AFFOG — Automated Factory Farm Objection Generator

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1. Executive Summary

AFFOG (Automated Factory Farm Objection Generator) is a civic-tech advocacy platform that helps trusted advocates respond to factory-farm permit filings quickly using legally grounded objection drafts and structured workflows.

Factory-farm permits routinely pass through complex legal processes faster than communities, activists, and NGOs can respond. The legal drafting required is specialized, time-sensitive, and difficult to scale. AFFOG closes this execution gap by combining permit discovery, AI-assisted legal drafting, objection management workflows, and strict governance controls into a single platform.

The platform is currently deployed on Railway, with a live ingestion pipeline pulling permits from 2 trusted sources across 8 countries, backed by 40 legal frameworks. Access is restricted to manually approved users to mitigate legal risk and misuse. The next milestone is a 90-day controlled pilot with vetted advocacy partners.

Key Facts	
Project Type	Civic-tech advocacy platform
Current Status	Deployed, ingestion live, core tests passing
Ingested Permits	207
Legal Frameworks	40 laws across 8 countries
Team	Solo founder/developer (Abid)
Funder Ask	$2,150 microgrant for 90-day pilot

2. Problem Statement

Factory-farm permits are legal instruments that authorize the construction, expansion, or operation of concentrated animal feeding operations (CAFOs). These permits move through regulatory channels on fixed timelines — and communities that want to object must do so within narrow filing windows.

The problem is threefold:

Fragmented permit data. Permit filings are published across dozens of regulatory bodies, in different formats, with inconsistent notification practices. There is no single source of truth for active factory-farm permits. Advocacy teams must manually monitor multiple agencies, often missing filings entirely.

Slow, specialized legal drafting. Writing a legally grounded objection requires knowledge of environmental law, animal welfare statutes, zoning regulations, and jurisdiction-specific procedures. Most community advocates and small NGOs do not have access to legal counsel who can draft objections at the pace permits demand.

Inability to scale. Even well-resourced advocacy organizations cannot manually draft unique objections for every permit filing. The volume of permits far exceeds the drafting capacity of any single team, meaning that the majority of factory-farm permits receive zero formal public objections.

The result: Low participation in high-impact permit windows, even when community concern is high. Permits that could be challenged pass unopposed, and the legal record reflects silence rather than opposition.

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3. Solution

AFFOG addresses each constraint through four integrated platform capabilities:

Permit Discovery & Structured Records. AFFOG runs a source-driven ingestion pipeline that pulls permit data from trusted sources, validates it, transforms it into structured records, and makes it browsable for approved users. The system tracks ingestion health, run history, and source status — so the team always knows whether the data pipeline is functioning.

AI-Powered Objection Drafting. When an approved user selects a permit, AFFOG generates a draft objection using Google Gemini, grounded in a legal frameworks database of 40 laws across 8 countries. If the AI layer is unavailable or produces low-confidence output, the system falls back to a template-based generation mode that still produces structured, legally referenced drafts. This dual-path approach ensures the platform never produces empty or unsupported output.

Objection Workflow. Users can save generated drafts, review and edit them, and send them via the platform's email delivery endpoint. The workflow is designed to enforce human review — drafts are explicitly positioned as starting points, not final submissions.

Admin Governance & Safety. The platform operates on a controlled-access model. New users must register and be manually approved by an admin before they can browse permits or generate objections. Rate limiting, CORS hardening, security headers, and platform feature flags provide additional layers of abuse prevention. A private admin UI enables approval/revocation workflows and runtime diagnostics.

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4. Project Journey

Phase A — Concept & Hackathon Foundation

AFFOG started as a continuation of a Mumbai Code4Compassion (C4C) effort focused on farm animal advocacy tooling. The original concept was to auto-detect factory-farm permit filings and reduce the friction of drafting legal objections using AI assistance. The project was built during hackathon sprints with collaborators contributing to initial planning.

