable energy to schools, universities, research centres, and laboratories. 7. Tourism and Hospitality: Powering eco-friendly resorts, hotels, and remote lodges. 8. Electric Vehicle Charging Stations: Solar-powered EV charging stations in urban, rural, or highway locations. 9. Smart Cities: Integrating solar energy into smart city initiatives, including smart grids, lighting, and sensors.
2.6 Briefly provide the market data for the potential idea/ innovation	The market potential for the Sustainable Sunflower-Shaped Solar Panel System with PWM Charge Controller is significant due to the growing global demand for renewable energy and sustainable solutions. With increasing awareness of climate change and the push for green energy, solar power continues to expand as a major energy source. Key market opportunities include: Urban Spaces Residential Societies: Parks, public spaces, and gated communities seeking to enhance sustainability while providing amenities like charging ports and Wi-Fi. Commercial and Industrial Facilities: Businesses and industries aiming to reduce energy costs and improve green credentials can benefit from the increased efficiency of solar tracking systems. Smart Cities Eco-friendly Infrastructure: Governments and organizations are investing in smart city projects, where sustainable energy solutions integrated with public services, such as seating areas and surveillance, offer a unique selling point. Off-grid and Remote Areas: The self-sustaining nature of the system makes it ideal for remote locations that lack access to a reliable power grid.

2.7 Name and details of Mentors	NA	2.8 Experience and Qualification of Mentors	NA
2.9 Contact Details of Mentors	NA	2.10 Current Development Status of Innovation	The sunflower-shaped solar panel system is in the prototype phase, with the STM32-based control system, self-cleaning mechanism, and PWM charge controller successfully integrated. Testing and optimization for energy efficiency are ongoing.

View Details

Particular/Item (As per the scheme guidelines)	Amount GOI assistance (Rs. In lakh)	Incubatee share (Rs. In lakh)
Technology related Expenditure towards machine usage charges etc., Electricity charges, Procurement of raw material , testing/Calibration charges, other charges essential for development of idea **Max (10.00) lakh.**	10.000	0.000
Charges for mentor/handholding supporting team **Max (3.00) lakh.**	3.000	0.000
Travelling Expenses or any other item not coverd as above may be allowed as per need for development of the idea **Max (2.00) lakh.**	2.000	0.000

Total idea/project cost (Rs in lakh):	Total GOI Assistance required (Rs in lakh):	Total Incubatee share (Rs in lakh):
15.000	15.000	0.000

Ref. No.	INC24DHR051176	**5. Summary of the idea. This is the section reviewers read to understand the technical solution. Please state the solution clearly. Reviewers may ask: What is the actual technical advancement or improvement provided by this solution?**	The Sunflower-Shaped Solar Panel System integrates intelligent orientation for maximum sunlight capture, a brush-based self-cleaning mechanism, and a PWM charge controller for efficient energy management. This innovative design enhances energy output, promotes sustainability, and improves accessibility to clean energy while providing additional public amenities such as seating, charging, and Wi-Fi.
(a) Is it a new concept?		YES	

lute letterhead clearly
ng affiliations, postal
email id, phone number

Host Institute Name
Host Institute Address

Phone: Host Institute Number
Email: Host Institute
Website: Host Institute website

To

Date: -- --

JS (AFI)
O/o DC (MSME), M/o MSME,
Govt. of India
Nirman Bhawan, New Delhi

Subject : Request for release of fund for 1st installment of MSME Idea Hackathon 3.0 under "**MSME Innovative Scheme**"

Dear Sir/Madam,

With reference to the above subject, we request you to release the 1st installment of idea approved by PMAC with **Incubatee Name** and **Idea Reference Number** under for 70% of the first installment of "**MSME Innovative Scheme, MSME Idea Hackathon 3.0**".

Thanks and Regards
XXXXXX
Head of HI
Host Institute

(Affix Host Institute Seal)

	View Details
13.How is This Project Made and Used: Please describe in as much detail as possible how the innovation is implemented. This includes details on how you actually make, assemble, synthesize, or build the solution and details on how the solution is used once it is made. Reviewers will ask: How does the technical innovation actually work – or – what is the detailed process to achieve the technical innovation? Please help convince the reviewers with supporting statements using as much of the following that is available: your thoughts, logic, supporting literature, and/or experiments.	The innovation involves assembling a sunflower-shaped solar panel with an STM32-based control system, integrating a brush-based self-cleaning mechanism, PWM charge controller for energy management, and amenities for public spaces.
Upload Block diagram/ flow chart/ Circuit Diagram/Pictures	View/Download
Uploaded Minutes of the evaluation Committee	View/Download
Student ID with duration of course and bonafide certificate by HI certifying that the student is currently enrolled in the course	View/Download

Application Remarks

ction	Date	Status	Remark
MAC	01/Jul/2025 03:20:45 PM	Approved By PMAC	The 9th PMAC held on 24/06/2025 has approved this idea for GoI grant. Please check your mail and do the needful as instructed on priority basis. This may be treated as most urgent. View/Download

I declare that:

1. I have read the entire scheme guidelines and shall abide by all the requirements stipulated therein for seeking financial assistance.
2. I hereby declare that information given above is true to the best of my Knowledge and that I have not withheld/distorted any material fact.
3. Any information/ documents that may be required to be verified shall be provided immediately before the concerned authority.
4. I hereby declare that I have not availed any financial assistance for this purpose from any other scheme from any Central/ State govt. agency.
5. In case the Idea is approved, Host Institute would undertake to make facilities available to carry out the development arrange for the submission of periodic progress reports and other information that may be required by the Ministry.
6. I certify that the accounts of the funds received and spent will be kept and made available on demand, as per scheme guidelines
7. I certify that the funds will be used only for Idea development as per activities defined in Scheme Guidelines & no funds out of this grant will be utilized for any other activity/production purposes.

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