

PORTFOLIO DELIVERABLE - ANALYTICS & TECHNICAL

# Beacon Solar New England Measurement Architecture

*GA4 event taxonomy, GTM container plan, Looker Studio dashboard spec, Search Console workflows, and the AEO/GEO playbook.*

Prepared by Nicholas Bushell - NBP Strategy - [nbpstrategy.com](https://nbpstrategy.com)

*Spec work: fictional brand created to demonstrate senior-level strategy and execution.*

# Architecture Overview

Measurement principle: one north-star conversion (assessment form submission), instrumented once in GTM, read everywhere through GA4, visualized for decisions in Looker Studio, and fed by search intelligence from GSC. No tool overlap, no double-counting, one source of truth per question.

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| Collection | GTM (web container) - all tags, no hardcoded pixels in site code |
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Behavior

## GA4 - Event Taxonomy & Audiences

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### Event taxonomy (snake\_case, params in brackets)

assessment\_start [form\_location] - first field focused; the true top of funnel  
assessment\_submit [form\_location, bill\_band] - NORTH STAR - marked as key event  
assessment\_report\_view [days\_since\_submit] - report link opened from email  
call\_booked [source\_email] - consultation scheduled; second key event  
calculator\_use [scenario] - savings calculator interaction  
content\_engage [content\_group, percent\_scrolled] - 75% scroll on money pages  
email\_click [sequence, email\_number] - from UTM autotagging convention  
outbound\_social [platform] - social profile clicks for loop measurement

### Configuration standards

- bill\_band registered as custom dimension (event scope); no PII in any param, ever
- Content groups: money-page / blog / town-page / system - set via GTM datalayer push
- Attribution: paid-and-organic, data-driven model, 90-day click window
- Internal traffic + Vercel preview URLs filtered at property level
- Audiences built for later paid: calculator users (30d), 75%-scroll money-page readers (30d), assessment starters who didn't submit (7d) - the retargeting pool

## GTM - Container Plan

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### Tags / Triggers / Variables

TAGS: GA4 config (all pages) - GA4 event tags per taxonomy above - Meta pixel (base + lead on assessment\_submit) - future: TikTok pixel behind the same triggers.

TRIGGERS: form\_start (first-field visibility trigger), form\_submit (element visibility on success message - never trust the button click), scroll-75 scoped to money-page content group, calculator element click, outbound-link click matching social domains.

VARIABLES: datalayer variables for form\_location / bill\_band / content\_group; lookup table mapping URL path to content\_group; constant for GA4 measurement ID.

### Governance

Naming: GA4 - Event - assessment\_submit; folders per platform; every container version annotated with change + author. Publish flow: preview mode with DebugView on staging, then publish, then live-verify in GA4 Realtime within 24h. Consent Mode v2 configured with default-denied analytics\_storage for EU visitors (future-proofing).

## Looker Studio - Executive Dashboard Spec

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### Data sources

GA4 native connector + GSC connector (both site and URL-prefix properties). Blend GSC clicks with GA4 sessions on landing-page dimension for the SEO page. Refresh: 12h cache, manual refresh before Monday review.

### Page 1 - Funnel (the only page most stakeholders see)

Scorecards: assessment starts, submits, submit CVR, calls booked - each with 28-day comparison. Funnel chart: sessions > engaged sessions > assessment\_start > assessment\_submit > call\_booked. Channel table: source/medium x submits x CVR, sorted by submits.

### Page 2 - SEO & Content

GSC clicks/impressions/CTR/avg position trend; top queries table with page-1 filter; money-page table blending GSC clicks + GA4 CVR (the 'rank vs revenue' view); content-group performance bars.

### Page 3 - Social & Email

UTM-driven: sessions and submits by platform/series (social), by sequence/email\_number (email). One chart per question: 'which series drives assessments?' and 'which email in the funnel converts?'

### Design rules

Every chart answers a stated question written in its header. No vanity metrics on page 1. Brand navy/amber theme. Date control + channel filter global. If a chart hasn't changed a decision in 60 days, it gets deleted.

## Search Console - Operating Workflows

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### Weekly (15 min)

- Indexing: Pages report - any money page or town page excluded gets same-day investigation
- Performance: filter queries containing 'cost', 'worth', 'incentive' - watch position deltas week-over-week
- Wins log: any query crossing into top 10 gets logged for the internal-linking pass

### Monthly (45 min)

- Query mining for AEO: export queries phrased as questions (starting who/what/how/is/do/should). Any question with impressions but no dedicated answer block becomes a content-brief candidate.
- Striking distance: positions 11-20 with high impressions - each gets an internal-link + refresh pass before any new content is written.
- CTR audit: pages with position < 5 but CTR below vertical median get a title/meta rewrite test, logged with date for before/after comparison.

## AEO & GEO - The Answer Engine Playbook

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### What we optimize for

AEO: being the extracted answer in Google AI Overviews, featured snippets, and People Also Ask. GEO: being cited by generative engines (ChatGPT, Perplexity, Gemini) when users ask solar questions conversationally. Both reward the same substrate: extractable answers, verifiable data, consistent entities.

### On-page standard (every money page and post)

1. 40-60 word direct-answer block immediately under the H1 - written to be quoted whole
2. H2s phrased as the actual question users ask (mirrors GSC query mining)
3. FAQ schema + Article schema with author, publisher, dates (already specced in briefs)
4. One original statistic per page ('19% of roofs we assess shouldn't go solar') - engines cite sources of primary data, not summarizers of it
5. Tables for anything numeric - the most extraction-friendly format

### Entity and citation building

Consistent NAP + sameAs schema linking site, GBP, and social profiles so engines resolve Beacon as one entity. The Reddit data posts and any local-press pickup of original stats are GEO assets: generative engines weight independently-hosted mentions. Quarterly: run the 12 highest-value questions through ChatGPT/Perplexity/AI Overviews manually, log whether Beacon is cited, and trace any competitor citation to its source.

### Measurement reality check

AEO/GEO attribution is imperfect by nature. Proxies tracked monthly: AI Overview presence for target queries (manual log), GSC impressions on question queries, branded search volume trend, and 'how did you hear about us' free-text field on the assessment form - the humble field that catches what analytics cannot.