Phase B — MVP Full-Stack Implementation

The first functional version was a unified Next.js + Express application. This phase delivered: permit browsing UI, AI-assisted objection generation, user authentication, objection save/retrieve flow, email send path, legal frameworks API endpoint, and templated fallback generation. This established the core product loop — discover a permit, generate a draft, save it, send it.

Phase C — Deployment & Integration Stabilization

Early deployments surfaced issues with split frontend/backend routing in production. These were resolved by consolidating to a single-process runtime (`server.js`) with same-origin API flow. The application was deployed to Railway with health check endpoints, giving the project its first stable production URL.

Phase D — Data Ingestion & Source Operations

The ingestion layer was built out with source-driven pipelines, validation logic, health monitoring endpoints, source transforms, and ingestion run/status history. This moved the platform from manually entered permit data to automated, auditable data flows from trusted external sources.

Phase E — Security & Legal-Risk Hardening

Based on mentor and internal feedback about legal risk, a comprehensive hardening pass was completed. This included: CORS allowlisting with proxy support, strict security headers, route-specific rate limits, runtime admin diagnostics, a manual-access approval model that hides permits and generation from unapproved/anonymous users, admin approval APIs, and a private admin review UI route. This phase transformed AFFOG from an open tool into a controlled-access platform with explicit governance.

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5. Core Features

5.1 Product Features

Permit Feed Ingestion. Automated ingestion from trusted sources with validation, health monitoring, source transforms, and run history. Currently pulling from 2 trusted sources with 207 permits ingested.

Permit Browsing. Structured, searchable permit records available to approved users. Permits include jurisdiction, facility details, and relevant legal frameworks.

AI-Assisted Objection Drafting. Google Gemini-powered generation that references the legal frameworks database. Produces structured drafts grounded in applicable laws. Falls back to template-based generation when AI is unavailable.

Objection Save & Management. Users can save generated drafts to their account, retrieve them later, edit them, and manage a personal objection history.

Email Delivery. Send endpoint that allows users to deliver finalized objections directly from the platform.

Dashboard & Impact Pages. Overview metrics showing platform activity, permit coverage, and estimated animal welfare impact.

Survey & Feedback Collection. In-platform survey page for collecting user feedback on draft quality and workflow experience.

5.2 Admin & Operations Features

Quota Controls & Feature Flags. Platform-level controls for managing generation limits and enabling/disabling features.

Source Management. Preview, validate, and sync workflows for permit data sources.

Ingestion Health & History. APIs for monitoring ingestion pipeline health and reviewing run history.

Runtime Config Inspection. Diagnostic endpoint for inspecting current runtime configuration in production.

Manual Access Approval. Admin-controlled approval workflow — new users must be vetted before accessing permits or generation.

Private Admin Review UI. Dedicated admin-only page for reviewing pending access requests and managing approvals/revocations.

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6. Technical Architecture

Stack Overview

Layer	Technology	Notes
Frontend	Next.js 14 (App Router), React 18, Tailwind CSS 4	Single-page app with server-side rendering
Backend	Express API on Node.js	Runs as single process with frontend via `server.js`
AI Layer	Google Gemini	Template fallback for reliability
Primary Storage	Supabase	Users, permits, objections
Fallback Storage	JSON files	Operational datasets, some counters
Deployment	Railway	Single service, healthcheck at `/api/health`
Testing	Contract + module phase tests	13 tests in `test/`, all passing locally

Architecture Decisions

Single-process runtime. Frontend and backend run in a unified `server.js` process. This was chosen after split routing caused deployment issues — the single-process model simplifies Railway deployment and eliminates cross-origin complexity.

Dual-path generation. AI generation via Gemini is the primary path, but a template-based fallback ensures the platform always produces output. This prevents user-facing failures when the AI service is down or returns low-quality results.

Supabase + JSON hybrid. Supabase handles durable user/permit/objection data. Some operational datasets (ingestion metadata, counters) still use JSON files — this is a known technical debt item, as JSON files can reset on ephemeral Railway deployments.

