

InventWood Comments on SB 905 Information Solicitation

October 6, 2025

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on SB 905 Information Solicitation – Carbon Capture, Removal, Utilization, and Storage Program

Dear Chair Sanchez and Members of the Board,

On behalf of **InventWood, Inc.**, I am pleased to submit the attached comments in response to CARB’s solicitation regarding the implementation of Senate Bill 905.

InventWood, a spin-out from the University of Maryland, is now commissioning an 89,000 sq. ft. manufacturing facility in Frederick, Maryland, supported by the U.S. Department of Energy ARPA-E SCALEUP program, DARPA, and private investment. We are commercializing **SuperWood**, a densified, cellulose-based material that is stronger than steel, fire-resistant, and highly durable for building and infrastructure applications.

Our mission is to create materials of enduring beauty and purpose in the buildings and infrastructure that shape our world. SuperWood is a biogenic, low-carbon, high-performance alternative to steel and concrete—capturing carbon through the natural growth of trees and locking it away for generations while promoting wildfire resilience, sustainable forestry, and community well-being.

Already, SuperWood has attracted strong interest from California stakeholders, including architects, builders, and individual homeowners, as well as those in wildland–urban interface (WUI) regions, who are looking for fire-resistant, low-carbon solutions. Given this interest, we anticipate being an active participant in the California market and potentially a regional manufacturer as we scale.

In parallel, InventWood participates in the DARPA WUD (Wood Upcycling for Defense) program, which converts low-value, underutilized forest biomass into high-performance engineered wood products. This work is directly relevant to California, where forest health, wildfire-risk reduction, and biomass use are urgent policy priorities. By connecting upcycling to carbon storage in durable products, SB 905 can turn a forest-management challenge into a climate solution.

While much of SB 905 and CARB’s solicitation focuses on geologic storage and large-scale capture, it is equally important that the framework explicitly account for **durable utilization pathways**. The statute authorizes “carbon capture, removal, utilization, and storage,” and the

“utilization” component clearly encompasses the transformation of biomass into long-lived products that both store carbon and displace carbon-intensive materials. Durable biogenic storage in engineered wood products is already recognized in state policy through the **Buy Clean California Act, AB 2446, CALGreen embodied-carbon standards**, and the **California Joint Institute for Wood Products Innovation, California Board of Forestry and Fire Protection January 2025 Assessment of Innovative Wood Products Procurement Protocols**. Federal agencies, such as the DOE, EPA, and DARPA, are similarly advancing protocols and investments that validate durable-product storage as a credible removal strategy. By ensuring that SB 905 implementation reflects this broader scope, CARB can not only safeguard geologic projects but also scale near-market solutions like SuperWood that deliver durable storage, forest health benefits, and immediate embodied carbon reductions in California’s built environment.

Most importantly, SB 905 is not just a framework for safe projects but also a once-in-a-generation chance to influence **markets**. To reduce risks for private investment and accelerate deployment, CARB should integrate financial-responsibility tools with clear market-making incentives that guide procurement in both retrofits and new construction away from carbon-intensive materials and toward materials that capture and store carbon.

Our recommendations align with **the State of California’s Assessment of State Innovative Wood Products Procurement Protocols (January 2025)**, which promotes fostering an innovative wood-products industry to boost carbon capture and support local economies. SB 905 offers a timely and effective way to turn those findings into regulatory practice.

We respectfully urge CARB to:

- Define and recognize “**Biogenic Carbon Removal and Storage in Durable Products**” as a distinct pathway under SB 905.
- Develop protocols and verification standards for durable-product carbon storage, based on existing frameworks from the DOE, EPA, and ISO/ASTM.
- Develop market incentive mechanisms, including Buy Clean/AB 2446 alignment, CALGreen compliance options, procurement preferences/minimum shares, and incentives for new construction and retrofits, to increase demand for carbon-storing materials.
- Integrate durable biogenic storage into existing state programs, including embodied carbon in buildings, cap-and-trade, corporate disclosure, and public procurement.
- Create a public registry of carbon-storing construction projects to showcase California’s leadership in carbon-smart building practices.

