7.4 Energy and Community

7.4.5. Assistance for start-ups that foster and support a low-carbon economy/technology

7.4.5 - Does your university as a body provide assistance for start-ups that foster and support a low-carbon economy/technology?

Yes, **Our university actively fosters start-ups that advance a low-carbon economy and climate-friendly technologies.** Through **incubation centres, IIC/EDC units, and innovation hubs**, we provide **structured mentoring, prototype support, and access to laboratories** specifically for **renewable-energy, energy-efficiency, and green-technology ventures**. The university also offers **funding linkages**, industry partnerships, and expert guidance to help these start-ups move toward commercialization. Regular **capacity-building programs, workshops, and sustainability-focused training** strengthen the green entrepreneurship ecosystem. **By supporting clean-tech innovators, the university directly contributes to SDG 7 (Affordable & Clean Energy), SDG 9 (Industry, Innovation & Infrastructure), and SDG 13 (Climate Action)** and plays a proactive role in shaping a **low-carbon future**.

Policy:

St. PETER'S INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Deemed to be University U/S 3 of the UGC Act,1956)
AVADI, Chennai – 600 054. Tamil Nadu.
Phone: 044-26558080-84
E-mail: registrar@spiher.ac.in
Website:www.spiher.ac.in

INNOVATION & STARTUP POLICY

Policy Created on:	**27/10/2021**	**Approved by:**
Revision 1:	**01/02/2024**	**REGISTRAR**

Registrar
St. Peter's Institute of Higher Education and Research
Deemed to be University U/S 3 of the UGC Act, 1956
Avadi, Chennai - 600 054.

SDGs Directly Supported:

- **SDG 4 – Quality Education**
- **SDG 8 – Decent Work and Economic Growth**
- **SDG 9 – Industry, Innovation and Infrastructure**
- **SDG 17 – Partnerships for the Goals**

SDGs Indirectly Supported:

- **SDG 1 – No Poverty**
- **SDG 3 – Good Health and Well-being**
- **SDG 5 – Gender Equality**
- **SDG 7 – Affordable and Clean Energy**
- **SDG 11 – Sustainable Cities and Communities**
- **SDG 12 – Responsible Consumption and Production**
- **SDG 13 – Climate Action**
- **SDG 16 – Peace, Justice and Strong Institutions**

St. PETER'S INSTITUTE OF HIGHER EDUCATION AND RESEARCH

(Deemed to be University U/S 3 of the UGC Act,1956)
Avadi, Chennai – 600 054. Tamil Nadu.
Phone: 044-26558080-84/26558090 Fax. 044-26555430
E-mail: registrar@spiher.ac.in
Website: www.spiher.ac.in

INSTITUTE INNOVATION AND STARTUP POLICY 2024

INSTITUTE INNOVATION & STARTUP POLICY 2024

1. Preamble

As India aspires to become a 5 trillion-dollar economy in the near future, there is need for high quality technical human resource, capable of doing cutting edge research and innovation, and high-tech entrepreneurship. The MHRD's (now MoE) Innovation Cell and AICTE have brought out the 'National Innovation and Startup Policy 2022' for students and faculty. It provides broad guidelines to encourage faculty, staff and students to actively pursue the path of innovation and entrepreneurship.

St. Peter's Institute of Higher Education and Research, a deemed to be university, was established in 2008 with the approval of UGC and MHRD. The institution aims to impart high quality education and research to students through undergraduate, post graduate and research programmes to mould them for serving the society with integrity, commitment and involvement. It provides a robust innovation eco system with necessary platforms to develop innovation and entrepreneurship skills among students and faculty.

This policy document aims to outline the efforts that can be taken by the institute to promote innovation and entrepreneurship among the students and faculty. It has been prepared in line with the National Innovation and Startup Policy 2019.

2. Vision of the Policy

To encourage Innovative and Entrepreneurial ideas among students and faculty by creating a vibrant and conducive Startup culture and Innovation eco system in and around the institute through well-conceived policy interventions and strategic investments, in order to create multiple economic hubs and contribute for self-reliant India.

3. Innovation Eco System

Innovation Eco System of St. Peter's Institute of Higher Education and Research (SPIHER) acts as the driver of innovation. The main objective of the system is to promote creativity and innovation among students and faculty, and facilitate development of innovative systems, processes, products, technologies and services for the benefit of the society. It serves to connect all the stakeholders of innovation including UG and PG students, researchers, faculties, entrepreneurs, business developers and other technical service providers, providers of skills training and professional development, and IPR support. The institute has established the following facilities as a part of the Innovation Eco System.

- Centre for Innovation – promotes innovation policies and overall guidance.
- Institution Innovation Council (approved by MHRD IC) – promotional activities through various programmes including industry leaders.

- Technology Business Incubator (approved by DST) – Incubation of innovative ideas
- SPIHER – MSME Business Incubator (approved by Min. of MSME) - Incubation of innovative ideas for technology development for commercialization, and promotion of startups.
- Entrepreneurship Development Cell – Established by the Institute, it works in close association to inculcate entrepreneurial skills among students.

Fig.1 Innovation Eco System of SPIHER

The ecosystem enables stakeholders interact effectively to maximise the economic impact and potential in research and innovation. It is dynamic and flexible, allowing new entrants to become part of the ecosystem with minimal entry barriers. The innovation eco system has contributed potentially for innovation performance of the institute.

3.1 Institution Innovation Council (approved by MHRD IC)

The Institution Innovation Council was started in 2018 at the initiative of the Innovation Cell of the Ministry of Human Resource Development (now Ministry of Education), Government of India. The Council includes members from students, teachers, industry and Patent expert. A number of activities are conducted through this Council to motivate and promote creativity and innovation among students and teachers as given below.

- Webinars by Industry Leaders
- Workshops on IPR
- Workshops on entrepreneurship and innovation
- Hackathons for students
- Innovation challenge and business plan competition
- Field visit to incubation centre

The Council has been awarded maximum grading of 5 stars by MHRD IC for its performance during 2019-20. Four faculty have been trained as ambassadors in product design, product development, IPR and entrepreneurship. All these have helped in continuing to promote innovation and ideas towards technology development for commercialisation.

3.2 Technology Business Incubator (approved by DST)

Technology Business Incubator was started in 2009 with the approval of the Department of Science and Technology, Government of India, with a grant of Rs. 2.00 crores. Besides incubation activities, the incubator conducts several technical programmes like awareness camps, technology-based entrepreneurship development programmes and Faculty development programmes every year with funding by Entrepreneurship Development Institute of India.

3.3 SPIHER – MSME Business Incubator (approved by Min. of Micro, Small and Medium Entrepreneurs)

SPIHER – MSME Business Incubator was started in 2009 with the approval of the Ministry of Micro, Small and Medium Enterprises, Government of India. The incubator promotes emerging technological and knowledge-based innovative ventures. The scheme was enlarged with provision for seed capital towards startups and the incubator has been approved under the new scheme in 2019. The activities of the incubator include

- Guidance for grant-in-aid for technology development.
- Guidance for seed capital for startup.
- Mentoring support.
- Technical guidance through mentor.
- R&D support, testing where required.
- Linking with other R&D labs, industry where required.
- Guidance for IPR.
- Guidance for technology transfer.
- Training programmes and skill development.

The incubator promotes ideas in the following technology domains.

- Manufacturing Industry, Electronics & Communication, IoT
- Energy and Environment
- Construction
- Health care

Ten technologies have so far been developed with suitable grant for commercialisation through SPIHER – MSME Business Incubator. Four patents have been filed.

3.4 Entrepreneurship Development Cell

Entrepreneurship Development Cell is responsible for inculcating entrepreneurship skills among students. Awareness programmes and faculty development programmes on entrepreneurship development are conducted for students and faculty. Events like e-bazaars are conducted in which students exhibit the innovative and business talents. The innovation eco system of the institute is also explained to the students and faculty. The Cell also provides mentoring in entrepreneurship including developing business plans and conducting market survey.