Controlled access by default. The architecture enforces that unauthenticated and unapproved users cannot access permit data or generation endpoints. This is a deliberate security-first posture driven by legal risk concerns.

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7. Team

AFFOG is currently built and maintained by a **solo founder/developer (Abid)**, who handles full-stack development, architecture, integration, deployment, security hardening, and project strategy.

During the initial hackathon and planning phases, several collaborators contributed to early development:

Contributor	Role During Planning/Hackathon
Ard	Python, AI, NLP
Alle	LLM integration
Rya	Backend, API
Quinta	Frontend, UI

Post-hackathon development, deployment, hardening, and all current operations are handled solely by Abid.

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8. Current Metrics & Production Status

Production API Snapshot (February 24, 2026)

Metric	Value
Health status	`ok`
Storage mode	`supabase`
Ingested permits	207
Submitted permits	0
Trusted permit sources	2
Legal frameworks — total laws	40
Legal frameworks — total countries	8

Public Stats Endpoint

Metric	Value
Total permits (stats view)	18
Countries covered	8
Potential animals protected	2,847,000
Objections generated	1

Test Coverage

Metric	Value
Phase tests detected	13
`test:all:local` status	Passing

Known Metrics Gap

There is a discrepancy between the ingestion pipeline total (207 permits) and the public stats endpoint output (18 permits). This is a known issue — the stats aggregation layer does not yet fully reflect all ingested data. See Section 10 (Problems Facing) for details.

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9. Wins & Achievements

End-to-end platform shipped. AFFOG is a fully functional, deployed product — not a prototype or mockup. Users can register, get approved, browse permits, generate objections, save drafts, and send emails.

Unified runtime architecture. The single-process `server.js` deployment model is stable on Railway, resolving earlier split-routing issues that plagued initial deployments.

Live ingestion pipeline. Source-driven data ingestion with validation, health monitoring, and run history — pulling real permit data from 2 trusted sources.

Comprehensive legal framework database. 40 laws across 8 countries, including AWBI-aligned India updates. This provides genuine legal grounding for generated objections rather than generic AI output.

Security hardening completed. CORS allowlisting, strict headers, route-specific rate limits, proxy support — the platform meets a meaningful security baseline.

Controlled-access model implemented. Manual approval workflow, restricted access for unapproved users, private admin review UI — this directly addresses the highest-priority feedback from mentors about legal and misuse risk.

Continuous testing. 13 contract/module phase tests passing locally, providing a regression safety net.

Legal risk playbook created. A documented framework for understanding and mitigating the legal risks of AI-generated legal content.

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10. Problems Facing

10.1 Product & Adoption

Zero real-world objection throughput. While the platform is technically functional, no objections have been submitted through the full workflow in production. The system has generated 1 objection but 0 have been submitted. Until real advocates use the platform to file real objections, the product thesis is unvalidated.

No active user base. The controlled-access model is necessary for safety, but it also means the platform currently has no validated external users. The approval pipeline exists but has not been exercised at scale.

Feedback loop is immature. The survey page exists, but there is no structured analytics pipeline connecting user behavior to product iteration. Feedback collection is manual and ad-hoc.

10.2 Data & Metrics

Ingestion-to-stats inconsistency. The ingestion pipeline reports 207 permits, but the public stats endpoint shows 18. This means either the stats aggregation is filtering aggressively, or there is a sync issue between ingestion and the stats layer. This undermines confidence in reported metrics.

Ephemeral storage risk. Some operational counters are backed by JSON files on disk. Railway deployments are ephemeral — if the container restarts, these files reset. This can silently lose operational data (ingestion counts, feature flag states) without warning.

10.3 Legal & Trust

AI hallucination risk. Generated objections may contain hallucinated legal citations, incorrect statute references, or fabricated procedural claims. This is the single highest legal risk — a submitted objection containing false legal claims could expose users and the platform to legal liability or reputational harm.

Output quality depends on input quality. The quality of generated objections varies significantly based on the quality and completeness of the underlying permit data. Sparse or poorly structured permit records produce weaker drafts.