By recognizing durable engineered wood products like SuperWood within SB 905 and pairing that recognition with strong procurement and retrofit incentives, California can speed up embodied-carbon reductions, expand near-market climate solutions, enhance forest resilience, and create a global example for incorporating low-carbon materials into the state’s carbon-neutrality efforts.



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We thank CARB for the opportunity to contribute and are ready to provide additional technical data, product information, or demonstration project case studies as the Board moves forward with rulemaking.

Sincerely,

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Q1. In addition to the terms defined in statute, are there other key terms that should be defined? Please provide any proposed definitions with applicable citations.

Response to Question 1 – Key Terms

Biogenic Carbon Removal and Storage (BCRS)

A process in which carbon fixed via photosynthesis is captured in biomass and durably stored in long-lived products (e.g., engineered wood, densified cellulose materials) with a typical service life ≥ 50 years in buildings and infrastructure.

References: IPCC 2006 Guidelines & 2019 Refinement (Harvested Wood Products as carbon stocks); U.S. EPA Biogenic Accounting Framework; ISO 14067.

Durable Product Pathway (DPP)

A carbon removal/utilization pathway where captured CO₂ (biogenic or atmospheric) is embedded in products that provide verifiable, long-term storage and displace higher-carbon alternatives. Examples include CLT, VLT, and densified wood (e.g., SuperWood).

References: ISO 14040/44; ISO 14025 & EN 15804; California Buy Clean documentation.

Service-Life Carbon Storage

The duration during which carbon remains stored in a product throughout its functional use phase (typically 50–100+ years for building materials), before end-of-life treatment.

References: DOE/USFS HWP lifetimes; ISO 21930.

End-of-Life Carbon Fate

The distribution of carbon outcomes when a product reaches end-of-life—e.g., reuse, recycling into other long-lived applications, energy recovery (with or without CCS), or landfill storage with modeled decay.

References: IPCC/UNFCCC HWP guidance; EPA WARM.

Biogenic Utilization (Non-Fuel)

The process of converting biomass into durable, non-combustible products that store carbon and replace more carbon-intensive materials, providing storage and substitution benefits.

References: IPCC substitution literature; ISO/EN EPD rules.

Durability & Performance Verification

Third-party standards and tests (fire, moisture, mechanical) demonstrate that products will maintain service life and storage integrity under expected conditions.

References: ASTM/ANSI wood standards; ICC-ES; E84; UL/IBC.

Q2. Are there any definitions in the statute that may require further expansion or clarification?

Response to Question 2 – Clarifications

- **“Utilization.”** Clarify that utilization includes biogenic utilization into durable, non-fuel products (engineered/densified wood) that provide verifiable long-term storage and substitution benefits.
- **“CDR project.”** Include biogenic pathways where atmospheric CO₂ captured by forests is stored in long-lived products, subject to rigorous MRV and durability criteria (aligned with IPCC HWP accounting).
- **“Permanent/Long-Term.”** Define permanence as storage aligned with the product's service life (≥50 years for buildings), with end-of-life provisions prioritizing reuse/recycling into long-lived applications, and/or controlled end-of-life management.
- **“Project Operator” (product pathways).** Specify MRV roles across manufacturing → construction → ownership.
- **“Monitoring.”** Distinguish manufacturing-phase air compliance (criteria/VOC) from storage integrity (durability standards and installation verification), rather than geologic leak detection.
- **“Financial Responsibility.”** For products, rely on documentation/certification (verified EPDs, durability/safety certifications, chain-of-custody, and end-of-life statements) that are aligned with ISO/ASTM/ICC-ES and Buy Clean reporting.

Q3. Are there any project categories missing from this list?

Response to Question 3 – Missing Categories

Add a separate category for **Biogenic Carbon Removal and Storage in Durable Products**. Current “biomass-based carbon removal” language typically focuses on energy (e.g., BECCS) and does not explicitly include material-based storage that replaces steel or concrete.