4 Innovation and Startup Policy

4.1 Strategies and Governance

i) A senior faculty has been nominated as Nodal Officer to coordinate with various stake holders for implementing the Policy.

ii) There should be a Resource mobilization plan of the institute for supporting pre-incubation, incubation infrastructure and facilities. This can be reviewed periodically.

iii) Investment in the entrepreneurial activities should be a part of the institutional financial strategy. A minimum 1% fund of the total annual budget of the institution may be allocated for funding and supporting innovation and startups related activities through creation of separate 'Innovation fund'. The strategy should also involve raising funds from diverse sources.

iv) For expediting the decision making, hierarchical barriers should be minimized.

v) Importance of innovation and entrepreneurial agenda should be known across the institute and should be promoted and highlighted in institutional programs such as conferences, workshops, convocations, etc.

vi) Product to market strategy for startups should be developed by the institute on case to case basis.

vii) Institute should be the driving force in developing entrepreneurship culture in its vicinity (regional, social and community level). This shall include giving opportunity for regional startups, provision to extend facilities for outsiders and active involvement of the institute in defining strategic direction for local development.

4.2 Startups Enabling Institutional Infrastructure

i) The goal of the effort should be to link INNOVATION to ENTERPRISES to FINANCIAL SUCCESS.

ii) The Pre-Incubation/Incubation facility should be accessible 24x7 to students, staff and faculty of all disciplines and departments across the institution.

iii) The institute may offer mentoring and other relevant services through Pre-incubation/Incubation units in-return for fees, equity sharing and (or) zero payment basis.

iv) A mentor board may be created which can meet twice in a year and review the implementation of the policy including product development.

v) A Corporate Advisory Board can be constituted which can help both innovation and placement.

4.3 Nurturing Innovations and Startups

i) The institute should offer access to pre-incubation and Incubation facility to startups by students, staff and faculty for mutually acceptable time-frame.

ii) The institute should allow licensing of IPR from institute to startup. Ideally, students and faculty members intending to initiate a startup based on the technology developed or co-developed by them or the technology owned by the institute, should be allowed to take a license on the said technology on easy term, either in terms of equity in the venture and/ or license fees and/ or royalty to obviate the early stage financial burden.

iii) Students entrepreneurs shall be allowed to sit for the examination, even if their attendance is less than the minimum permissible percentage, with due permission from the institute.

iv) The institute shall allow the students to take a semester/year break (or even more depending upon the decision of review committee constituted by the institute) to work on their startups and re-join academics to complete the course. Student entrepreneurs may earn academic credits for their efforts while creating an enterprise.

v) In return of the services and facilities, the institute may take 2% to 9.5% equity/ stake in the startup/ company, based on brand used, faculty contribution, support provided and use of institute's IPR (a limit of 9.5% is suggested so that institute has no legal liability arising out of startup. The institute should normally take much lower equity share, unless its full-time faculty/ staff have substantial shares).

4.4 Product Ownership Rights for Technologies Developed at Institute

i) When institute facilities / funds are used substantially or when IPR is developed as a part of curriculum/ academic activity, IPR is to be jointly owned by inventors and the institute. Inventors and institute could together license the product / IPR to any commercial organisation, with inventors having the primary say. License fees could be either / or a mix of

- Upfront fees or one-time technology transfer fees

- Royalty as a percentage of sale-price
- Shares in the company licensing the product

ii) The institute shall support financially to meet the charges for filing and processing of patents.

iii) Institute IPR cell or incubation center will be a coordinator and facilitator for providing services to faculty, staff and students. It will have no say on how the invention is carried out, how it is patented or how it is to be licensed.

iv) Any dispute should be amicably resolved through a committee.

v) Courses shall be introduced on entrepreneurship and startups at UG and PG levels in all programmes.

vi) Interdisciplinary research and publication on startup and entrepreneurship should be promoted by the institute.

4.5 Organizational Capacity, Human Resources and Incentives

i) Faculty should be periodically trained in entrepreneurship, skill development and startups. Some of the relevant faculty members with prior exposure and interest can be deputed for training to promote Innovation & Entrepreneurship.

ii) Periodically, external subject matter experts such as guest lecturers or alumni can be engaged for strategic advice and bringing in skills which are not available internally.

iii) Suitable reward system for the faculty may be introduced for entrepreneurial activities in the form of reduced teaching loads, awards, trainings, etc.

4.6 Creating Innovation Pipeline and Pathways for Entrepreneurs at Institute Level

The following mechanisms may be devised at institution level.

i) Spreading awareness among students, faculty and staff about the value of entrepreneurship and its role in career development or employability should be a part of the institutional entrepreneurial agenda.

ii) Students should be encouraged to develop entrepreneurial mindset through experiential learning by exposing them to training in cognitive skills (e.g. design thinking, critical thinking, etc.), by inviting first generation local entrepreneurs or experts to address young minds. Initiatives like idea and innovation competitions, hackathons, workshops, bootcamps, seminars, conferences, exhibitions, mentoring by academic and industry personnel, throwing real life challenges, awards and recognition can be routinely organized.

iii) Institute can have a data bank of alumni entrepreneurs who can be utilized for motivating and mentoring the students.

iv) Institute can start annual 'Innovation and Entrepreneurship Award' to recognize outstanding ideas, successful enterprises and contributors for promoting innovation and enterprises ecosystem within the institute.

The policy may be reviewed every year and suitable amendments may be made where required.

01.02.2024

REGISTRAR

Registrar
St. Peter's Institute of Higher Education and Research
(Deemed to be University U/S 3 of the UGC Act, 1956)
Avadi, Chennai-600 054.

Startup Name: THENNAL AIR FILTERS PRIVATE LIMITED

Mr. PONRAJ RAVI RAMKUMAR, Director

Transforming environmental sustainability through innovative carbon capture technologies.

TITLE: Removal of CO2 using Direct Air Carbon Capture Techniques

Incubation Agreement:

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு TAMILNADU 14 JUN 2024

Thennal Air Filters PVT LTD

DL 509602

S. KAVITHA
STAMP VENDOR
231, M.K.N ROAD, ALANDUR

INCUBATION AGREEMENT

BETWEEN

St. PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR

AND

M/s THENNAL AIR FILTERS PRIVATE LIMITED

This Incubation Agreement is executed at Chennai on this **23.05.2025.**

1. **St. PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR**, a company registered under THE TAMILNADU SOCIETIES REGISTRATION ACT, 1975 (TAMIL NADU ACT 27 OF 1975) (Sl.No: 53/2009) with its registered office at Tonakela Camp Road, Avadi, Chennai - 600054, (Hereinafter called as SPEC-TBI and represented by its Chief Executive Officer and authorized signatory as the FIRST PARTY)

AND

2. **M/s THENNAL AIR FILTERS PRIVATE LIMITED** is a company with its registered office, No 4/37, 16th Street, Thillai Ganga Nagar, Nanganallur, Chennai – 600061, Tamil Nadu, INDIA (Hereinafter called as "**Incubatee**") Mobile No: 9710071471, email: thennalairfilters@gmail.com and represented through its authorized signatory Mr. Ponraj Ravi Ramkumar resident of India as the SECOND PARTY.

(Hence the both parties called as "Parties)

For THENNAL AIR FILTERS PVT LTD

Director

Recitals:

WHEREAS **St.PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR**, registered under 'SOCIETIES REGISTRATION ACT 1975' Sl.No: 53/2009, is an umbrella for promotion of entrepreneurship and provides support for technology – based entrepreneurship with the main objective of promoting partnership with new technology entrepreneurs and start-up companies and provide incubation services to different start-ups in the Knowledge and Technology based area and aims at creating a complete and comprehensive ecosystem to promote and nurture innovative enterprises.

WHEREAS **M/s THENNAL AIR FILTERS PRIVATE LIMITED** is desirous of availing the incubation services and has applied for the incubation services through its incubation application dated 23.05.2025 and its business plan [as appended in Schedule 1]

NOW THIS Incubation AGREEMENT WITNESS AS UNDER

Purpose of this Agreement:

The purpose of this Agreement is to have clear understanding between the Incubator and the Incubatee during the course of the association between them.

