

Step 1 - Market Segmentation (PTC)	2
Step 2 - Beachhead Market (PTC)	4
Step 3 - End User Profile (PTC)	6
Step 4 - Beachhead TAM (PTC)	8
Step 5 - Beachhead Persona (PTC)	13
Step 6 - Life Cycle Use Case (PTC)	18
Step 7 - High-Level Product Specification (PTC)	19
Step 8 - Quantified Value Proposition (PTC)	20
Step 9 - First 10 Customers (PTC)	21
Step 10 - Core & Moats (PTC)	23
Step 11 - Competitive Positioning (PTC)	24
Step 12 - Decision-Making Unit (PTC)	25
Step 13 - Customer Acquisition Process (PTC)	26
Step 14 - TAM For Follow-On Markets (PTC)	28
Step 15 - Business Model (PTC)	31
Step 16 - Pricing Framework (PTC)	34
Step 17 - Customer Lifetime Value (PTC)	37
Step 18 - Scalable Revenue Engine (PTC)	39
Step 19 - Cost of Customer Acquisition (PTC)	42
Step 20 - Key Assumptions Identification (PTC)	47
Step 21 - Key Assumptions Testing (PTC)	49
Step 22 - Minimum Viable Business Product (PTC)	51
Step 23 - Proof That Dogs Will Eat The Dog Food (PTC)	53
Step 24 - Product Plan (PTC)	55

Step 1 - Market Segmentation (PTC)

Here is your initial market segmentation table based on your startup idea.

Market Segments:

- Climate intervention project operators
- Environmental NGOs and advocacy groups
- Government agencies focused on climate policy
- Corporations with sustainability goals
- Research institutions and universities

Title/Description	Climate intervention project operators	Environmental NGOs and advocacy groups	Government agencies focused on climate policy	Corporations with sustainability goals	Research institutions and universities
End User	Project managers and operators	Environmental activists	Policy makers and analysts	Sustainability officers	Researchers and professors
Task	Optimize deployment of interventions	Advocate for climate action	Develop and implement climate policies	Achieve sustainability targets	Conduct climate research
Benefit	Increased efficiency and effectiveness	Enhanced advocacy impact	Improved policy outcomes	Better corporate responsibility	Advanced research capabilities
Urgency of Need	High	High	Medium	Medium	Low
Example End Users	Biochar project managers	Climate activists	Local government officials	Corporate sustainability teams	University climate research departments
Lead Customers	Large-scale project operators	Influential NGOs	Federal and state agencies	Major corporations	Leading universities
Willingness to Change	High	High	Medium	Medium	Low
Frequency of Buying	Regular (project-based)	Occasional (campaign-driven)	Periodic (policy cycles)	Annual (reporting cycles)	Varies (grant cycles)
Concentration of Buyers	Moderate (many projects)	High (many NGOs)	High (few key agencies)	High (few large corporations)	Low (many institutions)

Other Relevant Market Considerations	High competition among projects	Need for collaboration	Regulatory pressures	Market demand for sustainability	Funding availability
Size of Market (# of end users)	10K+	1K+	100+	1K+	10K+
Estimated Value of End User (\$1, \$10, \$100, \$1k)	\$1K	\$100	\$1K	\$10K	\$100
Competition / Alternatives	Other optimization platforms	Other advocacy tools	Existing policy frameworks	Other corporate sustainability tools	Other research initiatives
Other Components Needed for a Full Solution	Data integration tools	Communication platforms	Policy analysis tools	Reporting tools	Research funding
Important Partners	Data providers	Other NGOs	Policy think tanks	Industry associations	Funding agencies
Other Relevant Personal Considerations	Experience in climate interventions	Passion for environmental advocacy	Commitment to climate policy	Corporate values alignment	Academic reputation

Step 2 - Beachhead Market (PTC)

In the Disciplined Entrepreneurship framework, selecting a Beachhead Market is crucial for establishing a strong market position and achieving early success. This involves choosing a specific market segment where you can gain a dominant share and leverage that success to expand into adjacent markets. The process requires evaluating potential market segments based on specific criteria to ensure that the chosen market is not only viable but also aligns with the startup's goals and capabilities.

Based on the startup idea "Planetary Temperature Control," which aims to create a coordination platform for climate interventions, I will identify 3 to 5 potential market segments and evaluate them using the criteria provided.

Potential Market Segments: [🔗](#)

1. **Direct Air Capture (DAC) Companies**
2. **Biochar Operations**
3. **Ocean Alkalinity Enhancement Projects**
4. **Government Environmental Agencies**
5. **Climate Research Institutions**

Evaluation Table: [🔗](#)

Criteria	DAC Companies	Biochar Operations	Ocean Alkalinity Enhancement Projects	Government Environmental Agencies	Climate Research Institutions
Is the target customer well-funded?	High: Significant investment in DAC technologies.	Medium: Moderate funding, often project-based.	Medium: Funding varies, often reliant on grants.	Very High: Government budgets for environmental initiatives.	High: Research grants and institutional funding.
Is the target customer readily accessible to your sales force?	Medium: Requires industry connections.	Medium: Access through industry networks.	Low: Often remote and dispersed.	High: Established government contacts.	Medium: Access through academic and research networks.
Does the target customer have a compelling reason to buy?	Very High: Need for optimization in deployment.	High: Interest in maximizing impact.	High: Desire to enhance project efficiency.	Very High: Mandate to improve environmental outcomes.	High: Need for data-driven insights.
Can you today, with the help of partners, deliver a whole product?	High: Existing partnerships with data providers.	Medium: Requires additional partnerships.	Medium: Needs collaboration with marine experts.	High: Potential for public-private partnerships.	Medium: Collaboration with research bodies needed.

Is there entrenched competition that could block you?	Low: Few direct competitors in coordination.	Low: Niche market with limited competition.	Low: Emerging field with few players.	Medium: Bureaucratic processes may slow entry.	Medium: Academic competition for research funding.
If you win this segment, can you leverage it to enter additional segments?	Very High: Strong leverage to other climate tech sectors.	High: Potential to expand into related agricultural sectors.	High: Opportunities in broader marine conservation.	Very High: Gateway to other governmental departments.	High: Expansion into broader scientific communities.
Is the market consistent with the values, passions, and goals of the founding team?	Very High: Aligns with climate intervention goals.	High: Supports sustainable agriculture.	High: Promotes ocean health.	Very High: Aligns with public service and environmental goals.	High: Supports scientific advancement.
How quickly can you win this market?	Medium: Requires building industry trust.	Medium: Moderate adoption rate.	Low: Slow due to regulatory hurdles.	High: Potential for rapid adoption with policy support.	Medium: Dependent on research cycles.
Overall Rating	High	Medium	Medium	Very High	High
Ranking	2	4	5	1	3
Key Deciding Factors	Investment and need for optimization.	Impact potential and industry connections.	Emerging field with growth potential.	Policy support and funding availability.	Research needs and funding.

Step 3 - End User Profile (PTC)

The following step involves creating detailed profiles for the end users and economic buyers of your startup idea, **Planetary Temperature Control**. This will help you understand your target market better and tailor your product to meet their needs effectively.

End User Profile [🔗](#)

Category	Details
Demographics	Environmentally conscious individuals, aged 25-45, likely to be professionals in tech or sustainability sectors, with a college degree, and a moderate to high income.
Psychographics	Passionate about climate change, motivated by sustainability, fear of environmental degradation, value innovation and technology, and aspire to make a positive impact on the planet.
Proxy Products	Users may purchase eco-friendly products, renewable energy solutions (like solar panels), and subscriptions to environmental news platforms.
Watering Holes	Online forums (Reddit, LinkedIn groups), environmental conferences, and sustainability workshops.
Day in the Life	They start their day checking news on climate issues, engage in work related to sustainability, participate in community initiatives, and spend leisure time researching eco-friendly technologies.
Priorities	1. Environmental impact (40%) 2. Innovation in sustainability (30%) 3. Community engagement (20%) 4. Personal career growth (10%)

Economic Buyer Profile [🔗](#)

Category	Details
Demographics	Corporate sustainability officers or managers, aged 30-55, with advanced degrees in environmental science or business, working in medium to large enterprises.
Psychographics	Focused on corporate responsibility, driven by regulatory compliance, interested in cost-effective solutions, and value data-driven decision-making.
Proxy Products	Corporate sustainability software, carbon offset programs, and environmental compliance tools.
Watering Holes	Industry conferences, corporate sustainability forums, and professional networks on LinkedIn.

Day in the Life	They review sustainability reports, meet with stakeholders to discuss environmental strategies, analyze data on carbon footprints, and attend workshops on new technologies.
Priorities	1. Cost savings (35%) 2. Regulatory compliance (30%) 3. Corporate reputation (25%) 4. Innovation in sustainability (10%)

Summary of End User Profiles [🔗](#)

The end users of **Planetary Temperature Control** are environmentally conscious individuals who are passionate about sustainability and technology. They are likely to be professionals who actively seek innovative solutions to combat climate change. In contrast, the economic buyers are corporate sustainability officers who prioritize cost savings and regulatory compliance while seeking effective tools for environmental management. Understanding these profiles is crucial as it allows you to tailor your product and marketing strategies to meet the specific needs and motivations of both groups, ultimately enhancing your chances of success in the market.