Examples

- Cross-Laminated Timber (CLT)
- Veneer-Laminated Timber (VLT)
- Densified engineered wood (e.g., SuperWood)

These materials store atmospheric carbon for 50–100 years or more, deliver substitution benefits, and support wildfire resilience, sustainable forestry, and rural economic development (e.g., consistent with DARPA’s WUD upcycling of underutilized biomass).

Proposed Addition

- *Biogenic carbon removal and storage in durable products* (engineered wood, densified cellulose materials, carbon-storing composites)

Q4. Are there suggestions for further description of these categories, or ways to group categories?

Response to Question 4 – Grouping

CARB can improve clarity by distinguishing **energy-based biomass pathways** from **material-based biomass pathways**, which differ in permanence mechanisms, monitoring needs, and co-benefits.

- **Energy-Based (e.g., BECCS):** Biomass for energy; CO₂ captured and geologically stored; requires Class VI and subsurface monitoring.
- **Material-Based (e.g., durable wood products):** Biomass to long-lived materials (SuperWood, CLT, VLT); storage via product service life; integrity via durability certifications, EPDs, chain-of-custody; added substitution benefits.

Proposed Grouping

- Nature-Based Solutions
- Energy-Based Carbon Capture and Storage
- Material-Based Carbon Storage and Utilization
- Direct and Ambient Air Capture

This enables tailored financial responsibility, monitoring, and protocols—ensuring rigor without applying geologic requirements to product pathways.

Q5. In addition to the instruments listed in §146.85 of Title 40, are there other existing financial responsibility instruments CARB staff should consider?

Response to Question 5 – Financial Responsibility Instruments

Section 146.85 addresses geologic storage. For **durable product pathways** (e.g., SuperWood), CARB can adapt **product-appropriate instruments** that already demonstrate accountability, traceability, and stewardship:

- **Product & Supply-Chain Verification.** Verified EPDs and LCAs document embodied/stored carbon per unit and provide transferable accounting (ISO 14025, EN 15804).
- **Durability & Safety Certification.** ASTM/ANSI/ICC-ES benchmarks (structural, fire, moisture) provide a credible proxy for permanence over expected service life.
- **Insurance/Warranty-Backed Instruments.** Performance warranties or insurance that guarantee minimum service life or replacement upon early failure.
- **Chain-of-Custody & Sourcing.** FSC/SFI certification to ensure material integrity and sustainable feedstock sourcing.
- **Product Stewardship / EPR.** California precedents (electronics, paint, packaging) can inform light-touch stewardship for durable, carbon-storing products.

- **Green/Performance Bonds.** Bonds tied to verified carbon outcomes; funds released upon delivery of storage performance.

Q6. What other additions or changes to the existing requirements for financial responsibility should CARB consider and why?

Response to Question 6 – Additions or Changes to Financial Responsibility Requirements

For **durable product pathways**, adapt (don't duplicate) geologic frameworks. Products like **SuperWood** store carbon in the built environment, where accountability depends on **product performance, verified data, and transparent records**, not site-closure instruments.

Practical additions (light-touch, high-integrity):

- **Product-Based Verification vs. Site Liability.** Require third-party EPDs/LCAs that quantify stored carbon per unit (ISO 14025, EN 15804).
- **Durability & Performance Standards.** Reference ASTM/ANSI/ICC-ES to confirm structural, fire, and moisture performance as a proxy for permanence.
- **Insurance or Warranty Backstops.** Allow warranty/insurance instruments that guarantee service life or replacement in case of early failure.
- **Chain-of-Custody & Sourcing.** Recognize FSC/SFI as contributing to financial responsibility through traceability and sustainable feedstock.
- **Beneficiary-Based End-of-Life Records.** Encourage project owners/beneficiaries (those receiving the financial/policy benefit) to maintain reuse/recycling or managed-recovery records.

These measures align with existing California frameworks (e.g., Buy Clean and embodied-carbon reporting) while avoiding geologic-style liability for product pathways.