The Chief Executive Officer, **St. PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR** has approved the incubation application of **M/s THENNAL AIR FILTERS PRIVATE LIMITED** on the payment of Incubation Service charges and documentation charges for availing the incubation Services at ST.PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR pursuant to the detailed terms and conditions of this agreement.

Scope of Services:

SPEC-TBI will provide following incubation services to the Incubatee:-

1.1 Laboratory Infrastructure

SPEC-TBI will facilitate access to the Laboratory infrastructure of the Institute, St.PETER'S INSTITUTE OF HIGHER EDUCATION AND RESEARCH (SPIHER) on request of the Incubatee for specific activity as per the regulations of the Institute and the Incubator.

1.2 Other Services

The Incubation services will also include: -

- Pool of mentors, experts in technology, legal, financial and related matters (only advisory), with or without consideration
- Trainings and workshops
- Organizing events to help incubatee in networking and showcasing their technologies
- Meetings with visitors of SPIHER (such as alumni, Students, Research Scholars, VCs, industry professionals etc.)
- Other benefits of the Ecosystem

For THENNAL AIR FILTERS PVT LTD

Director

Technology Business Incubator
Avadi, Chennai
600 054

2.Rules and Regulations of Incubation:

Except as otherwise set forth in this agreement, the Incubatee hereby agrees to comply and follow the Rules and Regulations, framed by SPEC-TBI for the Incubation Services, specified in the detail and appended hereto Schedule 1 forms part of this agreement and unless other provided in this agreement, is hereby accepted by the Incubatee in its entirety and the Incubatee and its directors/Promoters hereby indemnify SPEC-TBI and undertake to remain responsible for all dues payable or losses suffered only on account of any act, negligence, default directly attributable on the part of the Incubatee and its Directors and employees and determined judicially to be so.

3.Period of Incubation

The total period of the incubation (hereafter called incubation period) will be for 1 (one) year from the date of signing. The incubation period can be extended only by SPEC-TBI at its sole discretion.

4.Termination of the agreement

SPEC-TBI reserves the right to terminate this agreement even during the Incubation Period and/or to deny access to the Incubation services and the premises, after giving a Fifteen days' notice, in the following circumstances: -

a) Where the incubatee violates any of the terms and conditions of this Agreement and Rules and regulations as may be framed by SPEC-TBI, from time to time; or

b) Commits any fraud, theft or any other offense punishable under law; or

c) Unsatisfactory performance of the incubatee as per the determination of the SPEC-TBI Advisory Board

d) Where the incubatee violates any rules and regulations of SPEC-TBI.

e) Such other circumstances as may deem fit in the interest of the parties to this agreement.

Upon termination of the Agreement, the Incubatee shall be prohibited from accessing the Incubation premises (If any) as set out in Schedule 2 and the Incubation Premises, provided by SPEC-TBI to the incubatee, will be sealed. This form of exit from the incubator would be considered an abnormal exit and SPEC-TBI will be entitled to forfeit the security deposit (If any), provided by the Incubatee.

5.Consideration

5.1 Amendments: SPEC-TBI may change the above rates from time to time at its sole discretion and date of implementation of the amended charges shall be applicable with immediate effect.

5.2 Consequences of default: In the event, if the Incubatee fails to make the half yearly/annually payment and/or other charges and rates for infrastructure and facilities, as mentioned above, continuously for a period of three months, this agreement shall be deemed to be terminated and the incubatee shall vacate the Incubation Premises (If any) immediately. Under these circumstances, SPEC-TBI reserves the right to seal the Incubation Premises of the Incubatee.

Technology Business Incubator

For THERMAL AIR FILTERS PVT LTD

Director

Exemption:-

However, the Chief Executive Officer of SPEC-TBI may at his sole discretion, based on the sufficient causes submitted by the Incubatee for the delay in making the half yearly/annually payment continuously for three months; or any other relevant reasons, may relax this delay and may permit the Incubatee to avail the incubation services on clearance of all the dues, charges, rates etc. of SPEC-TBI either with or without interest of 20% p.a. on such pending dues, as a penalty for the late payment, subject to such terms and conditions as may be imposed by him.

6. No Guarantee of Results

SPEC-TBI does not undertake responsibility, but shall endeavor for

a) Ensuring success of the Incubatee, its products/ process/ services or marketability.

b) Ensuring quality of support and services provided by SPEC-TBI to the complete satisfaction of the Incubatee or their promoters/ founders

c) Ensuring quality of services of the consultants engaged by the Incubatee through SPEC-TBI network. Incubatee will have to apply its judgment before getting in to a relationship with them

d) The incubatee companies agree that SPEC-TBI or their employees shall not be held liable for any reason on account of the above.

7. Separate Agreement fo. Seed Money Support \ Innovation Grant etc.

i. The Incubatee undertakes that SPEC-TBI does not guarantee for the Seed Money Support or any Grant or Debt support to the Incubatee with reference to the different Funding Programs of SPEC-TBI and that the Incubatee shall submit its application as per the eligibility criteria of the said programs and the selection of the Incubatee for the funding shall be completely independent, subject to the different eligibility norms of the said Funding programs and the Incubatee, on selection, shall have to execute separate agreements for these programs. However SPEC-TBI will update the Incubatee for these funding programs on a time to time basis

ii. Success Fees.

SPEC-TBI shall charge success fees of 10% on the total funds raised through Government Schemes/Angel/Venture/Private Entity with the support of SPEC-TBI.

8. Intellectual Property Rights

Any Intellectual property rights [IPRs] developed by the Incubatee during the Incubation period will be the property of the Incubatee only. If such IPRs are created only with the direct financial investment involvement of the SPEC-TBI than any agreement between the Incubatee and SPEC-TBI specifying the sharing rights for the IPRs will hold good. The Incubatee will be required to execute a separate agreement for licensing or assignment of any IPRs, under the shared ownership of which lies with SPEC-TBI.

9. Liability towards third party

Cannot be held legally responsible if the incubatee is involved in any litigation with a third party over any legal issue whatsoever, during the incubation period.

10.Indemnification

For THENNAL AIR FILTERS PVT LTD

Director

Technology Business Incubator

SPEC-TBI shall not accept any responsibility to compensate anyone as a result of any accident or damage (electrical / explosion etc.) taking place at the incubation premises or at any place, directly resulting from Incubatees activities. The victims could be the incubatee or their employees, other persons working in St.Peter's Institute of Higher Education and Research Campus premises or any visitors to the SPEC-TBI. Where any such accident or damage is directly attributable to the act or omission of the incubatee and determined judicially to be so, then paying any compensation to those who have suffered arising out of such a contingency shall be the sole responsibility of the incubatee. Where any such accident or damage is directly attributable to the act or omission of the incubate and determined judicially to be so, it shall be the responsibility of the incubatee alone to compensate for any loss caused to the property of the SPEC-TBI. Furthermore, SPEC-TBI shall be responsible for any accident or directly attributable to the act or omission of SPEC-TBI or its employees or its representatives that the Incubatee or his assignees/representatives might meet within the course of their work within the premises of SPEC-TBI or any premises of SPIHER Campus.

11. Assignment

The Incubatee and St. PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR shall have no right to assign their respective rights hereunder or transfer their respective rights and obligations, in whole or in part, to any third party.

12. Variation

Notwithstanding anything contained herein above or in the 'Rules and Regulations for the Incubation Agreement' annexed thereto, St. PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR shall/may with the consent of the Incubatee and after proper negotiations with the Incubatee amend the terms of this Agreement (or of any of the documents referred to in this Agreement) at such circumstances as it may deem fit and the Incubatee shall be bound by the said amendments. The amendments shall be applicable only after the Incubatee is notified of the amendments.

13. Entire Agreement

This Agreement together with any agreement specifically executed pursuant to this Agreement constitutes the whole and only agreement between the Parties relating to the Incubation Services. This Agreement supersedes and extinguishes any prior drafts, agreements, undertakings, representations, warranties and arrangements of any nature whatsoever, whether or not in writing, relating thereto.