Missing legal disclaimers. The platform does not yet have published Terms of Use, Legal Disclaimer, or Privacy Policy. There is no mandatory "this is not legal advice" acknowledgement in the generation workflow. These are baseline legal protections that must exist before any public-facing pilot.

10.4 Security & Governance

Approval records not durably stored. Access approval/revocation records should be in Supabase but may currently rely on less durable storage. If approval records are lost, the platform cannot verify who was approved and when.

No audit trail. There are no explicit audit logs for admin actions (approvals, revocations, configuration changes). If the platform faces a legal or compliance challenge, there is no record of governance decisions.

10.5 Operational

Solo maintainer risk. All development, operations, security, and strategy currently depend on a single person. Any disruption to the maintainer's availability means the platform has zero operational coverage.

No monitoring or alerting. Beyond the health check endpoint, there is no production monitoring, error tracking, or alerting. If the ingestion pipeline fails or the Gemini API starts returning errors, no one is automatically notified.

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11. Opportunities

11.1 Market & Impact Opportunities

Unserved advocacy gap. There is no widely available tool that combines permit monitoring with AI-assisted legal drafting for factory-farm objections. AFFOG occupies a genuinely novel position — the problem is real, the legal mechanism (permit objections) is real, and no competitor is addressing it at the tooling level.

Expandable legal framework. The platform's legal frameworks database (40 laws, 8 countries) is a moat. Expanding this to more jurisdictions and legal domains (environmental, zoning, water rights) increases the platform's value and defensibility.

NGO partnership pipeline. Animal welfare NGOs, environmental justice organizations, and legal aid clinics are natural partners. These organizations have the domain expertise and user base that AFFOG needs, and AFFOG solves a real workflow problem they face.

International scalability. Factory farming is a global issue. The platform already covers 8 countries. Expanding to additional jurisdictions — particularly the EU, Brazil, and Southeast Asia where factory farming is growing rapidly — represents a significant growth vector.

Broader civic-tech pattern. The AFFOG architecture (permit monitoring → AI-assisted legal drafting → controlled workflow → governance) is a reusable pattern. The same approach could be adapted for environmental permits, zoning objections, public comment periods, and other civic participation workflows.

11.2 Funding & Grant Opportunities

Microgrant readiness. The current funder ask ($2,150 for a 90-day pilot) is small enough to be accessible from animal welfare foundations, civic tech grants, and hackathon prize pools. The platform's deployment status makes it grant-ready — this is not a pitch for building something, it's a pitch for validating something already built.

Impact metrics potential. If the pilot produces even modest throughput (10–20 submitted objections from vetted users), the resulting data creates a compelling case for larger grants from foundations like Open Philanthropy, Animal Charity Evaluators, or civic tech funders.

11.3 Technical Opportunities

Stronger citation validation. Adding automated validation that checks generated legal citations against the frameworks database before presenting them to users would significantly reduce hallucination risk and increase trust.

Permit monitoring alerts. Notifying approved users when new permits are ingested in their jurisdiction creates a proactive workflow rather than requiring users to check the platform manually.

Multi-language support. Given the 8-country legal framework, supporting objection generation in multiple languages is a natural extension that dramatically increases accessibility.

API for partner integration. Exposing a controlled API for partner organizations to integrate AFFOG's permit data and generation capabilities into their own workflows could accelerate adoption without requiring users to switch platforms.

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12. Feedback Summary & Actions Taken

12.1 Feedback Themes

Feedback has been collected from mentors, internal review, and early users. Three dominant themes emerged:

Theme 1: Legal Risk Is the Top Concern. Mentors and reviewers consistently flagged the risk of AI-hallucinated legal claims, potential misuse by bad actors, and the reputational/legal exposure of operating a platform that generates legal content. This was identified as the single most important issue to address before any public-facing usage.

Theme 2: Trust Posture Needed Strengthening. Reviewers felt the platform needed stricter access controls, a clearer governance model, and a more visible review process. The concern was that an open-access generator could be weaponized or produce content that damages the credibility of legitimate advocacy efforts.

