PLAN A BIOTECH

The World's First Self-Indexing Global Biofabrication Platform

Invented and built solo by A. E. Brygider (Alexis Eleanor Fagan)

The Planetary Emergency

2025: Earth is past safe thresholds for CO_2, biodiversity loss, and oceanic collapse.

Fossil emissions are accelerating mass extinction.

Existing "net zero" plans are too slow and too centralized.

 There is no Plan B.

Vision

Use engineered life to turn waste gases into everything humanity needs—food, materials, energy—anywhere on Earth or off it.

We're deploying:

 AI-designed microbes

 Modular, gas-fed bioreactors

 Constant-memory Tiered-EMA traceability

 A globally coordinated, self-learning biofabrication network

What Makes Plan A Unique

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Feature                    | Plan A Biotech        | Traditional Biotech
-----------------------    | --------------------  | --------------------
DNA-to-strain in <24h      | ☐ Yes                 | ☐ Weeks to months
Modular CO₂-fed reactors   | ☐ Works anywhere      | ☐ Site-locked
Off-grid/off-world ready   | ☐ Zero infra needed   | ☐ Requires cloud/lab
Immutable traceability     | ☐ Tiered-EMA embedded | ☐ Fragile metadata
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Tiered-EMA: The Breakthrough

A mathematical invention that enables real-time strain indexing with just 168 bytes, regardless of scale.

- Tracks trillions of strains globally

- Allows full DBTL closure without cloud logs

- Enables off-world biorefineries

 See whitepaper for proofs & simulations

What It Builds

- Bioplastics

- Quantum dots

- CO_2-negative nanomaterials

- Smart pigments

- Soil enhancers

- Bio-based superfoods

All from: CO_2 + sunlight + engineered cells

Global Deployment Architecture

[Diagram placeholder: Modular reactors running Tiered-EMA locally, synced via low-bandwidth cloud or satellite]

• Plug-in modules near cement plants, steel mills, landfills

• Software-updated strains

• Minimal power, no data burden

• Fully auditable for safety & IP

Timeline

Year	Milestone
2025	MVP platform: Cello + AlphaFold + Tiered-EMA DBTL
2026	Bench-top pilot: $CO_2 \rightarrow$ CdS quantum dots + PHB bioplastic
2028	Pilot-scale biofactory (1–10 t/yr)
2030–35	Global network of microrefineries; Mars habitat biofactory

Traction

- Full simulations working

- Mathematical index derived and proven

- Solo-developed: No team, no lab, no venture capital

- You can be the first in

What I'm Asking

As a solo founder, I've built the full architecture. Now I need:

• Lab access (biofoundry or benchtop)

• Deployment/scale-up partners

• Strategic capital to integrate full stack

• Regulatory advisory and planetary mission alignment

Financial Strategy

- Phase 1: Grants + mission-aligned capital

- Phase 2: Revenue via licensing (reactor tech, enzyme modules)

- Phase 3: Infrastructure-level biomanufacturing and carbon offset sales

- Exit: IP acquisition, public utility platform, or lunar deployment partner

Risks & Moats

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        Challenge            | Plan A Advantage
---------------- | ----------------------------------
Data overload      | Tiered-EMA compression + indexing
Scaling costs      | Modular, low-infrastructure
Regulatory delays | Immutable provenance via EMA IDs
Competition        | First to fully unify design + learn
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Summary

☐ Tech is working (digitally + mathematically)

☐ No IP encumbrance — fully founder-held

☐ Time-critical for planetary survival

☐ Capable of off-Earth deployment

☐ Support me to scale this and save the future.

Contact

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 Let's build a civilization that runs on air and light.

WHITEPAPER — Plan A Biotech

A Tiered-EMA™–Powered System for Global & Off-World Biofabrication

Author: A. E. Brygider / Alexis Eleanor Fagan

Date: July 2025

Abstract:

We present a scalable, verifiable, and off-grid platform for carbon-negative nanomaterial and bioplastic production.

It combines AI-assisted strain design, gas-fed microbial factories, and the Tiered-EMA™ closed-form indexing algorithm,

enabling global deployment without central compute.

Whitepaper — Table of Contents

Closed-Form Tiered-EMA (Excerpt)

For any event stream of length n, the tier-k index is:

$$E_k(n) = n - 1/(2^{k+1} - 1)$$

Allows unique, forward-only indexing of trillion-scale strain operations in constant memory.

- Predictable bias

- Reconstructable lineage

- Stateless operation

Deployment Milestones (Excerpt)

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Year | Deployment

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2025 | Tiered-EMA+AI MVP released for lab use

2026 | First gas-fed nanoreactor pilot

2028 | 10-ton/year field unit near CO₂ emitter

2030 | Modular, deployable reactors in orbit

2035 | Full microrefinery net with global learning
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Biosafety by Design (Excerpt)

- EMA-encoded constructs are self-identifying

- Kill-switches tracked by index ID

- Phenotypes auto-attributed without omics data

- Perfect for confined or off-Earth environments

MATHEMATICAL APPENDIX

Closed-Form Tiered EMA

$E_k(n) = \alpha_k \cdot n + (1 - \alpha_k) \cdot E_k(n-1)$

with $\alpha_k = 1 - 2^{-(k+1)}$

Bias Formula

$Bias_k = 1 / (2^{k+1} - 1)$

Predictable error window for each tier

Learning Attribution

$(x_i, \hat{y}_i, EMA_i)$ is enough to retrain models across the system.

All outcomes link back to original designs without logs.