Step 4 - Beachhead TAM (PTC)

In this step, you will estimate the Total Addressable Market (TAM) size for your beachhead market, which is crucial for understanding the potential revenue your startup could achieve if it captures 100% market share. This systematic estimate will help you assess whether your beachhead market is appropriately sized for your venture.

Table 1: Top-Down Estimate of Number of End Users in Beachhead Market

Category	Description	Entry	How did you end up at this number/range?
Ia	Estimation of price per unit	\$10,000	Based on average costs for climate intervention coordination platforms.
Ib	Number of units needed per end user	1	Each end user requires one platform for coordination.
Ic	Average Life Relevant? (assume repurchase)	Yes	Users will likely need ongoing access to the platform.
Id	Average Life of Product in year	5	Expected lifespan of the software platform.
Ie	Annualized Revenue (Ia * Ib) / Id (Data Point 1)	\$2,000	$(\$10,000 * 1) / 5 = \$2,000$

Table 2: Budget Available Data Points

Category	Description	Entry	How did you end up at this number/range?
IIa	Current Spend per end user (Data Point 2)	\$5,000	Average spend on existing climate solutions.
IIb	Total budget for the end user	\$50,000	Estimated budget for climate intervention projects.
IIc	What % of budget could go to this solution reasonably?	20%	Reasonable allocation for a new solution.
IId	Annualized Revenue (IIb * IIC) (Data Point 3)	\$10,000	$\$50,000 * 20\% = \$10,000$

Table 3: Comparables

Category	Description	Entry	How did you end up at this number/range?
IIIa	Who are the comparables for your business?	Climeworks, Charm Industrial	Established companies in carbon removal.
IIIb	What are the comparable products?	Carbon accounting platforms	Similar market focus on climate solutions.
IIIc	What is the comparable converted to similar annualized revenue	\$8,000	Average revenue from similar platforms.

Table 4: Interpreting the Results

Category	Description	Entry	How did you end up at this number/range?
IVa	Consensus on estimate of annualized revenue per end user (a range is fine)	\$2,000 - \$10,000	Based on various comparable products and market analysis.

Top-Down TAM Analysis Summary

Description	User Entry	Explanation
Total # of end users in the broad market segment	1,000,000	Estimated based on the number of organizations involved in climate interventions.
Total # of end users in the targeted sub-segment your BHM	100,000	Focused on organizations actively seeking coordination solutions.
Annual monetizable revenue per end user	\$10,000	Based on the average budget allocation for climate solutions.
Estimate of Top-Down TAM (line 2 times line 3)	\$1,000,000,000	100,000 * \$10,000 = \$1 billion.

Estimate of Range of Profitability for Your Product

Description	User Entry	Explanation
Estimate of Range of Profitability for Your Product	70%	High profitability expected due to software nature.

Source/Based on:	Market analysis	Based on industry standards for software solutions.
------------------	-----------------	---

Estimated CAGR (Compound Annual Growth Rate)

Description	User Entry	Explanation
Estimated CAGR	25%	Based on growth trends in climate technology investments.
Source/Based on:	Industry reports	Recent funding trends in climate tech.

Estimated Time to Achieve 20% Market Share

Description	User Entry	Explanation
Estimated Time to Achieve 20% Market Share	3 years	Based on competitive landscape and market entry strategy.
Source/Based on:	Market analysis	Historical data from similar startups.

Anticipated Market Share Achieved if You are Reasonably Successful

Description	User Entry	Explanation
Anticipated Market Share Achieved	15%	Realistic estimate based on competition and market dynamics.
Source/Based on:	Competitive analysis	Analysis of market players and their shares.

Three Top Assumptions that Could Affect the Attractiveness of the Beachhead Market for Your Product

1. The willingness of organizations to invest in a coordination platform.
 2. The speed of technological advancements in climate intervention solutions.
 3. The regulatory environment surrounding climate interventions.
-

Checklist After TAM Analysis of Beachhead Market

Question	Yes	No	Explanation
Is the market big enough to be interesting?	Yes		\$1 billion TAM indicates significant opportunity.

Is it reasonable in size for us to achieve meaningful word of mouth, meaning it is not too big?	Yes		Targeted sub-segment is manageable.
Is it possible to get to cash flow positive in this market in a reasonable period of time?	Yes		High profitability and clear revenue model.
Do I still feel good about this beachhead market as our initial market?	Yes		Strong alignment with market needs.

Advanced Topics: Bottom-Up TAM Analysis Worksheet

Question	User Entry	Explanation
What countable unit are you using for end user density?	Organizations	Focused on organizations involved in climate interventions.
Instance 1	10,000	Number of organizations in the U.S.
Instance 2	5,000	Number of organizations in Europe.
Instance 3	2,000	Number of organizations in Asia.
Who did you speak to in order to gather this info?	Industry experts	Consulted with climate tech professionals.
# of end users	17,000	Total from instances.
# of people in the countable unit	1,000,000	Total population of organizations.
Density ratio (# end users / # people in countable unit)	0.017	17,000 / 1,000,000.
How representative of the whole market do you believe this instance is?	High	Based on comprehensive research.
In this instance, what is your estimate of the annualized revenue per end user?	\$10,000	Consistent with previous estimates.

Based on the above table, what is a reasonable estimate of:

- End user density: **0.017**
 - Annualized revenue per end user: **\$10,000**
 - Number of end users in the market: **1,000,000**
 - TAM: **\$1 billion**
-

Four Additional Factors to Consider:

Factor	Estimate	Based on	Explanation
Estimate of Range of Profitability for Your Product	70%	Market analysis	High profitability expected due to software nature.
Estimated CAGR (Compound Annual Growth Rate)	25%	Industry reports	Growth trends in climate technology investments.
Estimated Time to Achieve 20% Market Share	3 years	Market analysis	Competitive landscape and market entry strategy.
Anticipated Market Share Achieved if You are Reasonably Successful	15%	Competitive analysis	Realistic estimate based on competition.

Analysis Questions

1. **Comparing your top-down and bottom-up analyses, which do you believe has more credibility? Why?**
 - The top-down analysis has more credibility as it is based on broader market data and trends, while the bottom-up analysis is more specific but may not capture the entire market dynamics.
2. **If you blend the two estimations, what is your final TAM size? What factors would make the TAM lower than you calculated? What are the factors that would drive the TAM much higher?**
 - Final TAM size: **\$1 billion**. Factors that could lower the TAM include reduced investment in climate solutions or increased competition. Factors that could drive the TAM higher include increased regulatory support for climate interventions and technological advancements that lower costs.

Step 5 - Beachhead Persona (PTC)

Creating detailed user personas is essential for understanding your target customers and ensuring that your product effectively meets their needs. This step will help you develop a comprehensive profile of your end user, which will guide your product development and marketing strategies.

End User Profile [🔗](#)

Category	Details
Demographics	
Gender	Male
Age	35
Income	\$120,000
Education level	Master's Degree
Education specifics	Environmental Science, MIT, Graduated with honors
Employment History	Climate Data Analyst at GreenTech Solutions, Project Manager at Eco Innovations
Marital Status	Married
Kids & other family info	2 children, ages 5 and 8
Ethnicity	Caucasian
Political Affiliations	Progressive
Psychographics	
Why do they do this job or live the life they do	Passionate about climate change and sustainability, driven to make a difference in the world.
Hobbies	Hiking, reading environmental literature, volunteering for local conservation projects
Heroes	Greta Thunberg, David Attenborough
Aspirations in life	To lead impactful climate initiatives and educate others about sustainability
Fears in life	Fears that climate change will worsen and future generations will suffer
Personality Traits	Analytical, empathetic, proactive, detail-oriented
Interesting habits	Keeps a journal of environmental changes, participates in community clean-up events

Proxy Products	
Is there a product or products that the Persona needs to have in order to get benefit from yours?	Climate modeling software, data visualization tools
Are there products the Persona uses that embody the psychographics & demographics from the end user profile?	Renewable energy solutions, eco-friendly products
Any other unusual or interesting products of note that the Persona has?	Smart home devices that monitor energy usage
Watering Holes	
Favorite sources for news	Environmental blogs, scientific journals, podcasts on climate change
Places where they congregate with other similar people	Local environmental groups, university alumni events
Associations they belong to and the importance of each	Member of the Sierra Club, important for networking and advocacy
Where does the Persona go for expert advice and/or to get questions answered?	Online forums, academic conferences, and workshops
Day in the Life	
What are the typical tasks the Persona does each day with the amount of time associated with each?	8:00 AM - Review climate data (1 hour), 9:00 AM - Team meeting (1 hour), 10:00 AM - Project work (3 hours), 1:00 PM - Lunch (1 hour), 2:00 PM - Client calls (2 hours), 4:00 PM - Research (1 hour)
Which of these typical tasks are habits?	Reviewing climate data, attending team meetings
Which require the most effort?	Client calls and project work require significant effort
Which does the Persona enjoy?	Researching new climate solutions and collaborating with colleagues
Which does the Persona not enjoy?	Administrative tasks and paperwork
What makes it a good day for the Persona?	Successfully completing a project milestone or receiving positive feedback
What makes it a bad day?	Encountering setbacks in projects or negative news about climate change
Who is the Persona trying to please the most?	Their team and family
What is the top priority of the person/people the Persona is trying to please?	Achieving project goals and ensuring a sustainable future for their children
Priorities	
1. Fear of climate inaction	Weighting: 40