Theme 3: UX Trust Cues. The original visual design used a dark, high-contrast aesthetic that reviewers felt conveyed an aggressive or underground tone. Feedback recommended shifting to a lighter, more professional presentation to build trust with NGO partners and funders.

12.2 Actions Taken

Feedback	Action Taken
Legal risk of AI hallucination	Legal risk playbook created (`docs/LEGAL_RISK_PLAYBOOK.md`)
Misuse risk	Manual account approval implemented; anonymous access blocked
Need for governance	Private admin approval workflow built; approval-review endpoints added
Access controls	Permits and generation hidden from unapproved users
Visual tone	Light-theme migration work initiated
Legal disclaimers	Identified as required — not yet implemented (see Section 10)

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13. Legal, Compliance & Risk Position

13.1 Current Legal-Risk Controls

Restricted Access Model. Users must authenticate and receive manual admin approval before accessing permits or generation. This prevents anonymous or unvetted usage.

Rate Limiting & Abuse Controls. Route-specific rate limits prevent automated abuse of generation endpoints. Platform feature flags can disable generation entirely if needed.

Security Hardening. CORS allowlisting, strict security headers, and proxy support protect against common web security threats.

Data Source Trust. Only permits from validated, trusted sources are ingested. Source validation workflows verify data quality before records enter the system.

13.2 Legal Posture

AFFOG is positioned as **decision-support tooling, not legal representation**. The platform generates draft content that is explicitly intended for human review, editing, and judgment before any external submission. The platform does not submit objections on behalf of users — users make the decision to send.

This positioning is critical. If the platform were characterized as providing legal advice or legal services, it would be subject to unauthorized practice of law regulations in most jurisdictions.

13.3 Required Legal Controls (Not Yet Implemented)

These controls are required before any public-facing pilot:

1. **Terms of Use** — defining the platform's role, user responsibilities, and liability limitations.
2. **Legal Disclaimer** — explicit statement that generated content is not legal advice and must be reviewed by the user.
3. **Privacy Policy** — covering data collection, storage, and processing practices.
4. **Mandatory Acknowledgement Gate** — a required "I understand this is not legal advice" step in the generation workflow, before any draft is shown to the user.
5. **Approval/Revocation Audit Trail** — durable logs of all admin approval and revocation actions with timestamps.

Detailed risk analysis is documented in `docs/LEGAL_RISK_PLAYBOOK.md`.

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14. Outreach & Reach

14.1 Current Outreach Status

Outreach strategy has been defined targeting three channels:

- **NGO and community organizations** — direct outreach to animal welfare and environmental justice groups.
- **Slack and online activist communities** — sharing in advocacy-focused channels and forums.
- **Partner channels** — leveraging existing relationships with hackathon networks and C4C alumni.

Promotion messaging has been drafted for activist networks and potential reviewer cohorts. A funder memo and pitch deck have been prepared.

14.2 Current Reach

Metric	Value
Core team contributors (historical)	5 (hackathon phase)
Current active maintainer	1
External approved users	To be read from admin API
Outreach contacts tracked	Not yet formally tracked

14.3 Gaps

No CRM or outreach tracking. There is no formal system for tracking contacts reached, responses received, demos booked, or pilot participants onboarded. This makes it impossible to measure outreach effectiveness or manage a pipeline.

No durable user count reporting. Approved and pending user counts should be read from the admin access-review API, but a durable reporting table is needed for reliable historical tracking.

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15. Pitch Material

One-Line Pitch

AFFOG is a controlled-access advocacy platform that helps trusted campaigners respond to factory-farm permits faster with legally grounded objection workflows.

60-Second Pitch

Factory-farm permits often move faster than communities can respond, because legal drafting is technical and time-sensitive. AFFOG reduces that gap by combining permit data, legal-framework-supported drafting, and objection workflows in one platform.

This is not an open public generator. Permit and generation access is restricted to manually approved users to reduce misuse and legal risk. The platform is deployed, ingestion is live with 207 permits across 8 countries, and core tests are passing.