14. Applicability of Laws:

This Agreement shall be construed, governed by, interpreted and applied in accordance with the Laws of India.

15. Settlement of Disputes

Any/all disputes between the Incubatee shall be referred for arbitration to the person(s) so nominated jointly SPEC-TBI and the Incubatee under the Indian Arbitration & Conciliation Act whose decision shall be final and binding upon the parties. The place of arbitration shall be Chennai.

16. Lien: SPEC-TBI shall have any lien on the assets (If any) of the Incubatee at the incubation centre till such time that the Incubatee clears all the outstanding dues.

In witness whereof parties hereto have signed this Incubation Agreement on the date and year mentioned hereinbefore.

For THENNAL AIR FILTERS PVT LTD

Director

For & on behalf of St. PETER'S ENGINEERING COLLEGE TECHNOLOGY BUSINESS INCUBATOR **Dr.L.MAHESH KUMAR** **Signature** **Name : Dr.L.MAHESH KUMAR** **Designation :** Chief Executive Officer **Date : 23.05.2025** **Place of signing:** SPEC TBI **Witness:-** 1.	For & on behalf of M/s THENNAL AIR FILTERS PRIVATE LIMITED **Mr. PONRAJ RAVI RAMKUMAR** **Signature** **Name: PONRAJ RAVI RAMKUMAR** **Designation: Director** **Date: 23.05.2025** **Place of signing:** SPEC TBI **Witness:-** 1. .....

Schedule 1

Rules and Regulations for the Incubation

1. **Eligibility for Incubation**

   The Incubatee has to be a registered company.
   It is hereby informed that Section 8 Company is not eligible to be incubated at SPEC-TBI.

2. **Proven track record of the promoters and Directors of the Incubatee**

   a) The Directors and promoters of the company must not have any default, showing in the data of Credit Information Bureau (India) Limited [CIBIL]. Default showing in CIBIL because of some disputes or genuine reasons can be relaxed by the Chief Executive Officer, SPEC-TBI subject to any condition that may be imposed by him.

   b) All the directors, in the board of directors, on the effective date of this agreement must be qualified under Companies Act 2013 or any other relevant Act or Laws of India.

   c) The directors and promoters must not have committed any criminal offense or must not be under any criminal prosecution under any laws of INDIA.

3. **Inspection rights:** SPEC-TBI has the right to inspect and examine the premises (If any) allotted to the Incubatee at any point of time during the incubation period/stay at Incubation Premises. On the completion of the Incubation or when the Incubatee leaves SPEC-TBI due to any reason, all the furniture, space and any other facilities provided shall be surrendered in good condition. All costs incurred for such restoration to good condition shall be borne by the Incubatee and in case, SPEC-TBI has to incur any further expenditure to get the equipment or the room back into good condition then the same shall be recovered from the Incubatee and/or its directors or promoters. All dues should be cleared by the Incubatee before it leaves the incubation otherwise, all outstanding dues shall be recovered from the Incubatee or its directors and/or promoters.

4. **Reporting requirements: -**

   The Incubatee shall be required to deliver the items mentioned below as part of the Incubation in accordance with the following provisions: -

   1.1 **Documentation.**

   The incubatee will be required to submit all the required documents in regards with the company such as a) certificate of incorporation, b) Memorandum of Association (MOA) c) Articles of Association (AOA) d) Shareholding pattern e) ID and Address proof of the directors and the promoters. The incubatee also agrees to intimate SPEC-TBI regarding any alteration in the MOA, AOA and the shareholding pattern as when the alteration is initiated.

   1.2 **Monthly report**

   The incubatee is required to submit its monthly report in terms of its financials; revenue generates, gross sales, potential customers/clients approached, foreign collaborations, contracts\MoU entered into, details of the employees, employees hired and fired, assets purchased or disposed of, status of the implementation of the business plan and its strategies, progress on the incubation projects or any other relevant ir formation prescribed by SPEC-TBI.

For THENNAL AIR FILTERS PVT LTD

Director

1.3 Mid Term Report

The incubatee is required to submit its unaudited/audited financial statement every six months within 7 days of the subsequent month.

1.4 Annual report

The incubatee is required to submit its financial statement and cash flow statement duly audited by the statutory auditors of the company with their Audit report and the report of the Board of Directors, with SPEC-TBI by the year. Incubatee is also required to ensure timely filings of the annual returns and the balance sheet with Income Tax Authorities and The Registrar of Companies within the prescribed time-limit as specified by Income Tax Act and Companies Act.

1.5 Participation in the Business review meetings\Diagnostic penal

The Incubatee hereby agrees to participate in the business review meetings, diagnostic penal as and when held by SPEC-TBI will intimate the Incubatee for these review meetings through a 6 (six) days advance notice, comprising the details and the presentations required to be submitted by the Incubatee. The venue, timings and the mode of attending the meeting (In Person or through Video Conferencing etc.) will be decided by SPEC-TBI.

1.6 Event based reporting:-

The Incubatee hereby agrees to keep SPEC-TBI informed for following events

- ✔Change of name of the company
- ✔Conversion from Private Limited to Public Limited company
- ✔Listing in any recognised stock exchange of India
- ✔Any major change in the business plan
- ✔Changes in the shareholding pattern
- ✔Changes in the board of directors

5. **INVESTMENT BY THIRD PARTIES:**

   The Incubatee shall keep SPEC-TBI informed in writing every time it proposes to bring in further investment or funds in, either from the existing shareholders or from third party investors at any time after the Effective Date of this agreement and will have to share the Term Sheet\Shareholder's Agreement\ Investment Agreement with SPEC-TBI and will have to obtain its approval before entering into the said agreement.

6. SPEC-TBI will not take any responsibility to provide any valuation certificate to the Incubatee and can only connect the Incubatee with different merchant bankers, certified valuers etc. in this regard, the consideration and procedure of valuation will be decided by the Incubatee itself only and SPEC-TBI will have no role to intervene in settling or negotiating the consideration payable by the Incubatee to these merchant bankers, certified valuers etc.

7. The Incubatee is required to abide by the laws of INDIA and will obtain all the trade licenses, permits and sanctions independently, wherever required, as prescribed under

For THENNAL AIR FILTERS PVT LTD

Director

the Indian Laws in order to run the business. SPEC-TBI is not responsible to get all these licenses and permits sanctioned from the Government.

8. **Exit**

The Incubatee will be required to leave the incubator under the following circumstances:

- ✔ After the completion of the Incubation including extended incubation period, if any.
- ✔ Underperformance or in-ability to perform business as evaluated and decided by SPEC-TBI on case to case basis
- ✔ Irresolvable promoters' disputes in opinion of SPEC-TBI on case to case basis
- ✔ Violation of any Statue, rules and regulations of SPEC-TBI in the opinion of SPEC-TBI on a case to case basis.
- ✔ When the company enters in an acquisition, merger or amalgamation deal or reorganization deal resulting in a substantial change in the profile of the company, its promoters, directors, shareholders, products or business plan.
- ✔ Incubatee plans for a public issue in the opinion of SPEC-TBI on case to case basis
- ✔ Change in promoters'/ founders' team in the opinion of SPEC-TBI on a case to case basis.
- ✔ Any change of more than 50% of equity ownership unless approved by SPEC-TBI, in the opinion of SPEC-TBI on case to case basis* (optional)
- ✔ Any other reason for which SPEC-TBI may find it necessary for an incubatee resident company to leave.
- ✔ In case an incubatee wants to leave the incubator for any reason with one month's notice.

Notwithstanding anything written anywhere, SPEC-TBI s decision in connection with the exit of an incubatee company shall be final and shall not be disputed by the incubatee.

9. The Incubatee is not authorized to use the logo of either SPEC-TBI unless a written permission is granted by SPEC-TBI or SPEC-TBI on this behalf
10. The Incubatee is required to abide by the rules and regulations of SPEC-TBI.
11. The Incubatee shall undertake Research & Development, Design/Testing, prototype development from Incubation premises but shall not carry out warehousing, storage, marketing sales or other commercial routine activity including fundraising in the SPEC-TBI campus.
12. The Incubatee should observe that noise levels are kept at minimum and no abnormal noise by any machine or by their employees or visitors should be made. Any complaint of high noise level will result in appropriate action by SPEC-TBI.