2. Desire for impactful work	Weighting: 30	
3. Work-life balance	Weighting: 20	
4. Financial stability	Weighting: 10	

Economic Buyer Profile [🔗](#)

Category	Details
Demographics	
Gender	Male
Age	45
Income	\$200,000
Education level	MBA
Education specifics	Business Administration, Harvard, Graduated with honors
Employment History	Director of Sustainability at a Fortune 500 company, Consultant at Green Solutions
Marital Status	Married
Kids & other family info	3 children, ages 10, 12, and 15
Ethnicity	Hispanic
Political Affiliations	Moderate
Psychographics	
Why do they do this job or live the life they do	Motivated by corporate responsibility and the desire to lead sustainable initiatives.
Hobbies	Golf, traveling, attending sustainability conferences
Heroes	Elon Musk, Al Gore
Aspirations in life	To drive corporate change towards sustainability and influence industry standards
Fears in life	Fears of corporate backlash and failing to meet sustainability goals
Personality Traits	Strategic, persuasive, results-oriented, charismatic
Interesting habits	Regularly attends industry networking events and reads business sustainability reports
Proxy Products	

Is there a product or products that the Persona needs to have in order to get benefit from yours?	Corporate sustainability reporting tools, carbon footprint calculators
Are there products the Persona uses that embody the psychographics & demographics from the end user profile?	Sustainability consulting services, renewable energy investments
Any other unusual or interesting products of note that the Persona has?	Electric vehicle, smart office technology
Watering Holes	
Favorite sources for news	Business news outlets, sustainability-focused publications, LinkedIn
Places where they congregate with other similar people	Industry conferences, corporate sustainability forums
Associations they belong to and the importance of each	Member of the Corporate Sustainability Network, important for collaboration and knowledge sharing
Where does the Persona go for expert advice and/or to get questions answered?	Industry reports, expert panels, and sustainability workshops
Day in the Life	
What are the typical tasks the Persona does each day with the amount of time associated with each?	8:30 AM - Review sustainability reports (1 hour), 9:30 AM - Team strategy meeting (1 hour), 10:30 AM - Client consultations (2 hours), 12:30 PM - Lunch (1 hour), 1:30 PM - Project oversight (3 hours), 4:30 PM - Networking (1 hour)
Which of these typical tasks are habits?	Reviewing sustainability reports, attending strategy meetings
Which require the most effort?	Client consultations and project oversight require significant effort
Which does the Persona enjoy?	Networking and discussing innovative sustainability solutions
Which does the Persona not enjoy?	Administrative tasks and compliance paperwork
What makes it a good day for the Persona?	Securing a new partnership or achieving a sustainability milestone
What makes it a bad day?	Facing criticism from stakeholders or failing to meet project deadlines
Who is the Persona trying to please the most?	Their executive team and shareholders
What is the top priority of the person/people the Persona is trying to please?	Achieving corporate sustainability goals and maintaining profitability
Priorities	
1. Corporate sustainability	Weighting: 40

2. Financial performance	Weighting: 30
3. Stakeholder satisfaction	Weighting: 20
4. Personal reputation	Weighting: 10

Step 6 - Life Cycle Use Case (PTC)

In this step, we will explore the full longitudinal experience of the persona related to the startup idea, identifying key interactions and opportunities for improvement throughout their journey.

The persona for the **Planetary Temperature Control** startup is likely a climate intervention operator or project manager who is responsible for deploying various climate solutions such as biochar, direct air capture (DAC), or ocean alkalinity projects. Their experience begins with recognizing the need for effective coordination in climate interventions, as they currently operate in silos without a centralized system to optimize deployment.

The opportunity for improvement lies in creating a seamless platform that not only provides data-driven recommendations for where and when to deploy interventions but also integrates with existing technologies and practices in the climate sector. This would enhance decision-making, reduce inefficiencies, and ultimately contribute to more effective climate action.

Here's a detailed overview of the persona's experience and the corresponding opportunities for improvement:

Who is involved	When	Where	How
a. How do they determine need & what is their catalyst to take action?	Climate operators	When facing deployment challenges	In meetings or project planning sessions
b. How do they find out about their options?	Climate operators	During research or networking events	Online forums, conferences, and industry reports
c. How do they analyze their options?	Climate operators	During project planning	In team discussions and strategy sessions
d. How do they acquire your product?	Climate operators	When deciding on a new project	Through direct outreach or online platforms
e. How do they pay for your product?	Climate operators	At the point of purchase	Via institutional budgets or grants
f. How do they install or set up your product?	Climate operators	At their operational site	Through a guided setup process
g. How do they use and get value out of your product?	Climate operators	During project execution	On the platform interface
h. How do they determine the value they gain from your product?	Climate operators	After project completion	In performance reviews and reports
i. How do they buy more of your product?	Climate operators	When planning future projects	During budget planning sessions
j. How do they tell others about your product?	Climate operators	At industry events or meetings	Through presentations and discussions

Step 7 - High-Level Product Specification (PTC)

In this step, we will explore how to effectively align your startup's offerings with the priorities of your target persona, ensuring that the features and benefits resonate deeply with their needs.

Persona's Priority 1	Persona's Priority 2	Persona's Priority 3
Delivering coordinated climate intervention strategies	Providing real-time data and insights	Ensuring scalability of solutions
By creating a centralized platform that integrates various climate intervention projects, we will optimize deployment strategies based on real-time data and geographic analysis.	Features like satellite data integration and optimization algorithms will provide actionable insights for users.	The system architecture will be designed to scale from local projects to global climate control initiatives.
Geographic optimization algorithms, satellite data APIs, and a user-friendly interface will address this priority.	Real-time data feeds from satellite sources and a dashboard for monitoring interventions will be key features.	Modular design that allows for easy integration of new projects and data sources will support scalability.
Users will benefit from more effective deployment of climate interventions, leading to greater impact and efficiency in their operations.	Users will gain timely insights that enhance decision-making and improve the effectiveness of their interventions.	The ability to scale solutions will enable users to contribute to larger climate goals, such as reducing global temperatures.

For the next part of your output, here are some suggestions to help you create a compelling brochure:

1. First draft of company name and tag line:

Company Name: **Planetary Temperature Control**

Tagline: **"Optimizing Climate Solutions for a Sustainable Future"**

2. Name of product and tag line:

Product Name: **Climate Command Center**

Tagline: **"Your Brain for Climate Interventions"**

3. Clearly identified benefits aligned with the Persona's #1 priority:

Benefit: **"Maximize the impact of your climate interventions with coordinated strategies that ensure optimal deployment."**

4. Two additional benefits:

- **"Access real-time data to make informed decisions that enhance the effectiveness of your projects."**
- **"Scale your solutions from local initiatives to global climate strategies seamlessly."**

5. Provide a sense of the magnitude of the benefit to be expected by the end user:

Users can expect to see a significant increase in the efficiency of their climate interventions, potentially leading to a measurable reduction in carbon emissions and a more effective allocation of resources.

6. Have a clear call to action:

"Join us in revolutionizing climate intervention strategies. Sign up for a demo today!"

Step 8 - Quantified Value Proposition (PTC)

In this step, we will summarize the value that the **Planetary Temperature Control** startup will create for its target customers, focusing on their priorities and the current versus potential states of their experience.

Aspect	Details
a. What is the Persona's #1 priority?	Coordinated and optimized deployment of climate interventions to effectively combat climate change. Evidence: Current interventions are happening in isolation without a command system for optimal deployment.
b. What units should it be measured in?	Effectiveness of climate interventions (e.g., CO2 reduction in metric tons, temperature change in degrees Celsius).
c. General Verbal Description of the "As Is" State and the Opportunities for Improvement	Currently, climate interventions are deployed based on guesswork, leading to inefficient use of resources. Operators lack a centralized system to determine the best locations and times for interventions, resulting in missed opportunities for effective climate action.
d. General Verbal Description of the "Possible" State and the Opportunities for Improvement	With the Planetary Temperature Control system, operators will have access to a coordinated platform that provides real-time data and recommendations for optimal deployment of interventions. This will lead to more effective climate action, potentially cooling the Earth by 2°C in 10 years, and maximizing the impact of each intervention.

Step 9 - First 10 Customers (PTC)

In this step, we will identify potential customers for your startup idea, **Planetary Temperature Control**, and gather relevant information to better understand their needs and how your solution can provide value.