Illustrative MRV Roles for Durable Product Pathways

MRV Component	What it means for durable product pathways (e.g., SuperWood)	Who's responsible
Measurement	Quantify stored carbon per unit via verified EPD/LCA; measure total installed quantity.	Manufacturer provides EPD/LCA data; project developer measures installed volume.
Reporting	Submit verified data to a registry or program database linking material use to storage claims; maintain auditable records.	Project owner or developer; records retained for audit.
Verification	Independent validation that reported data meet accepted standards (e.g., ISO 14067, GHG Protocol for stored carbon).	Third-party verifier (approved authority).

Q7. How should the requirements account for scenarios such as ownership transfer, bankruptcy, change of ownership structure, change in insurance carrier, etc.?

Response to Question 7 – Accounting for Ownership Transfer and Structural Changes

For **durable product pathways**, scenarios such as ownership transfer, bankruptcy, or changes in insurance coverage can be effectively managed through documentation, transparency, and traceable recordkeeping—not through geologic-style liability instruments.

This approach reflects the low-risk, product-based nature of biogenic carbon storage, ensuring continuity and accountability without imposing unnecessary administrative burdens.

It also aligns with existing California frameworks—including renewable-energy credit registries, product-stewardship programs, and building-material warranty systems—providing a familiar compliance pathway for both industry and regulators.

CARB could consider the following light-touch, transferable mechanisms:

- **Transferable Documentation and Records.** Carbon-storage claims should be tied to verified Environmental Product Declarations (EPDs) and installation records, rather than to a single corporate entity. These records should remain valid and transferable to new owners or operators, ensuring continuity of carbon accounting across ownership changes.
- **Centralized or Third-Party Registry.** CARB could maintain—or recognize—a registry where verified carbon-storage claims are recorded at the product or project level. Ownership changes would simply require an update to the registered record, maintaining transparency and avoiding data loss.
- **Successor Responsibility for Record Maintenance.** In mergers, acquisitions, or reorganizations, successor entities should assume the responsibility to maintain accurate carbon storage records. This mirrors established practices for renewable-energy credits, environmental permits, and building certifications.
- **Insurance and Warranty Continuity.** For warranty- or insurance-backed service-life assurances, CARB could encourage assignment clauses that allow coverage to transfer with ownership. If an insurer or carrier changes, new coverage could be required within a reasonable timeframe to maintain continuity of protection.
- **Treatment in Bankruptcy or Dissolution.** In the event of bankruptcy, the verified carbon-storage record—EPD plus registry entry—should be treated as a non-voidable environmental asset. This ensures that the carbon-accounting value is preserved even if a manufacturer or developer ceases operations.

Q8. Are there other ways to address investment uncertainty through insurance or other mechanisms?

Response to Question 8 – Addressing Investment Uncertainty and Market Confidence

Yes. For durable product pathways, CARB can address investment uncertainty not only through insurance or warranty mechanisms but also by fostering **market-based incentives** that signal **long-term policy stability and product confidence**. Unlike geologic injection projects—where

risks center on subsurface integrity, the uncertainties here relate to product performance, adoption rates, and market uptake.

By combining financial assurance tools with targeted incentives, CARB can both de-risk private and public investment and accelerate the adoption of carbon-storing materials across new construction, retrofits, and material substitution projects. This integrated approach complements existing state frameworks, including Buy Clean California, CALGreen, AB 2446, and green-bond standards, ensuring consistency while positioning durable products like SuperWood as bankable, insurable, and investable climate solutions.