For THENNAL AIR FILTERS PVT LTD

Director

13. The Incubatee is required to observe health and safety standards. No hazardous material can be brought inside the SPEC-TBI campus\Incubation Premises without the prior approval of SPEC-TBI.

14. No Incubatee can display notices or signage except in the space or Boards provided for such signage by SPEC-TBI.

15. It is the responsibility of the Incubatee and their employees to use the common facilities e.g. common area, fax & other machines etc. with due diligence and care.

16. Incubatees required to keep SPEC-TBI informed about any visitor from abroad, foreign collaboration and/or foreign partner or director, and abide by the rules/procedures in vogue in SPEC-TBI.

Schedule 2

Facilities to the incubatees subject to the Rules and Regulations and as mentioned in clause 3 of the Agreement.

1. Mentoring and Nurturing Services by St Peters Institute of Higher Education and Research (Domain specific Experts) – on mutually agreed basis
2. Students Interns from St Peters Institute of Higher Education and Research - on mutually agreed basis
3. Marketing guidance
4. Assistance to apply for funding.
5. Participation in Guest Lectures/ Workshops organized by SPEC-TBI/ SPIHER (only in Free sessions)

For THENNAL AIR FILTERS PVT LTL

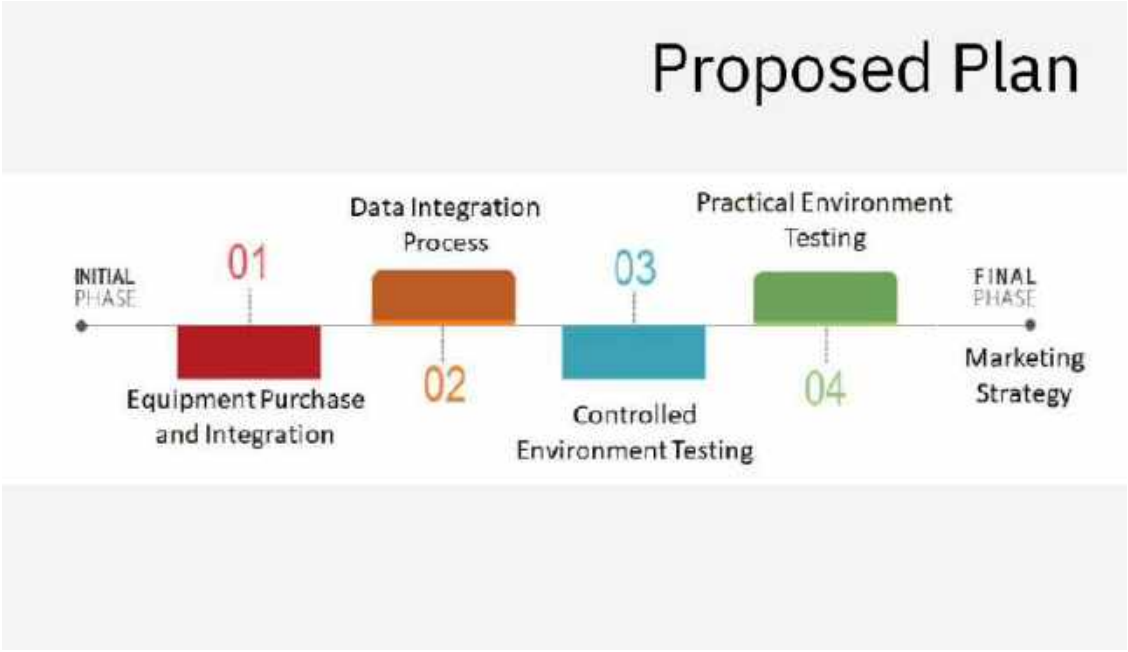
Director

Agreement Signed on 14-06-2024

Note:

SPIHER as formerly as St.Peter’s Engineering College Technology Business Incubator.

Report:



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Revenue Model

Plan A Units Sale	Plan B Pouch Sale	Plan C CO2 Sale
Rs.5k to 20k B2C & B2B	Rs.500 to 5k B2C (Recurring)	Standard Market Price B2B (Recurring)

In Thousands INR

EXPENSE

Unit Production

FINANCIALS

Size of the Market

Total Available Market (TAM):
$6.86 Billion

Serviceable Available Market (SAM):
$5 Billion

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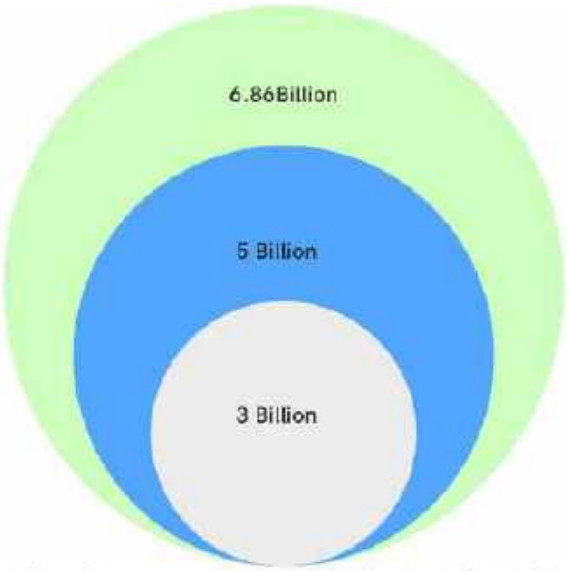
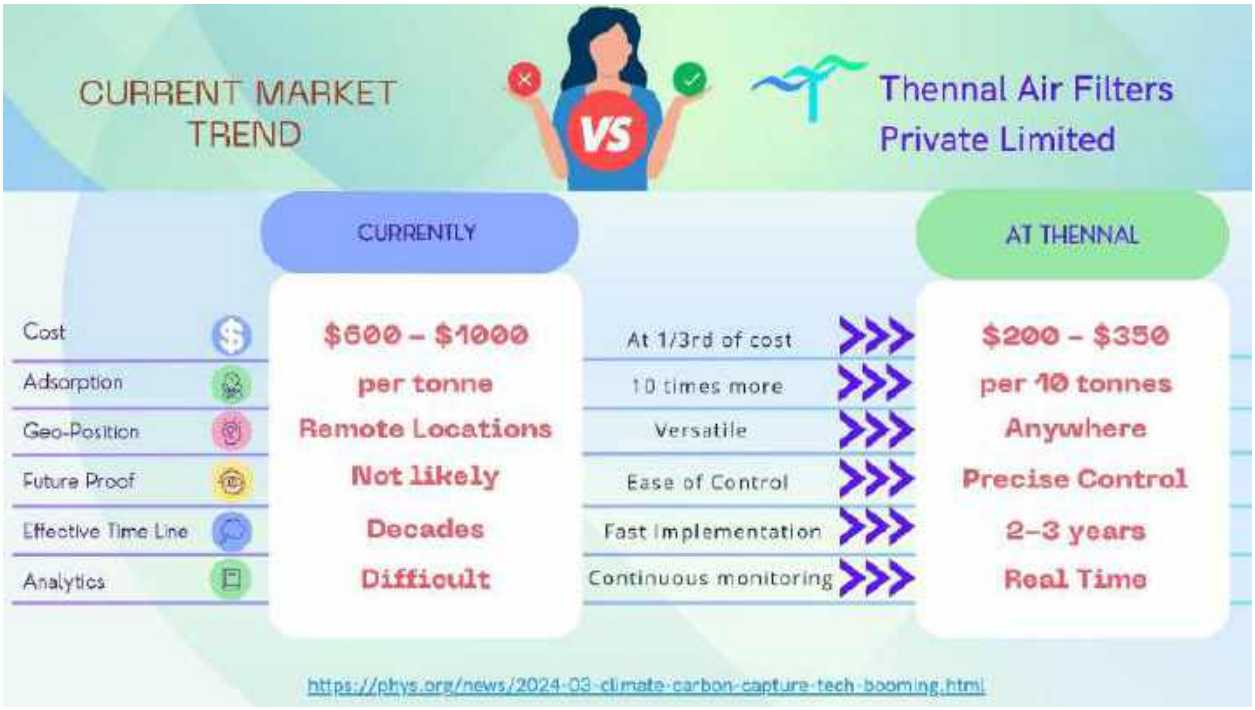


https://www.maximizemarketresearch.com/market-report/global-direct-air-carbon-capture-technology-market/80672/
https://www.statista.com/statistics/1414965/global-direct-air-capture-market-size/