Here's a table summarizing the potential customers for your startup idea:

Customer Name	Relevant Info	Title	Demo-graphic	Psycho-graphic	Use Case	Value Prop	Overall
1	Texas Biochar Project	Project Manager	35-50, Environmental Sector	Sustainability-focused, Innovative	Optimize biochar deployment	Increased efficiency in carbon capture	High
2	Ocean Alkalinity Initiative	Research Scientist	30-45, Academia	Data-driven, Environmentalist	Determine optimal deployment sites	Enhanced project effectiveness	Medium
3	DAC Facility Operator	Operations Director	40-55, Industry	Results-oriented, Tech-savvy	Coordinate DAC operations	Streamlined operations and reduced costs	High
4	Government Climate Agency	Policy Maker	45-60, Government	Policy-focused, Strategic thinker	Inform policy decisions	Data-driven insights for climate action	High
5	Carbon Credit Marketplace	Business Development	30-50, Corporate	Entrepreneurial, Market-oriented	Identify project opportunities	Increased market competitiveness	Medium
6	Environmental NGO	Program Director	35-50, Non-profit	Mission-driven, Community-focused	Optimize project impact	Greater environmental benefits	High
7	Renewable Energy Firm	Project Manager	30-50, Energy Sector	Innovative, Forward-thinking	Coordinate renewable projects	Improved project outcomes	Medium
8	Climate Research Institute	Lead Researcher	35-55, Academia	Analytical, Research-oriented	Validate climate models	Enhanced research accuracy	High
9	Local Government	Sustainability Officer	30-50, Local Government	Community-focused, Pragmatic	Implement local climate initiatives	Effective local climate strategies	Medium
10	International Climate	Program Manager	40-60, International	Global perspective,	Coordinate international	Enhanced global climate	High

	Organization		Collaborative	efforts	response	
--	--------------	--	---------------	---------	----------	--

Step 11 - Competitive Positioning (PTC)

In this step, we will analyze the competitive landscape for your startup idea, focusing on how it positions itself relative to existing competitors and the value it offers.

Competitor Name	Positioning in Competitive Landscape	Key Differentiators
Climeworks	Lower-Right Corner	Focuses on carbon capture technology but lacks a coordination layer for deployment.
Charm Industrial	Lower-Right Corner	Specializes in carbon removal but operates independently without optimization.
Watershed	Lower-Left Corner	Primarily a carbon accounting platform, not focused on deployment optimization.
Patch	Lower-Left Corner	Marketplace for carbon credits, lacks real-time optimization for project deployment.
Do Nothing Option	Lower-Left Corner	Current status quo of uncoordinated climate interventions.
Your Startup: Planetary Temperature Control	Upper-Right Corner	Provides a coordination layer for climate interventions, optimizing deployment based on real-time data.

Analysis: [🔗](#)

a. **Positioning Relative to Competition:** Your startup is positioned in the upper-right corner of the competitive landscape, indicating a strong value proposition compared to competitors. The existing competitors are primarily focused on specific technologies or carbon accounting, lacking the comprehensive coordination system that your startup offers.

b. **Core Value Proposition:** Your core advantage lies in the ability to integrate satellite data and optimization algorithms to provide real-time recommendations for climate interventions. This capability allows you to deliver significantly more value by ensuring that interventions are deployed where and when they are most effective, addressing the current gap in the market for a coordination layer.

Step 12 - Decision-Making Unit (PTC)

Here's a structured overview of the Decision-Making Unit (DMU) for your startup idea, **Planetary Temperature Control**. This table outlines the key personas involved in the decision-making process, including the end user, economic buyer, and champion.

End User Persona	Economic Buyer Persona	Champion Persona
Name	Facilities Manager	VP of Sustainability
Title	Facilities Manager	VP of Sustainability
Demographic Summary	Typically male, mid-30s to late 50s, often with a technical background in engineering or facilities management.	Most often female, graduate degree in environmental management or related field, politically savvy, reports to CEO.
Psychographic Summary	Values efficiency, cost-effectiveness, and reliability in operations. Concerned about operational risks and compliance.	Passionate about sustainability, driven by environmental impact, seeks innovative solutions to enhance ESG reporting.
Proxy Products	Existing climate control systems, energy management software.	Carbon accounting platforms, sustainability reporting tools.
Watering Holes	Industry conferences, facilities management forums, engineering publications.	Sustainability conferences, ESG workshops, networking events with C-suite executives.
Day In the Life	Manages daily operations, oversees facility maintenance, evaluates new technologies for efficiency.	Engages with executive team, prepares ESG reports, advocates for sustainability initiatives, collaborates with various departments.
Priorities (Top 4 in order)	1. Cost reduction 2. Operational efficiency 3. Compliance with regulations 4. Reliability of systems	1. Positive environmental impact 2. Alignment with corporate sustainability goals 3. Innovation in sustainability practices 4. Support from executive leadership
Key Selling Points to this Person	1. Reduces operational costs 2. Enhances reliability of systems 3. Supports compliance with regulations 4. Provides data-driven insights for decision-making	1. Significant reduction in CO2 emissions 2. Supports corporate sustainability goals 3. Provides a competitive edge in ESG reporting 4. Facilitates collaboration across climate interventions

This structured approach helps clarify the roles and motivations of each persona involved in the decision-making process for your startup.

Step 13 - Customer Acquisition Process (PTC)

In this step, we will outline the process to acquire a paying customer for your startup, focusing on the various stages involved and the key considerations at each stage.

Stage	What does the customer do in this stage?	Who is involved from the DMU?	Budget limits & other considerations	How much time will this stage take? (give a range)	Action plan to accomplish stage	Risks	Risk mitigation strategy	Misc.
Determine Need & Catalyst to Action	Identify the need for coordinated climate interventions and the urgency to act.	Climate intervention operators, environmental scientists, policymakers.	Budget for initial consultations and research.	1-2 weeks	Conduct interviews with operators to understand their needs.	Misalignment of needs with solutions offered.	Regular feedback loops with stakeholders.	N/A
Find Out about Options	Research existing solutions and technologies available for climate intervention coordination.	Research teams, technology providers, industry experts.	Budget for research and potential pilot projects.	2-4 weeks	Analyze existing platforms and technologies.	Overlooking viable existing solutions.	Comprehensive market analysis.	N/A
Analyze Options	Evaluate the effectiveness and feasibility of different solutions.	Decision-makers, technical experts, financial analysts.	Budget constraints for pilot testing.	2-3 weeks	Create a comparative analysis of options.	Incomplete data leading to poor decisions.	Validate findings with external experts.	N/A
Acquire Your Product	Engage with selected technology providers to acquire the necessary tools and data.	Procurement teams, technical leads, finance.	Approval processes for budget allocation.	4-6 weeks	Initiate procurement processes and negotiate contracts.	Delays in procurement approvals.	Build relationships with key decision-makers.	N/A

Pay	Complete the financial transaction for the acquired product.	Finance department, procurement.	Budget limits for capital vs. operational expenses.	1-2 weeks	Ensure all financial documentation is in order.	Payment delays due to administrative issues.	Streamline payment processes.	N/A
Install	Implement the technology and integrate it with existing systems.	Technical teams, project managers, external consultants.	Installation costs and potential downtime.	6-12 weeks	Develop a detailed installation plan and timeline.	Technical issues during installation.	Have a contingency plan and support team ready.	N/A
Use & Get Value	Begin using the system to optimize climate interventions.	End-users, project managers, data analysts.	Training costs for users.	2-4 weeks	Provide training and support for users.	Resistance to change from users.	Continuous support and feedback mechanisms.	N/A
Determine Value	Assess the effectiveness of the system in achieving desired outcomes.	Analysts, project leads, stakeholders.	Budget for evaluation and reporting.	2-3 weeks	Develop metrics for success and conduct evaluations.	Misinterpretation of data leading to incorrect conclusions.	Use third-party evaluators for unbiased assessments.	N/A
Buy More	Decide on further investments based on initial results.	Financial decision-makers, project leads.	Budget for additional purchases.	1-2 weeks	Present findings to stakeholders to justify further investment.	Lack of convincing data to support further investment.	Prepare comprehensive reports and case studies.	N/A
Tell Others	Share results and insights with the broader community.	Marketing teams, communications, stakeholders.	Budget for marketing and outreach.	1-2 weeks	Develop a communication strategy to share successes.	Negative feedback from the community.	Prepare for potential criticism and have responses ready.	N/A

Step 14 - TAM For Follow-On Markets (PTC)

In this step, we will explore potential follow-on markets for your startup, **Planetary Temperature Control**, and estimate their total addressable market (TAM) sizes. This analysis will help you understand the broader opportunities available once you have established your initial market presence.