- **Insurance and Warranty Products.** Performance insurance or service-life warranties can guarantee structural and functional durability (50–100 + years), ensuring that stored carbon remains secure throughout the product’s life. If performance issues arise, payouts can support repair or replacement, maintaining carbon-storage continuity.
- **Carbon-Storage Performance or Green Bonds.** CARB could recognize performance or green bonds linked to verified carbon outcomes. These instruments provide financial assurance that promised storage levels are achieved while also creating vehicles for impact investment and long-term financing.
- **Shared Risk Pools.** A risk-pooling mechanism, modeled on renewable-energy or insurance pools, could spread coverage across multiple manufacturers or project owners. This lowers individual premiums and provides collective continuity for carbon-storage integrity.
- **Incentives for New Construction and Retrofits.** Integrate insurance or warranty requirements—and associated confidence benefits—into both public and private-sector projects, including new construction, retrofits, and material replacements. Projects using verified carbon-storing materials and meeting durability thresholds could qualify for procurement preferences, retrofit rebates, tax credits, or permitting advantages. This dual approach rewards early adoption and creates certainty for lenders, insurers, and developers alike.
- **Beneficiary-Based Accountability with Backstop Options.** End-of-life responsibility can rest with the project owner or beneficiary, consistent with who receives the financial or policy benefit. CARB could consider a light-touch industry backstop fund or risk pool to ensure continuity if an obligated entity dissolves or fails to meet commitments.

Q9. What project-specific air-monitoring activities are CCUS/CDR developers currently conducting or intending to conduct, if any?

Response to Question 9 – Project-Specific Air-Monitoring Activities

For **durable biogenic carbon-storage pathways**—such as engineered and densified wood (e.g., SuperWood)—air-monitoring requirements apply primarily to **manufacturing and installation**, not post-installation. These activities already fall under **existing California Air Resources Board (CARB)** and **regional Air Quality Management District (AQMD)** regulations that govern wood-product manufacturing and construction.

During manufacturing, facilities comply with:

- VOC and toxics monitoring for terpenes or resin solvents, and formaldehyde where applicable.
- Particulate-matter control (PM_{2.5} / PM₁₀) using baghouses or cyclones for sanding and machining.
- Combustion-unit testing for NO_x / CO where required; most operations are electrified, minimizing such emissions.

During installation, standard AQMD construction-site dust rules and Cal/OSHA exposure limits apply to sanding, cutting, and finishing operations.

Once installed, durable products pose no ongoing risk to air quality or CO₂ leakage. Long-term assurance comes from Environmental Product Declarations (EPDs), Life-Cycle Assessments (LCAs), and durability certifications (ASTM, ICC-ES, and ANSI) that document stored-carbon content and manufacturing-phase emissions.

In short, durable biogenic materials already meet California's robust regulatory framework for wood-product manufacturing and installation; no additional project-specific air monitoring requirements are necessary beyond existing CARB/AQMD rules.

Q10. What specific criteria pollutants or toxics emissions should be prioritized for monitoring and where along the CCUS/CDR project components should monitoring be prioritized?

Response to Question 10 – Priority Pollutants for Durable Product Pathways

For **engineered and densified wood pathways**, monitoring priorities occur during **manufacturing and installation**, consistent with CARB and AQMD permitting.

- **VOCs and toxics:** Terpenes and any resin-based solvents; formaldehyde only if used.
- **Particulate matter:** PM_{2.5} / PM₁₀ from sanding and finishing, managed through standard capture systems.
- **Combustion by-products:** NO_x / CO monitoring where fuel is used; minimal for electric systems.
- **Installation phase:** Apply construction-site dust and worker-safety controls under Cal/OSHA.

After installation, no ambient CO₂ or leak detection monitoring is required. Carbon permanence is verified through **EPDs, LCAs, and durability certifications** confirming long-term storage.

This targeted approach ensures proportional monitoring for biogenic pathways while relying on existing, enforceable mechanisms of CARB and AQMD.

Q11. How long should criteria or toxics monitoring be conducted for?*Response to Question 11 – Monitoring Duration for Durable Product Pathways*

Monitoring should be time-bound to active operations. During manufacturing, facilities conduct periodic or continuous monitoring for VOCs, HAPs, PM_{2.5}/PM₁₀, and combustion emissions in accordance with existing CARB/AQMD permits.

After installation, no ongoing air-toxic monitoring is necessary because carbon is locked in the product and does not pose a release risk. Long-term assurance depends on durability certifications, EPDs, and chain-of-custody documentation updated as materials or processes change.