The next milestone is a controlled pilot that proves adoption and objection throughput with vetted users and clear legal safeguards.

Elevator Pitch (15 seconds)

AFFOG lets animal welfare advocates generate legally grounded objections to factory-farm permits in minutes instead of weeks — with built-in safety controls to prevent misuse.

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16. 90-Day Roadmap

Days 1–30 — Legal & Policy Foundation

- Publish Terms of Use, Legal Disclaimer, and Privacy Policy.
- Add mandatory "not legal advice" acknowledgement gate in the generation workflow.
- Standardize the approval SOP and create a reviewer checklist for admin use.
- Migrate approval records to durable Supabase storage.

Days 31–60 — Controlled Pilot

- Onboard a vetted user cohort (target: 5–15 approved advocates from partner NGOs).
- Run the full workflow end-to-end: permit discovery → generation → review → send.
- Collect structured quality feedback on draft accuracy, usability, and legal confidence.
- Resolve the ingestion-to-stats metrics gap and ensure reporting consistency.

Days 61–90 — Outcomes & Phase 2 Readiness

- Publish pilot outcome report covering:
    - Number of approved users onboarded.
    - Number of objection workflows completed.
    - Number of drafts generated and reviewed.
    - Safety incidents and mitigations (if any).
    - User satisfaction and feedback themes.
- Assess phase-2 funding readiness based on pilot data.
- Draft phase-2 proposal if pilot metrics meet thresholds.

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17. Strategic Priorities

Listed in order of urgency:

1. **Legal compliance first.** Publish Terms of Use, Legal Disclaimer, Privacy Policy, and mandatory acknowledgement gate. This is a hard blocker for any external usage.
2. **Durable storage migration.** Move all operational records (approvals, audit logs, counters) to Supabase. Eliminate dependency on ephemeral JSON files.
3. **Audit logging.** Implement explicit audit logs for all admin actions — approvals, revocations, configuration changes, and abuse incidents.
4. **Pilot execution.** Onboard vetted users and prove the end-to-end workflow produces real, submitted objections.
5. **Citation validation.** Add automated checks that verify generated legal citations against the frameworks database before showing drafts to users.
6. **Outreach infrastructure.** Build a lightweight outreach tracking system (even a spreadsheet) to manage the partner pipeline.
7. **Monitoring & alerting.** Add basic production monitoring so pipeline failures and API errors are detected automatically.

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18. Funding

Current Ask

Amount: $2,150 microgrant **Purpose:** Fund a 90-day controlled pilot **Goal:** Convert technical readiness into measurable advocacy outcomes under a strict safety model

Budget Allocation (Proposed)

Category	Estimated Cost	Purpose
Infrastructure	~$300	Railway hosting, Supabase tier, domain
Outreach	~$200	Partner communication, demo tooling
Legal review	~$500	Basic legal review of Terms/Disclaimer/Privacy
Pilot operations	~$500	User onboarding, feedback collection, reporting
Contingency	~$650	Unexpected costs, extended pilot needs

Funder Fit

The ask is sized for: animal welfare microgrants, civic tech seed funding, hackathon follow-on grants, and small foundation grants from organizations focused on factory farming, food systems, or civic participation.

19. Appendix: Key Documents

Document	Path	Description
Product Overview	`README.md`	High-level product description and setup
Project Status	`PROJECT_STATUS.md`	Current status snapshot
Session Handoff	`SESSION_HANDOFF.md`	Context for resuming development
Pitch Material	`PITCH.md`	Funder-facing pitch content
Execution Notes	`docs/EXECUTION_NOTES.md`	Hardening and deployment log
Legal Risk Playbook	`docs/LEGAL_RISK_PLAYBOOK.md`	Detailed legal risk framework
Hackathon Plan	`hackathon_plan.md`	Original planning context

AFFOG Project Documentation v1.0 Solo maintainer: Abid | Platform: Deployed on Railway Contact: [To be added]