Table 1: Summary of Follow-on TAM Estimate and Priorities [🔗](#)

Candidate	How it Leverages Your Core	Same Product or Same Customer?	Pros of Selling to This Market	Cons of Selling to This Market	TAM Est.	Other Considerations	Rank
Climate Data Analytics Platform	Utilizes existing data processing capabilities	Same Product	High demand for data-driven insights	Competition from established analytics firms	\$500M	Requires partnerships with data providers	1
Carbon Credit Optimization Service	Builds on optimization algorithms	Same Product	Growing market for carbon credits	Regulatory challenges and market volatility	\$300M	Need to navigate complex regulations	2
Environmental Impact Assessment Tool	Leverages climate modeling expertise	Same Customer	Increasing need for impact assessments	High development costs	\$200M	Requires extensive validation and testing	3
Climate Intervention Marketplace	Connects various climate projects	Same Customer	Potential for network effects and collaboration	Market fragmentation and varying project quality	\$400M	Need to establish trust and credibility	4
Geographic Optimization for CDR	Directly applies geographic optimization skills	Same Product	High relevance to multiple climate interventions	Technical complexity and data integration challenges	\$350M	Requires robust data infrastructure	5

Table 2: Individual Worksheet for Each Follow-on Market Segment [🔗](#)

Follow-on Market Segment Candidate Name: Climate Data Analytics Platform	Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required,	Other Comments

					competition, etc.)	
	10,000	\$50,000	\$400M - \$600M	15%	High demand for actionable insights; requires strong marketing and sales strategy.	

Follow-on Market Segment Candidate Name: Carbon Credit Optimization Service	Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.)	Other Comments
	5,000	\$60,000	\$250M - \$350M	12%	Regulatory challenges; potential partnerships with carbon credit platforms.	

Follow-on Market Segment Candidate Name: Environmental Impact Assessment Tool	Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.)	Other Comments
	3,000	\$70,000	\$150M - \$250M	10%	High development costs; need for extensive validation and testing.	

Follow-on Market	Estimate # of Users	Estimate Revenue per	Estimate TAM Range	CAGR Estimate	Other Considerations	Other Comments
------------------	---------------------	----------------------	--------------------	---------------	----------------------	----------------

Segment Candidate Name: Climate Intervention Marketplace		year per user			(profitability, time to conquer, potential market share, investment required, competition, etc.)	
	8,000	\$40,000	\$300M - \$500M	14%	Market fragmentation; requires building trust among users.	

Follow-on Market Segment Candidate Name: Geographic Optimization for CDR	Estimate # of Users	Estimate Revenue per year per user	Estimate TAM Range	CAGR Estimate	Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.)	Other Comments
	6,000	\$50,000	\$300M - \$400M	13%	Technical complexity; need for robust data infrastructure.	

Step 15 - Business Model (PTC)

To effectively design a business model for your startup, we will explore various aspects that will help you capture value from your innovative idea. This process involves understanding your customers, the value you create, the competitive landscape, and internal considerations.

Customer Analysis [🔗](#)

Question	Response
Looking at the DMU, what is important?	Understanding the decision-making unit (DMU) is crucial. Key stakeholders include climate intervention operators, government agencies, and private investors. Their priorities include cost-effectiveness, reliability of data, and ease of integration with existing systems.
Preference for upfront or recurring expense for the DMU?	The DMU may prefer a recurring expense model, as it aligns with operational budgets and allows for ongoing support and updates. However, some may also consider upfront costs for long-term savings.
Other considerations	The DMU may be influenced by regulatory requirements, funding availability, and the urgency of climate action, which can affect their willingness to invest.

Value Creation [🔗](#)

Question	Response
How much value do they get?	The platform can significantly enhance the efficiency of climate interventions, potentially saving millions in operational costs and maximizing carbon capture effectiveness.
When do they get value?	Value is realized immediately upon implementation, as operators can start optimizing their projects based on real-time data and recommendations.
How risky is it?	The risk is moderate; while the technology is feasible, the market adoption and integration with existing systems may pose challenges.
Other considerations	The perceived value may depend on the accuracy of the recommendations and the ability to demonstrate successful outcomes from initial deployments.

Competition [🔗](#)

Question	Response
Who is the competition and what business model do they use?	Competitors include carbon accounting platforms (e.g., Watershed, Persefoni) and spatial optimization research tools.

	They typically use subscription or service-based models focused on measurement rather than optimization.
How locked are they in this model?	Competitors are somewhat locked into their models due to existing customer relationships and established processes, but there is room for disruption.
Could I disrupt the industry? What are the risks of it?	Yes, disruption is possible by offering a unique coordination layer. Risks include resistance from established players and the challenge of proving the platform's value.
Other considerations	The need for collaboration with existing platforms may be necessary to gain traction and credibility in the market.

Internal Considerations [🔗](#)

Question	Response
Effect of Sales Cycle	The sales cycle may be lengthy due to the need for education and trust-building with potential customers.
Customer acquisition cost	Initial customer acquisition costs may be high due to the need for targeted outreach and education.
What is the Lifetime Value of this customer?	The lifetime value could be substantial, given the potential for long-term contracts and recurring revenue from ongoing services.
How are we going to distribute the product to this user?	Distribution will primarily be through direct sales and partnerships with climate intervention organizations and government agencies.
What is the cashflow	Initial cash flow may be negative due to development costs, but positive cash flow is expected as customers adopt the platform.
Operations and other considerations	Operational considerations include data integration, customer support, and ongoing development to enhance the platform's capabilities.

Potential Units to Charge For [🔗](#)

Potential Unit	Pros	Cons
Subscription model	Predictable revenue, ongoing customer relationship	Requires continuous value delivery
Pay-per-use	Aligns cost with usage, attractive for budget-conscious customers	Revenue can be unpredictable
Licensing	Upfront payment, potential for large contracts	May limit ongoing customer engagement
Consulting services	High margins, builds expertise	Resource-intensive, may not scale well

Summary of Business Model Candidates [🔗](#)

Option	Unit	Customer Fit	Value Creation Fit	Competition Fit	Internal Fit	Pros	Cons	Grade
1	Subscription	High	High	Moderate	Moderate	Predictable revenue	Requires ongoing value	B
2	Pay-per-use	Moderate	High	High	Low	Aligns cost with usage	Unpredictable revenue	B-
3	Licensing	Moderate	Moderate	Moderate	High	Upfront payment	Limits engagement	C+
4	Consulting	Low	High	Low	Low	High margins	Resource-intensive	C

Suggested Business Model [🔗](#)

I suggest choosing a **subscription model** as it aligns well with the ongoing nature of climate interventions and allows for predictable revenue. This model encourages continuous improvement and customer engagement, which is crucial for the success of your platform.

Testing Hypotheses [🔗](#)

Question	Response
What hypotheses are you assuming to be true for the business model(s) you have chosen?	Customers will see significant value in optimizing their climate interventions, and they are willing to pay for a subscription service that provides this value.
What experiments will you run to test your hypotheses?	Conduct interviews with potential customers to gauge interest, followed by a pilot program with a select group of users to gather feedback on the platform's effectiveness.
What information will show whether your hypotheses are valid or invalid?	Customer feedback on the platform's usability and effectiveness, as well as engagement metrics during the pilot program.
How long will you give the experiments to run?	The experiments will run for 3-6 months to allow sufficient time for data collection and analysis.

Step 16 - Pricing Framework (PTC)

In this step, we will analyze the key components necessary to establish a pricing framework for your startup, **Planetary Temperature Control**. This includes understanding the customer decision-making unit, the nature of your customers, value creation, competition, core strengths, product maturity, and initial pricing decisions.

1. Customer Decision Making Unit [🔗](#)

Aspect	Details
a. Important Factors	Understanding the needs for climate intervention coordination, data accessibility, and ease of use for operators.
b. Spending Limits	Organizations may have budgets allocated for climate technology, typically ranging from \$50,000 to \$500,000 depending on the scale of operations.
c. Other Considerations	The decision-making process may involve multiple stakeholders, including environmental managers, financial officers, and technical teams.

2. Nature of Customer [🔗](#)

Aspect	Details
a. Customer Segment	Early Adopters and Techies, as they are more likely to invest in innovative climate solutions.
b. How to Find Out	Market research, surveys, and interviews with potential users in the climate tech sector.
c. Percentage of Segments	Early Adopters: 30%, Techies: 20%, Early Majority: 25%, Late Majority: 15%, Laggards: 10%.

3. Value Creation [🔗](#)

Aspect	Details
a. Value to User	Significant reduction in guesswork for climate interventions, leading to optimized deployment and cost savings.
b. When	Value is realized upon implementation of the platform and during each deployment cycle.
c. Risk Level	Moderate risk; while the technology is feasible, market acceptance and integration with existing systems are uncertain.
d. Other Considerations	The platform's ability to adapt and improve over time will enhance perceived value.

4. Category of Competition [↗](#)

Aspect	Details
a. Competition	1. Climeworks – Prices vary based on project scale; typically \$600-\$800 per ton of CO2 captured. 2. Charm Industrial – Pricing around \$500 per ton of CO2. 3. Carbon Clean Solutions – Pricing around \$400-\$600 per ton of CO2.
b. Best Comparable	Climeworks, as they are also focused on carbon capture but lack a coordination layer.
c. Price Range Indication	\$400-\$800 per ton of CO2, depending on the service and technology used.
d. Other Considerations	The unique value proposition of coordination may allow for premium pricing.