Thennal Air Filters Private Limited

Competitive Advantage 1 Patented Nanotechnology	Competitive Advantage 2 Compact
Competitive Advantage 3 Efficient	Competitive Advantage 4 Scalability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VS
Thennal Air Filters Private Limited
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AT THENNAL
Cost
$600 – $1000
At 1/3rd of cost
$200 – $350
Adsorption
per tonne
10 times more
per 10 tonnes
Geo-Position
Remote Locations
Versatile
Anywhere
Future Proof
Not likely
Ease of Control
Precise Control
Effective Time Line
Decades
Fast Implementation
2–3 years
Analytics
Difficult
Continuous monitoring
Real Time
https://phys.org/news/2024-03-climate-carbon-capture-tech-booming.html


MARKET

Thennal Air Filters Private Limited

OTHER FILTERS ACTIVATED CARBONS	THENNAL FILTERS UNIQUE CARBON NANOMATERIAL STRUCTURE
Sophisticated Structures	NANO ENGINEERED Structures
Large Volume	95% Smaller Volume
High Specific Surface Area	High Specific Surface Area
Inefficient CO2 capture	High Density Active Sites
Low Industrial Scalability	High Industrial Scalability
Random Pore Size	Narrow pore size

COMPETITOR LANDSCAPE

	Company	Origin	Product	Technology	Application	Advantages	Disadvantages	Funds Raised
7	Carbon Collect	Ireland	Yes	Mechanical Tree	Outdoor	Passive DAC	Heating, indoor inefficient	$12M
8	Carbon Capture	UK	No	Amine MOF sorbents	Outdoor	Plug & Play sorbents	Production Scalability of MOF	$35M
9	Climeworks	Switzerland	Yes	Chemical filters	Outdoor	Long storage, carbfix	Heating, chemicals	$824M
10	Skytree	USA	Yes	Sorbents	Outdoor	Sorbent use	Heating of Sorbent	$6M
11	Carbon Engineering	Canada	Yes	Chemical Reaction	Outdoor	Photosynthetic model	Chemicals and Natural gas	$11CM
12	Thennal	India	No	Nano-engineered Carbon Xerogel Sorbents	Modular, Indoor	Electrifiable Sorbents, Indoor Efficient, scalable and compact	-	-

COMPETITOR LANDSCAPE

	Company	Origin	Product	Technology	Application	Advantages	Disadvantages	Funds Raised
1	Heirloom Carbon	USA	No	Limestone Hydroxides	Outdoor	Cheap raw materials	Crushing, heating	$56M
2	Mission Zero	UK	No	Ion selective electrochemical separation	Outdoor	Efficient	Scalability	$11M
3	Sustaera	USA	No	Nano structured sorbents	Modular, Outdoor	Solar and wind powered	Steam Heating, thin layered	$10M
4	Noya	USA	No	Activated Carbon	Outdoor	Cheap raw materials	Heating and non-mesoporous	$11M
5	Verdox	USA	No	Electro-swing	Outdoor, Indoor	Efficient	Carbon Nanotubes and thin electrode	$82M
6	Carbon Infinity	UK	No	Nano structured Sorbents	Indoor, Outdoor	Efficient, DACtories	Scalability, thin electrodes	$59k

DACC GAINT CLIMEWORKS

NOT A INDOOR FRIENDLY CONCEPT

Thennal Air Filters Private Limited

Direct Competitors	Indirect Competitors
Carbon Infinity	
Verdox	Climeworks
Sustaera	Heirloom Carbon
Noya	Carbon Engineering
Carbon Capture	Skytree
Carbon Collect	

COMPETITIONS

Thennal Air Filters
Private Limited

PROTOTYPE DEVELOPEMENT

We are constantly iterating our 'CarbaXe' designs to improve the Power Efficiency, Re-usability, Data quality, User Friendly and Environment Friendly Carbon Negative Product

Thennal Air Filters
Private Limited

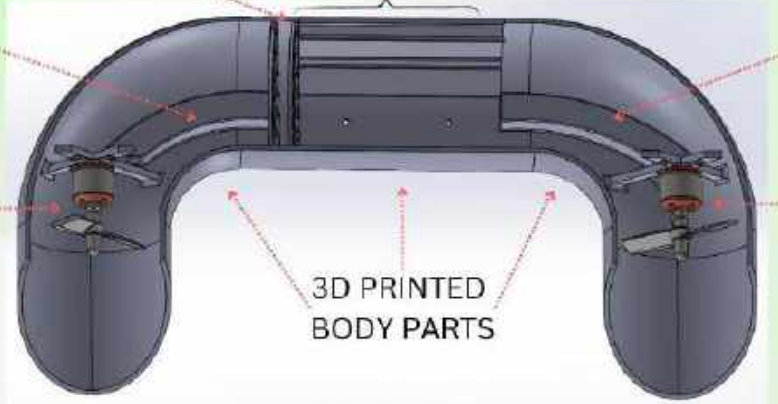
PROTOTYPE DEVELOPMENT

ELECTRONICS
Batteries
Microcontrollers
Power Controllers
Display
Connectors

Nanomaterial Filter

SENSOR 1

SENSOR 2



INLET FAN

OUTLET FAN

3D PRINTED BODY PARTS

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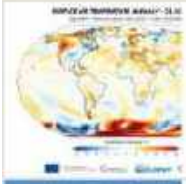
FORECAST ON CO2 AIR POLLUTION



New record daily global average temperature reached in July 2024

The Earth has just experienced its warmest day in recent history, according to C3S data. This article...

CopernicusECMWF

ipcc

Climate Change 2022: Impacts, Adaptation and Vulnerability

Intergovernmental Panel on Climate Change Working Group II contribution to the Sixth...

IPCC

iea

Air quality and climate policy integration in India – Analysis

Air quality and climate policy integration in India - Analysis and key findings. A report by the...

IEA

Climate change indicators reached record levels in 2023

The state of the climate in 2023 gave ominous new significance to the phrase "off the charts."

World Meteorological Organization / Mar 18, 2024

https://www.un.org/en/climate-action/un-issues-red-alert
https://www.iea.org/reports/air-quality-and-climate-policy-integration-in-india
https://wmo.int/news/media-centre/climate-change-indicators-reached-record-levels

MAJOR CAUSE OF ROAD CAR ACCIDENTS

Lack of Concentration is reflected as Induced Sleepiness in Drivers, due to high CO2 concentration (>2000 ppm) vis-a-vis lack of Oxygen to Brain

https://www.emro.who.int/emhj-volume-28-2022/volume-28-issue-9/risk-assessment-of-road-traffic-accidents-related-to-sleepiness-during-driving-a-systematic-review.html

https://www.thehindu.com/news/national/kerala/sleep-deprived-drivers-responsible-for-40-of-road-accidents-say-transport-officials/article61629032.ece

https://morth.nic.in/road-accident-in-india

https://www.nhtsa.gov/risky-driving/drowsy-driving

World Health Organization
Eastern Mediterranean Region

Health topics | Data and statistics | Media centre | Information resources | Countries | Programmes | About us

Eastern Mediterranean Health Journal | All issues | Volume 28 (2022) | Volume 28 Issue 9 | Risk assessment of road traffic accidents related to sleepiness during driving: a systematic review

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Risk assessment of road traffic accidents related to sleepiness during driving: a systematic review

PDF version

Shahzad Saleem[1]

[1]Department of Community Medicine, King Edward Medical University, Lahore, Punjab, Pakistan (Correspondence to: S. Saleem: drshahzad.fcps@gmail.com).