Aligning monitoring duration with actual risk avoids imposing geologic-style, post-closure monitoring on low-risk, product-based storage and provides regulatory certainty for near-market solutions like SuperWood.

Q12. Are there examples of existing monitoring frameworks in other sectors that could inform CARB’s approach?*Response to Question 12 – Relevant Monitoring Frameworks*

Yes. Durable biogenic materials can use established California and national frameworks already proven effective in related industries:

- **CARB and AQMD wood-product regulations** – governing VOC, formaldehyde, and particulate emissions for composite-wood and panel manufacturing.
- **CALGreen and Buy Clean California** – requiring embodied-carbon disclosures and verified EPDs for eligible materials.
- **EPA Title V and NSPS** – standard source-testing and record-retention methods for industrial emitters.
- **Building-product certification systems** – ASTM, ANSI, ICC-ES protocols for durability and safety testing that inherently ensure storage permanence.

These frameworks already deliver robust oversight without duplicating geologic-style monitoring and provide immediate alignment for SB 905’s durable-product pathways.

Q13. What frequency of monitoring and reporting should CARB consider, and should this differ by project type? Do you have estimates on costs for monitoring and reporting?

Response to Question 13 – Monitoring Frequency and Reporting for Durable Product Pathways

For **engineered and densified wood products**, monitoring frequency should follow existing **CARB and AQMD permit schedules**—typically **periodic or semi-annual source testing** for VOCs, HAPs, and particulates, plus annual record reviews. Combustion-unit testing for NO_x / CO applies only where fuel is used.

After installation, no additional monitoring is required; ongoing transparency is ensured through **EPD and LCA updates** every 3–5 years or when formulations change, maintaining current lifecycle data.

A **risk-based approach**—more frequent during startup, reduced once compliance is established—provides rigor without burdening low-emission, low-risk operations. Costs remain comparable to existing air-permit compliance, not to geologic or Class VI-well monitoring regimes.

This framework ensures accountability through proven California air-quality programs while maintaining proportionality for durable product pathways.

Response to Question 14 – Durable Product (Biogenic) Pathways

For **durable, biogenic utilization pathways** such as engineered and densified wood (e.g., SuperWood), air-monitoring requirements should remain **pathway-specific** and proportional to the actual emissions profile.

These pathways are fundamentally different from geologic capture and storage. They involve **manufacturing and installation processes**, not subsurface injection or long-term leak risks. Existing California air-quality programs already provide appropriate oversight.

- **Manufacturing phase:** Facilities operate under **CARB and regional AQMD permits** that cover VOCs (including natural terpenes), formaldehyde where applicable, hazardous air pollutants, and particulate matter (PM_{2.5} / PM₁₀). Standard controls—baghouses, cyclones, and electrified systems—minimize emissions.
- **Installation phase:** Builders follow **Cal/OSHA and local AQMD** rules for dust control and worker exposure.
- **After installation:** Products store carbon within the material itself; no ongoing air-toxics or CO₂-leak monitoring is relevant.

Durability and permanence are shown through **Environmental Product Declarations (EPDs)**, **Life-Cycle Assessments (LCAs)**, and **recognized performance standards** (ASTM, ICC-ES, ANSI).

In summary, **current CARB and AQMD frameworks already fulfill the need** for air-quality protection in durable-product manufacturing. No new monitoring system is needed—only

continued compliance with the established state permitting system and lifecycle transparency tools that confirm stored carbon and material integrity.

Q15. What types of strategies are in use in other regulatory or voluntary programs that could be adapted to meet the statutory requirements?

Response to Question 15 – Strategies Relevant to Durable Product Pathways

For **durable biogenic carbon-storage pathways** such as engineered and densified wood, effective strategies already exist within California’s current regulatory and voluntary programs. These frameworks collectively minimize air- and water-quality impacts, promote transparency, and encourage adoption of low-carbon materials without the need for new mechanisms.