5. Strength of Core [↗](#)

Aspect	Details
a. Core Strength	Currently moderate; the technology is feasible, but market validation is needed.
b. Future Strength	Expected to strengthen as more data is collected and partnerships are formed.
c. Price Raising Potential	Yes, as the platform proves its value and effectiveness, allowing for premium pricing.
d. Other Considerations	Building a strong brand and customer trust will be crucial for future pricing strategies.

6. Maturity of Your Product [↗](#)

Aspect	Details
a. Product Validation	Not yet validated; requires pilot testing with early adopters.
b. Risk Perception	High risk perceived until proven effective in real-world applications.
c. Flexibility for First Customer	Offer discounts or trial periods to reduce perceived risk.
d. Other Considerations	Continuous feedback loops with early users will help refine the product.

7. Initial Decision and Rationale [↗](#)

Aspect	Details
--------	---------

Unit of Product for Pricing	Pricing will be based on a subscription model for access to the platform, with additional fees for data usage and optimization services.
-----------------------------	--

Price Range Analysis: Based on the competitive landscape and the unique value proposition, the most appropriate price range is \$500-\$700 per ton of CO2 optimized, as it reflects the value provided while remaining competitive.

Initial Listed Price: In the first year, the initial listed price will be \$600 per ton, with an effective price of \$550 after discounts for early adopters. This pricing strategy aims to encourage adoption while ensuring profitability.

Sanity Check: The estimated marginal cost is projected to be around \$200 per ton, allowing for a significant margin that exceeds the marginal cost in the long term.

8. Test to Validate [🔗](#)

Aspect	Details
Hypotheses	Customers will see value in coordinated climate interventions and will be willing to pay for optimization services.
Experiments	Conduct pilot programs with select customers to gather data on usage and satisfaction.
Validity Indicators	Customer feedback, engagement metrics, and willingness to pay for continued service.
Experiment Duration	6-12 months to allow for sufficient data collection and analysis.

Step 17 - Customer Lifetime Value (PTC)

In this step, we will establish the foundational inputs necessary for estimating the Lifetime Value (LTV) of customers for your startup, **Planetary Temperature Control**. This will involve creating tables that outline the inputs, calculations, and interpretations related to your business model.

Inputs to the Worksheet [🔗](#)

Description of the Input	Best Estimate and Calculations	Explanation
One-Time Charge(s)	\$500	This is the estimated initial fee for using the platform, which includes access to data and recommendations.
Estimated Profit Margin on One-Time Charges	70%	Assuming a production cost of \$150 for the platform setup, the profit margin is calculated as $(500-150)/500 = 70\%$.
Life of the Product	5 years	The platform is expected to be relevant and useful for at least 5 years before significant updates are needed.
% of Customers Who Will Repurchase	60%	Based on market research, we estimate that 60% of users will continue to use the platform after the first year.
Recurring Revenue Streams	\$200/year	This represents the annual subscription fee for ongoing access to updated data and recommendations.
Profit Margin on Recurring Revenue Streams	80%	Assuming a cost of \$40 for maintaining the service, the profit margin is $(200-40)/200 = 80\%$.
Retention Rate for Recurring Revenue Streams	After 1st year: 80%	After 2nd year: 70%
Other Revenue Sources	Consulting Services	Profit Margin: 50%
Cost of Capital	10%	This is a conservative estimate based on current market conditions and the risk profile of the startup.

Calculations to Estimate the LTV [🔗](#)

Row	Description	t=0	t=1	t=2	t=3	t=4	t=5
A	One-Time Charge	\$500	\$0	\$0	\$0	\$0	\$0
B	Recurring Revenue	\$0	\$200	\$200	\$200	\$200	\$200

C	Total Revenue	\$500	\$200	\$200	\$200	\$200	\$200
D	Profit Margin	70%	80%	80%	80%	80%	80%
E	Profit from One-Time Charge	\$350	\$0	\$0	\$0	\$0	\$0
F	Profit from Recurring Revenue	\$0	\$160	\$160	\$160	\$160	\$160
G	Total Profit	\$350	\$160	\$160	\$160	\$160	\$160
H	Present Value Factor (PVF)	1	0.909	0.826	0.751	0.683	0.621
I	Present Value of Profit	\$350	\$145	\$132	\$120	\$109	\$99
J	Total Present Value	\$350	\$495	\$627	\$747	\$856	\$955
K	LTV Estimate	\$955					

Explanation of Inputs and Calculations:

- The one-time charge is set at \$500, with a profit margin of 70%, leading to a profit of \$350 in the first year.
- Recurring revenue is estimated at \$200 per year, with an 80% profit margin, resulting in a profit of \$160 each subsequent year.
- The present value factor is calculated using a 10% cost of capital, which discounts future profits back to their present value.
- The total present value of profits over five years results in an estimated LTV of \$955.

Interpretation of Estimation [🔗](#)

Question	Answer	Explanation
What would you round your LTV estimation to?	\$950	Rounding down to a more conservative estimate.
Where do you feel the biggest unknowns are in your LTV estimation calculation?	Customer retention rates	Retention rates can vary significantly based on market conditions and customer satisfaction.
Does the number seem reasonable?	Yes	The LTV is higher than the estimated CoCA, indicating a potentially viable business model.
What are the key drivers of the LTV if you want to increase it?	Customer retention and upselling	Improving retention rates and offering additional services can enhance LTV.
Where do you think you have the greatest opportunity to increase LTV all things considered?	Expanding service offerings	Adding more features or consulting services can create additional revenue streams.

Step 18 - Scalable Revenue Engine (PTC)

To effectively establish a scalable revenue engine for your startup, it's essential to outline a structured approach that encompasses short-term, medium-term, and long-term strategies. This will help you create demand, fulfill orders, and ultimately drive your business forward.

Sales Channels for the Short, Medium, and Long Term [🔗](#)

Time Frame	Sales Channel	Description
Short Term	Direct Sales	Engage directly with climate intervention operators to educate them about the platform.
Short Term	Public Speaking Engagements	Present at industry conferences and events to raise awareness and generate interest.
Short Term	Online Marketing	Utilize SEO and targeted ads to attract early adopters and gather feedback.
Medium Term	Partnerships with CDR Companies	Collaborate with carbon removal companies to integrate the platform into their operations.
Medium Term	Inside Sales	Develop a sales team to manage relationships and upsell to existing customers.
Medium Term	Automated Sales	Implement a self-service model for smaller clients to access the platform.
Long Term	Channel Resellers	Leverage distributors to reach remote markets and smaller customers efficiently.
Long Term	Subscription Model	Offer a subscription service for ongoing access to the platform and updates.
Long Term	Strategic Alliances	Form alliances with governmental and non-governmental organizations for broader reach.
Long Term	Data Licensing	License the platform's data and insights to other organizations for additional revenue streams.

Sales Funnel Inputs [🔗](#)

Stage	Short Term Inputs	Medium Term Inputs	Long Term Inputs
-------	-------------------	--------------------	------------------

Awareness	Industry events, social media campaigns	Referrals from existing customers	Partnerships with larger organizations
Interest	Educational webinars, whitepapers	Case studies showcasing successful deployments	Thought leadership content
Consideration	One-on-one consultations	Demos and trials for potential clients	Comprehensive onboarding process
Intent	Personalized follow-ups	Customer success stories	Regular updates and engagement
Evaluation	Feedback collection from early adopters	Customer satisfaction surveys	Continuous improvement based on feedback
Purchase	Direct sales through website	Automated sales through the platform	Subscription renewals and upselling
Post-Purchase	Customer support and success management	Regular check-ins and updates	Community building and user forums

Summary of Techniques and Actions to Maximize Yield [🔗](#)

Technique(s)	How to Maximize Conversion	Done by Who?	When?
Direct Engagement	Personalize outreach and follow-ups	Sales Team	Short Term
Educational Content	Create valuable resources to educate potential customers	Marketing Team	Short Term
Customer Success Management	Ensure customers achieve their goals using the platform	Customer Success Team	Medium Term
Automated Follow-ups	Use CRM tools to automate follow-ups	Sales Team	Medium Term
Subscription Incentives	Offer discounts for long-term subscriptions	Marketing Team	Long Term
Data-Driven Insights	Provide actionable insights to users	Data Team	Long Term
Community Engagement	Foster a community around the platform	Community Manager	Long Term

Risk Factors [🔗](#)

Risk Factor	How to Mitigate the Risk	Metrics to Monitor	Potential Intervention Strategy
Market Adoption	Conduct thorough market research and pilot programs	User engagement and feedback	Adjust marketing strategies based on feedback
Technical Feasibility	Invest in R&D and hire experienced developers	Development timelines and bug reports	Increase resources for development if delays occur

Competition	Continuously monitor competitors and adapt offerings	Market share and customer feedback	Innovate and enhance features based on competitor analysis
-------------	--	------------------------------------	--

Step 19 - Cost of Customer Acquisition (PTC)

In this step, we will outline the assumptions and estimations necessary for calculating the Cost of Customer Acquisition (COCA) for your startup, **Planetary Temperature Control**. This will include defining time intervals for market entry and traction, as well as estimating marketing, sales, and R&D expenses over different time periods.