Abstract

Background: Injuries due to accidental crash are the 9th leading cause of death worldwide. Sleepiness results in disrupted neurological function and is a major risk factor for road traffic accidents.

Aims: This systematic review assessed the relationship between sleepiness during driving and road traffic accidents.

Methods: A systematic review was conducted using online databases such as Valley Online Library, ARTOR, Medline, and PubMed. Full-text, English language articles published between May 2000 and November 2020 were retrieved. Road traffic accident was set as the outcome of interest and sleepiness during driving as the exposure. The review included studies containing adjusted risk estimates (95% confidence interval). Ten cross-sectional studies (N = 35,945), 5 case-control studies (N = 3021), and 2 cohort studies (N =16,826) were included.

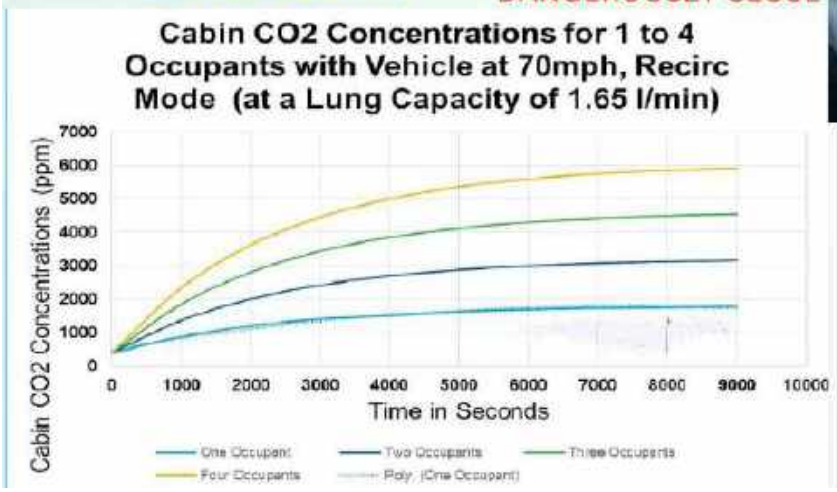
Results: Over 50% of the participants in the different studies experienced sleep deprivation ranging from 3.5% to 67.3%. Abe et al. reported the highest (58%) frequency of sleepiness during driving in their cross-sectional study in Japan, and Wali et al. reported the lowest (1.1%) in their cohort study in Pakistan.

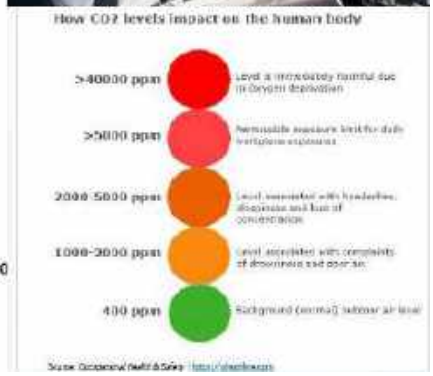
Conclusion: Sleepiness and sleep deprivation were related to road traffic accidents and

WHERE IS THE NEED

1. IN CARS AND TRUCKS!!!
2. IN AEROPLANES!!!
3. IN AC ROOMS!!!

DANGEROUSLY CLOSE





WHAT IS THE NEED IN INDIA

INDIA - WORLD'S 3RD MOST POLLUTED COUNTRY IN 2023
(NEXT TO BANGLADESH AND PAKISTAN)
42 OF TOP 50 WORLD'S MOST POLLUTED CITIES ARE IN INDIA
https://www.iqair.com/in-en/india

CLIMATE ACTION

8 BILLION PEOPLE
USING 1 BILLION 'CARBAXE'
PRODUCT

HELPING THEM TO BREATHE A CLEAN AIR
BY CAPTURING
1 KILOGRAM OF CO2 EVERY MONTH

IN THEIR LIVING SPACE!

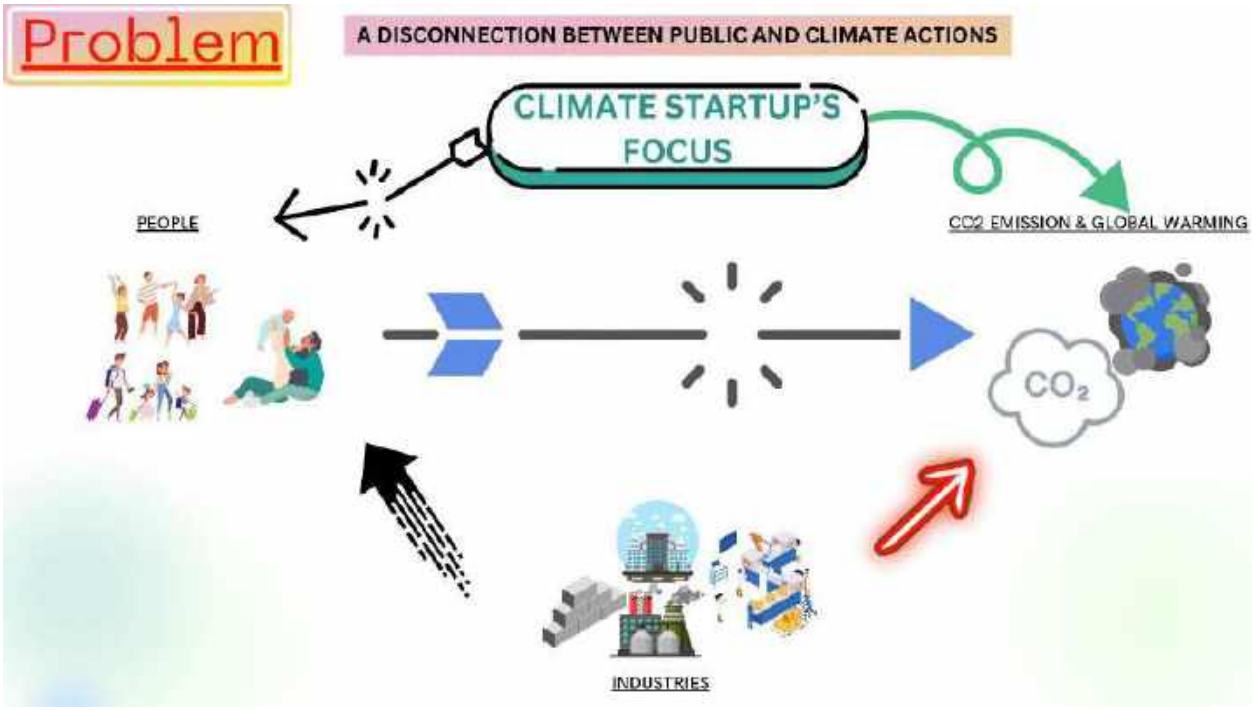
RESULTING
1 BILLION KILOGRAM OF CO2 CAPTURED
EVERY MONTH

INDIVIDUAL HEALTH
BENEFITS

G A P

BIG

CLIMATE ACTIONS BY
ENTITIES



PROBLEM STATEMENT

St. PETER'S
INSTITUTE OF HIGHER EDUCATION & RESEARCH
(DEEMED TO BE UNIVERSITY U/S 3 OF THE UGC ACT 1956)
Accredited by NAAC with A+ Grade, AICTE Approved and
ISO 9001:2015 Certified,
AVADI, Chennai - 600 054, Tamil Nadu.

Thennal Air Filters Private Limited
4/37, 16th Street, Thillai Ganga Nagar, Chennai - 600061
www.thennal.com
info@thennal.com
9710071471

TITLE: Removal of CO2 using Direct Air Carbon Capture Techniques

THENNAL AIR FILTERS PRIVATE LIMITED

A GREEN Tech – Clean Tech – Climate TECH START UP

Incorporation Completed

Ramkumar P R
Founder & CEO
THENNAL AIR FILTERS PRIVATE LIMITED

Date of Incorporation: 12.10.2024

Impact

Climate

Reduced CO2
In few decades of practice, CO2 level can be reduced to pre-industrial level of 280 ppm

Negative Carbon Foot Print
Individuals can contribute to climate action by having negative carbon foot-print in their daily lives

Sustainable Balanced Future
For centuries to come, humans can maintain critical balance with environmental eco-system, by themselves neutralizing their carbon foot-print

Social

Survival
140 million people in cities can survive extreme climate and air pollution condition as in Delhi like cities.