Relevant examples include:

- CARB and regional AQMD permits that regulate VOCs, formaldehyde, particulate matter, and other criteria pollutants during manufacturing.
- CALGreen Building Code (Part 11) and Buy Clean California Act (AB 262 / AB 2446), which encourage or require embodied-carbon accounting and verified Environmental Product Declarations (EPDs).
- LEED and Envision certification systems, which recognize low-VOC manufacturing, waste reduction, and low-carbon material choices.
- Industrial General Permit (IGP) storm-water controls and spill-prevention measures that already manage water quality at manufacturing facilities.

For engineered wood manufacturing, these programs together provide a comprehensive and enforceable structure. They ensure that emissions and discharges are managed at their source and that product-level transparency—through verified EPDs and LCAs—supports California’s embodied-carbon and procurement goals.

Q16. Are there other guardrails that should be considered beyond existing local, state, and federal regulations to minimize impacts?

Response to Question 16 – Guardrails for Durable Product Pathways

Existing CARB, AQMD, and CEQA processes already include extensive environmental protections for manufacturing and construction projects. For durable biogenic materials like SuperWood, these established frameworks are both appropriate and sufficient when coupled with ongoing transparency tools such as EPDs, LCAs, and third-party durability certifications.

Manufacturers can further align with California’s goals by:

- Continuing to improve low-VOC and no-formaldehyde resin systems to minimize toxics.
- Implementing closed-loop water and dust-control systems that meet Industrial General Permit standards.

- Maintaining verified EPDs / LCAs to document both stored carbon and manufacturing emissions.

These steps, which InventWood already employs, fit within California’s existing regulatory ecosystem and help advance the State’s broader embodied-carbon and procurement objectives under AB 2446 and the Assessment of Innovative Wood Products Procurement Protocols (2025).

No additional or project-specific guardrails are needed beyond continued compliance with CARB and AQMD requirements and transparent lifecycle reporting through recognized industry standards.

Q17. Is there any information from existing studies or projects to inform a CEQA Analysis for the rulemaking?

Response to Question 17 – CEQA Evidence

Existing California policies and studies—including **AB 2446**, the **Buy Clean California Act**, **CALGreen embodied-carbon standards**, and the **January 2025 Assessment of Innovative Wood Products Procurement Protocols**, already provide the analytical foundation that CEQA lead agencies can rely on for SB 905 rulemaking and project-level review. No additional InventWood-specific input is required.

Q18. What key issues should CARB address when developing the unified permit application?

Response to Question 18 – Unified Permit Application

InventWood supports a unified-permit framework that recognizes the differences among project types and builds on existing California programs rather than duplicating them.

For **durable-product utilization pathways** such as engineered and densified wood (e.g., SuperWood), appropriate review focuses on:

- **Manufacturing-phase air and water safeguards**, consistent with CARB / AQMD rules.
- **Lifecycle-carbon documentation** through verified EPDs and LCAs; and
- **Product-durability verification** under established ASTM / ICC-ES / ANSI standards.

CARB’s unified-permit process can streamline such projects by:

- Referencing existing disclosure tools under Buy Clean California, AB 2446, and CALGreen, so applicants can rely on prior documentation; and
- Coordinating with existing permitting and CEQA agencies to avoid redundant reviews and maintain proportionality.

This modular, transparent approach maintains environmental rigor while giving low-risk, biogenic technologies like SuperWood a predictable and efficient path to deployment.

Q19. What features could CARB include in the voluntary permit portal to encourage use?

Q20. Are there existing systems CARB should look to when developing the permit portal?

Q21. Are there examples of existing public CCUS project databases to emulate for reporting?

Response to Questions 19–21 – Portal & Public Reporting (Durable Product Pathways)

For **durable, biogenic utilization pathways** (e.g., engineered/densified wood), the portal’s value is in **avoiding duplication** and **making EPD/LCA data usable across programs**. Two essentials:

- “Upload once, use many times.” Accept EPDs/LCAs and durability certifications and reference them across Buy Clean, AB 2446, CALGreen, and project files—no re-entry.
- Modular pathway design. A durable-products module focused on manufacturing-phase air/water compliance and product documentation (EPD/LCA, ASTM/ICC-ES/ANSI). No geologic data requirements for product projects.