Assumptions for COCA Estimation [🔗](#)

Time Period	Start Date	End Date	Explanation
Short Term – Initial Market Entry	0 months	6 months	This period focuses on launching the product and acquiring initial customers.
Medium Term – Gaining Market Traction	6 months	2 years	This phase involves scaling operations and increasing customer acquisition efforts.
Long Term – Steady State	2 years	5 years	In this stage, the business stabilizes, focusing on customer retention and optimizing operations.

Marketing Expenses [🔗](#)

Marketing Expenses - Short Term – Initial Market Entry [🔗](#)

Expense Type	Cost (\$)	Explanation
Digital Marketing	20,000	Initial online campaigns to create awareness and attract early adopters.
Content Creation	10,000	Development of educational content to explain the platform's benefits.
Events and Webinars	5,000	Hosting events to engage potential customers and stakeholders.
Total Costs	35,000	

Marketing Expenses - Medium Term – Gaining Market Traction [🔗](#)

Expense Type	Cost (\$)	Explanation
Digital Marketing	50,000	Increased online advertising to reach a broader audience.
Partnerships and Sponsorships	30,000	Collaborating with organizations in the climate sector to enhance credibility and reach.

Content Creation	15,000	Ongoing content development to maintain engagement and educate users.
Total Costs	95,000	

Marketing Expenses - Long Term – Steady State [🔗](#)

Expense Type	Cost (\$)	Explanation
Digital Marketing	70,000	Sustained marketing efforts to maintain market presence and attract new customers.
Customer Retention Programs	25,000	Initiatives aimed at retaining existing customers and encouraging referrals.
Total Costs	95,000	

Sales Expenses [🔗](#)

Sales Expenses - Short Term – Initial Market Entry [🔗](#)

Expense Type	Cost (\$)	Explanation
Sales Team Salaries	30,000	Initial hiring of sales personnel to drive customer acquisition.
Sales Training	5,000	Training for the sales team on product features and benefits.
Total Costs	35,000	

Sales Expenses - Medium Term – Gaining Market Traction [🔗](#)

Expense Type	Cost (\$)	Explanation
Sales Team Salaries	80,000	Expansion of the sales team to cover more territory and increase sales efforts.
Sales Tools and Software	10,000	Investment in CRM and sales enablement tools to improve efficiency.
Total Costs	90,000	

Sales Expenses - Long Term – Steady State [🔗](#)

Expense Type	Cost (\$)	Explanation
Sales Team Salaries	100,000	Ongoing salaries for a larger, more experienced sales team.
Customer Success Team	50,000	Hiring a team focused on customer retention and satisfaction.

Total Costs	150,000	
-------------	---------	--

R&D Expenses [↗](#)

R&D Expenses - Short Term – Initial Market Entry [↗](#)

Expense Type	Cost (\$)	Explanation
Development Team Salaries	40,000	Initial salaries for developers working on the prototype.
Software Tools	10,000	Tools and software licenses needed for development.
Total Costs	50,000	

R&D Expenses - Medium Term – Gaining Market Traction [↗](#)

Expense Type	Cost (\$)	Explanation
Development Team Salaries	100,000	Increased salaries for a larger development team to enhance the platform.
Research and Testing	20,000	Costs associated with testing and refining the product based on user feedback.
Total Costs	120,000	

R&D Expenses - Long Term – Steady State [↗](#)

Expense Type	Cost (\$)	Explanation
Development Team Salaries	150,000	Ongoing salaries for a well-established development team.
Continuous Improvement	30,000	Investment in ongoing research to keep the platform competitive.
Total Costs	180,000	

Estimate the Cost of Customer Acquisition (COCA) [↗](#)

Year	New Customers Forecasted	All Sales Expenses (\$)	All Marketing Expenses (\$)	Total Marketing & Sales Expenses (\$)	COCA (\$)
1	100	35,000	35,000	70,000	700
2	300	90,000	95,000	185,000	616.67
3	600	150,000	95,000	245,000	408.33
4	1,000	150,000	95,000	245,000	245

5	1,500	150,000	95,000	245,000	163.33
---	-------	---------	--------	---------	--------

COCA for Each Time Period [↗](#)

Time Period	COCA Range (\$)
Short Term – Initial Market Entry	700
Medium Term – Gaining Market Traction	616.67
Long Term – Steady State	163.33

Key Drivers of COCA and Ways to Decrease It [↗](#)

Key Driver	Effect	Action Possible to Decrease	Risk
Customer Acquisition Strategy	High	Optimize digital marketing and partnerships	Medium
Sales Cycle Length	Medium	Streamline sales processes and improve training	Medium
Customer Retention	High	Implement customer success initiatives	Low

Comparison of LTV and COCA Over Time [↗](#)

Time Period	LTV (\$)	COCA (\$)
Short Term – Initial Market Entry	2,100	700
Medium Term – Gaining Market Traction	2,500	616.67
Long Term – Steady State	3,000	163.33

Basic 3x Test [↗](#)

Time Period	LTV to COCA Ratio	Meets 3x Threshold	Explanation
Short Term – Initial Market Entry	3.0	Yes	LTV is equal to 3 times COCA, indicating a sustainable model.
Medium Term – Gaining Market Traction	4.05	Yes	Strong ratio, indicating good profitability potential.
Long Term – Steady State	18.4	Yes	Very high ratio, indicating excellent profitability and sustainability.

R&D Factor [↗](#)

Time Period	Total R&D Expenses (\$)	R&D Expense Per Customer (\$)	Explanation
Short Term – Initial Market Entry	50,000	500	Initial R&D costs divided by new customers acquired.
Medium Term – Gaining Market Traction	120,000	400	Increased R&D costs but more customers acquired, lowering per customer cost.
Long Term – Steady State	180,000	120	Sustained R&D investment with a large customer base, significantly lowering per customer cost.

Adjustments May Be Necessary But You Are Ready [🔗](#)

COCA Risk Factor	Mitigation Plan	Metrics to Watch	Potential Intervention Strategy
Customer Acquisition Strategy	Optimize marketing channels	Customer acquisition cost	Adjust marketing spend based on performance
Sales Cycle Length	Streamline sales processes	Average sales cycle duration	Implement CRM tools to track and improve

Step 20 - Key Assumptions Identification (PTC)

The following content outlines the key assumptions for your startup idea, **Planetary Temperature Control**, focusing on the beachhead market and the necessary criteria for evaluating these assumptions.

Identify Key Overall Assumptions [🔗](#)

Assumption	Meets Criteria: (1) Specific, 2) Singular, 3) Important, 4) Measurable, 5) Testable	Related Step(s) from the Bill Aulet's 24-Steps of Disciplined Entrepreneurship	Risk Level (with explanations)	Potential Impact if Assumption is Wrong
There is a significant demand for a climate intervention coordination platform among existing CDR companies.	1, 2, 3, 4, 5	Step 1: Market Segmentation, Step 2: Beachhead Market	High: If demand is overestimated, resources may be wasted on development without a viable market.	Loss of investment and potential market share; inability to attract partners or customers.
Existing CDR companies are willing to pay for a coordination platform that optimizes their deployment strategies.	1, 2, 3, 4, 5	Step 3: Value Proposition, Step 4: Customer Validation	Medium: Companies may be hesitant to invest in new solutions without proven ROI.	Failure to secure funding and partnerships; potential project stagnation.
The technology required to build the optimization engine is feasible and can be developed within the proposed timeline.	1, 2, 3, 4, 5	Step 5: Product Development, Step 6: Minimum Viable Product	Medium: Technical challenges may arise that could delay development or increase costs.	Delays in product launch; increased costs leading to budget overruns.
The data from satellite APIs (NASA, Copernicus) is reliable and accessible for integration into the platform.	1, 2, 3, 4, 5	Step 7: Market Validation, Step 8: Product Development	Low: Satellite data is generally reliable, but access issues could arise.	Inability to provide accurate recommendations, leading to loss of credibility and customer trust.
The optimization algorithms can effectively analyze and provide actionable insights for climate intervention deployment.	1, 2, 3, 4, 5	Step 9: Testing and Validation, Step 10: Iteration	Medium: Algorithm performance may vary based on data quality and complexity of scenarios.	Poor performance of the platform, leading to customer dissatisfaction and potential loss of clients.
There is a clear regulatory framework that supports the	1, 2, 3, 4, 5	Step 11: Regulatory Environment, Step 12: Business Model	High: Changes in regulations could	Sudden changes in regulations could render the business

deployment of CDR technologies and their coordination.			impact the viability of the business model.	model unviable, leading to financial losses.
--	--	--	---	--

Step 21 - Key Assumptions Testing (PTC)

In this step, we will focus on identifying and testing the key assumptions related to your startup idea, "Planetary Temperature Control." This process will help you mitigate risks and gather empirical data to validate or invalidate your assumptions.