Safety
Number of Accidents on road could be reduced by 50%

Better Future
Number of patients in hospital with respiratory illness could be reduce d by 80%, especially Children.

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Team

Ramkumar.P.R

Founder & Chief Executive Officer
Nanotechnology Specialist
12+ years in Nano Science and Technology Research

Namagal.S

Research & Development
Specialist in Nano Materials
7+ years in Materials Science Research
Full-time Member

Sujatha.S

Chief Operational Officer
3+ years experience in programming
Team Leader at Newgen
Full-Time Memeber

TEAM

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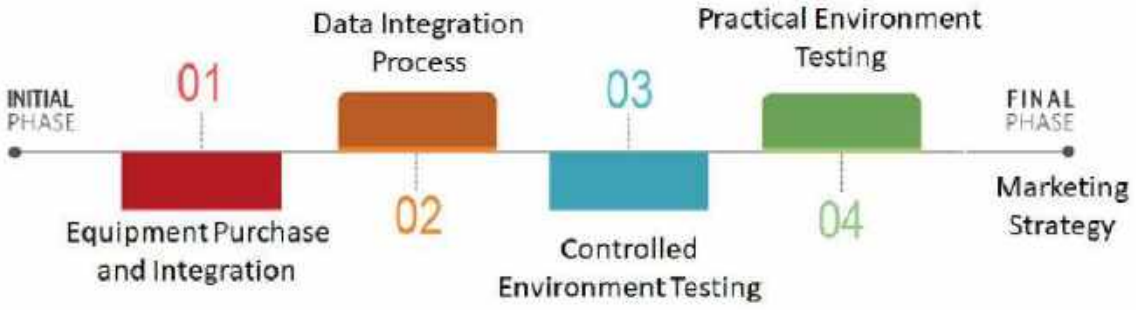
Proposed Plan



Financials

Revenue Model

Plan A Units Sale	Plan B Pouch Sale	Plan C CO2 Sale
Rs.5k to 20k B2C & B2B	Rs.500 to 5k B2C (Recurring)	Standard Market Price B2B (Recurring)

In Thousands INR

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Unit Production

FINANCIALS

Size of the Market

Total Available Market (TAM):
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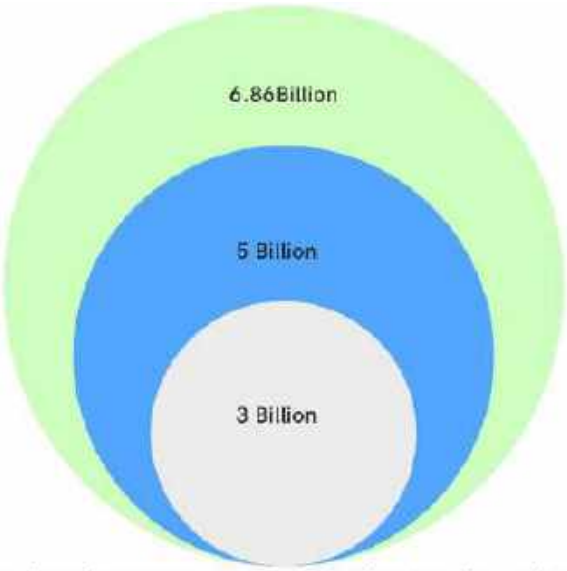

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https://www.statista.com/statistics/1414965/global-direct-air-capture-market-size/

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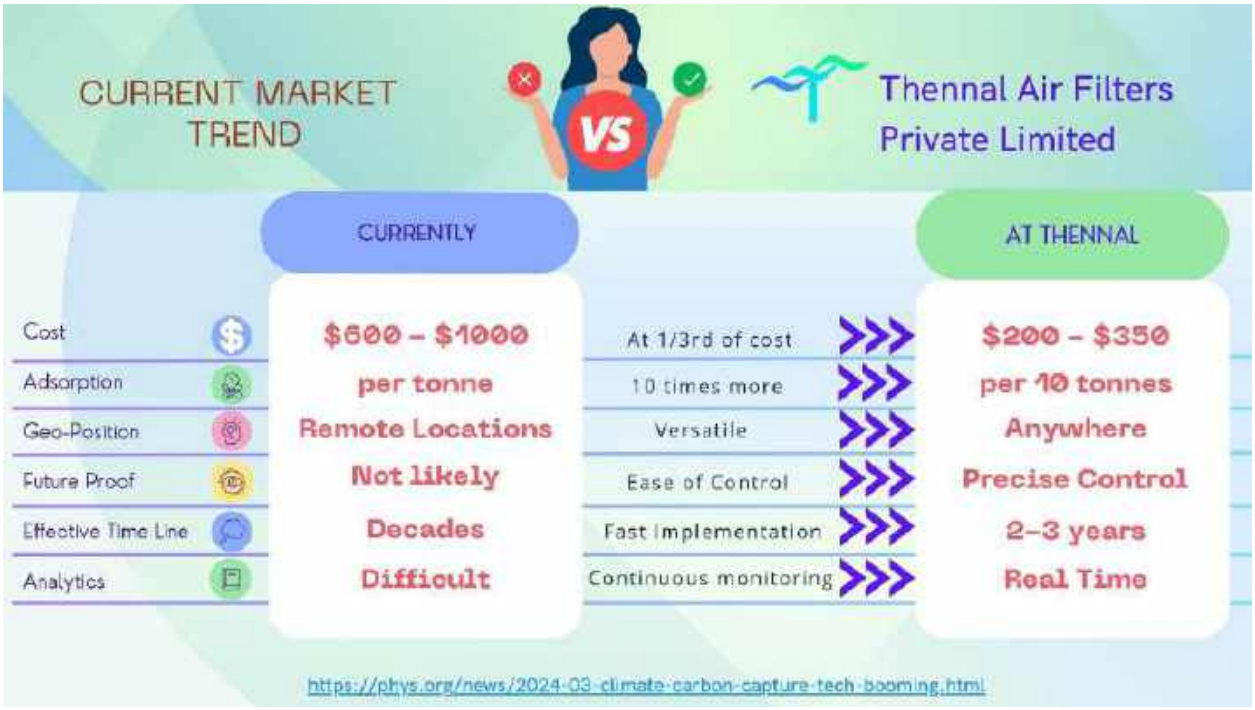
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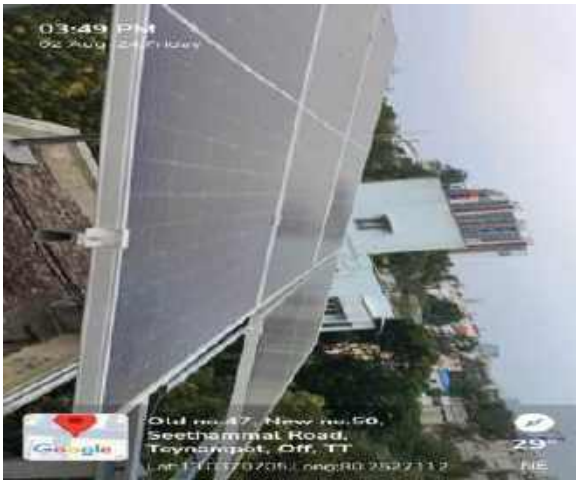
DACC GAINT CLIMEWORKS

NOT A INDOOR FRIENDLY CONCEPT

Workshop on installing thin film solar panels over Buildings for improving enery efficiency at Bajaj Showroom, Velachery



Workshop on installing thin film solar panels over Buildings for improving enery efficiency JP Solar Manufacturing Unit, Chengalpattu