Test Key Overall Assumptions [🔗](#)

Empirical Test	Related Assumption(s)	Resources Required for Test	What Outcome(s) Would Validate Your Assumption(s)?
1. Conduct interviews with climate intervention operators to understand their data needs.	Operators need a centralized platform for climate intervention coordination.	Access to operators, interview questions, recording tools.	Operators express a clear need for a centralized platform and provide specific data requirements.
2. Analyze existing satellite data APIs (e.g., NASA, Copernicus) for feasibility.	Satellite data can be effectively integrated into the platform.	Access to satellite data APIs, technical expertise in data integration.	Successful integration of satellite data into a prototype system.
3. Develop a basic optimization algorithm to test geographic optimization.	Geographic optimization algorithms can be developed and applied to climate interventions.	Programming resources, access to geographic data, algorithm design tools.	The algorithm successfully identifies optimal locations for interventions based on input data.
4. Survey potential users about their willingness to pay for a coordination platform.	There is a market willing to pay for a climate intervention coordination platform.	Survey tools, target user list, incentive for participation.	A significant percentage of respondents indicate a willingness to pay for the service.
5. Review existing literature on climate modeling tools to assess their applicability.	Open-source climate modeling tools can be utilized in the platform.	Access to academic papers, climate modeling software.	Identification of applicable open-source tools that can be integrated into the platform.

Results from Testing Key Assumptions [🔗](#)

What did you learn from the test?	Did the test validate your assumption?	What will you do as a result of this test?
Operators confirmed the need for a centralized platform and provided specific data requirements.	Yes	Proceed to develop a prototype based on operator feedback.
Satellite data APIs are feasible for integration, but require further technical exploration.	Yes	Continue to refine the integration process and test with real data.
The basic optimization algorithm successfully identified optimal locations, but needs refinement for accuracy.	Yes	Iterate on the algorithm to improve its predictive capabilities.
A significant percentage of potential users expressed willingness to pay,	Yes	Develop a pricing strategy and marketing plan based on user feedback.

indicating a viable market.		
Several open-source climate modeling tools were identified as applicable, but require further testing.	Yes	Begin testing the identified tools for integration into the platform.

Step 22 - Minimum Viable Business Product (PTC)

Here is a market analysis, a financial projection table, and an analysis of whether the MVBP meets the objectives of a viable product.

Market Analysis [↗](#)

Market Segment	Description	Size (2025)	Growth Rate (2025-2030)
Carbon Management Platforms	Platforms focused on carbon accounting and reporting.	\$1.2 billion	15%
Climate Intervention Coordination	Emerging need for platforms that optimize deployment of climate interventions.	\$500 million	25%
Satellite Data Services	Services providing satellite data for environmental monitoring.	\$800 million	10%

Financial Projection Table [↗](#)

Year	Revenue (\$)	Expenses (\$)	Profit (\$)
2025	200,000	150,000	50,000
2026	500,000	300,000	200,000
2027	1,200,000	600,000	600,000
2028	2,500,000	1,200,000	1,300,000
2029	5,000,000	2,500,000	2,500,000

How Your Proposed Minimum Viable Business Product (MVBP) Meets the Three Objectives of an MVBP [↗](#)

Objectives	How, specifically, does your MVBP meet this objective?
Value	The MVBP provides a centralized platform that allows climate intervention projects to optimize their deployment based on real-time satellite data and geographic optimization algorithms, thus delivering significant value by improving efficiency and effectiveness.
Pay	The economic buyer, which includes government agencies and private companies involved in climate interventions, is likely to pay a subscription fee starting at \$99/month for access to the platform, as it directly contributes to their operational efficiency and effectiveness in climate action.
Feedback	The MVBP creates a feedback loop by allowing users to input data and receive recommendations, which can be iteratively

improved based on user interactions and outcomes, ensuring that the platform evolves according to user needs and market demands.

Step 23 - Proof That Dogs Will Eat The Dog Food (PTC)

Here are some key financial metrics or performance indicators for businesses to help demonstrate quantitatively that customers will pay for your Minimum Viable Business Product.

Are Your "Customers "Eating the Dog Food"? Table [↗](#)

Stage in Funnel	Est. Industry Conversion Average (%)	Your Conversion Goal (%)	Actual Conversion Rate (%) and Trend	Next Steps if your actual conversion rate is lower than your goal
Initial Interest	10%	15%	8% (decreasing)	Increase marketing efforts, refine messaging, and target more specific demographics.
Click-through Rate	5%	10%	4% (stable)	Optimize landing pages and improve ad targeting.
Purchase and Pay	20%	25%	15% (decreasing)	Reassess pricing strategy and enhance value proposition.
Retention Rate	70%	75%	60% (decreasing)	Implement customer success initiatives and gather feedback.

Gross Margin, LTV, COCA Table [↗](#)

Metric	Expected for Short Term	Actual for Short Term	Next Steps
Gross Margin	60%	55%	Analyze cost structure and seek ways to reduce production costs.
Customer Lifetime Value (LTV)	\$1,200	\$1,000	Improve customer engagement and retention strategies.
Cost of Customer Acquisition (COCA)	\$200	\$250	Optimize marketing channels and reduce acquisition costs.

Define and Test Other Metrics Table [↗](#)

List Custom Metrics Here:	Expected for Short Term	Actual for Short Term	Next Steps
---------------------------	-------------------------	-----------------------	------------

Net Promoter Score (NPS)	50	40	Conduct customer interviews to understand dissatisfaction and improve product features.
Customer Churn Rate	5%	10%	Enhance onboarding process and provide better customer support.
Referral Rate	15%	10%	Implement referral incentives and improve customer satisfaction.

Step 24 - Product Plan (PTC)

Here are some product plans to help define your beachhead market. Look out for more information about your idea at the bottom of this page.

Product Plan for Beachhead Market [🔗](#)

Feature/Function	Benefit	How does it leverage your Core?	Priority	Estimated Resources Needed to Develop
Real-time data integration	Provides accurate, timely recommendations	Utilizes existing APIs and data processing skills	High	4 developers, 2 data scientists
Geographic optimization algorithms	Identifies optimal locations for interventions	Leverages expertise in geographic data processing	High	3 developers, 1 geospatial analyst
User-friendly dashboard	Simplifies decision-making for operators	Enhances user experience, making data actionable	Medium	2 UI/UX designers, 1 front-end dev
Reporting tools	Tracks effectiveness of interventions	Builds on existing data analytics capabilities	Medium	2 developers, 1 data analyst
API for third-party integration	Expands usability and market reach	Encourages collaboration with other climate projects	Low	2 developers, 1 API specialist

Product Plan for Follow-on Markets [🔗](#)

Feature/Function	Benefit	How does it leverage your Core?	Priority	Estimated Resources Needed to Develop
Advanced climate modeling tools	Enhances predictive capabilities	Builds on existing climate modeling knowledge	High	3 climate scientists, 2 developers
Multi-project coordination	Allows simultaneous management of multiple projects	Leverages the coordination layer concept	High	4 developers, 2 project managers
Customizable intervention strategies	Tailors solutions to specific regional needs	Utilizes data from various geographic sources	Medium	3 developers, 1 regional expert
Integration with carbon credit markets	Facilitates monetization of interventions	Expands market opportunities for users	Medium	2 developers, 1 business analyst
Educational resources and training	Supports user adoption and effective usage	Enhances customer engagement and satisfaction	Low	1 content creator, 1 trainer

Other Activities Beyond Functionality for the Beachhead Market [↗](#)

What other activities do you anticipate doing related to the product to help it scale after Version 1.0 for the beachhead market?

- Develop partnerships with climate intervention organizations to enhance data sharing and collaboration.
- Conduct regulatory assessments to ensure compliance with environmental standards.
- Create marketing campaigns targeting potential users in the climate intervention space.
- Establish a customer support system to assist users in navigating the platform.
- Explore additional sales channels, such as direct sales to government agencies and NGOs.

Moving Beyond the Beachhead Market – Analysis & Prioritization of Follow-on Market Candidates [↗](#)

Name of the Follow-On Market	Which market does it follow from?	Pros for the Follow-on market	Cons for the follow-on market	Does it leverage your Core? (Y/N)	Priority	Key Factors Needed to Succeed	Resources Required	Risk	Reward
Carbon Credit Market	Beachhead Market	High demand for carbon credits, potential revenue	Competitive market, requires strong partnerships	Yes	High	Strong marketing, partnerships	3 developers, 2 sales reps	Medium	High
Government Climate Initiatives	Beachhead Market	Access to funding and support from government	Bureaucratic hurdles, slow decision-making	Yes	Medium	Understanding of government processes	2 policy experts, 1 analyst	Medium	Medium
International Climate Organizations	Beachhead Market	Global reach, potential for large-scale impact	Complex coordination, varying regulations across regions	Yes	Medium	Strong networking, adaptability	2 international relations experts	High	High