Helpful models to borrow (for durable products):

- **Buy Clean / EC3** (product EPD integration and comparability).
- **CEQAnet** (plain-language public access to documents and project summaries).

A lightweight public registry view should display: project summary, product categories used, verified EPD/LCA references, and durability certifications—so carbon-storing materials are visible and comparable alongside other SB 905 pathways.

Q22. What role could SB 905 projects play in existing programs, or other programs for compliance?

Response to Question 22 – Program Fit for Durable Products

For **durable product pathways**, the natural points of alignment are embodied-carbon and procurement programs. CARB can simply recognize verified EPD/LCA documentation within:

- **AB 2446** (embodied carbon in buildings),
- **CALGreen** pathways, and
- **DGS/public procurement** submittals.

No additional mechanisms are needed beyond using the same **EPD/LCA evidence** already produced for durable products.

Q23. Are there other things the State could do to scale deployment under SB 905?*Response to Question 23 – Scaling (Durable Products)*

No additional comment beyond our **Q8** incentives section (procurement, retrofit/new construction, and market confidence tools).

Q24. Is there a potential role for carbon removal using climate-smart agriculture practices under SB 905?*Response to Question 24 – Scope*

No comment. This topic is outside InventWood’s stakeholder scope for **durable product pathways**.

Q25. Are there project-type methodologies that should be prioritized based on science/methods/experience?*Response to Question 25 – Prioritization (Durable Products)*

Durable product storage (e.g., **engineered/densified wood**) meets core criteria for near-term prioritization:

- **Durability & permanence:** Service-life benchmarks (≥ 50 years in buildings) confirmed via ASTM/ICC-ES/ANSI.
- **MRV readiness:** EPDs/LCAs under ISO 14040/44, 14025, EN 15804.
- **California fit:** Aligns with AB 2446, CALGreen, and Buy Clean; supports embodied-carbon reduction and procurement goals.

Q26. Should CARB use project-specific protocols or widely applicable standards (or both)?*Response to Question 26 – Protocol Approach (Durable Products)*

A **hybrid** is sufficient for product pathways:

- A brief core standard (data quality, EPD/LCA evidence, service-life durability, basic reporting), plus
- A durable-products annex referencing ISO LCA/EPD rules and ASTM/ICC-ES/ANSI durability.

This keeps documentation consistent and lets product projects proceed without geologic-style requirements.

Q27. Are there public CCUS databases to emulate for reporting on deployment?

Response to Question 27 – Cross-reference

Covered in **Q19–Q21** (portal & public reporting). No further comment.

References & Sources

- **InventWood, Inc.** — [SuperWood Technology Overview \(2025\)](#)
- **Joint Institute for Wood Products Innovation, California Board of Forestry and Fire Protection** — [Assessment of Innovative Wood Products Procurement Protocols \(January 2025\)](#)
- **AQMD Wood Products** — [RULE 1136. Wood Products](#)
- [Buy Clean California Act \(AB 262\); AB 2446](#) (Embodied-Carbon Disclosures in Buildings)
- [CALGreen Building Code \(Part 11\)](#) — [Embodied-carbon and material sustainability provisions](#)
- [IPCC 2006 Guidelines & 2019 Refinement](#) — Harvested Wood Products methodology
- **ISO / EN Standards for LCA & EPDs** — [ISO 14040/44, ISO 14025, ISO 14067, EN 15804, ISO 21930](#)
- **ASTM / ANSI / ICC-ES** — Durability, fire-resistance, moisture/structural performance standards for engineered wood products
<https://codes.iccsafe.org/content/IBC2021P1/chapter-23-wood>
- [Forest Stewardship Council \(FSC\); Sustainable Forestry Initiative \(SFI\)](#) — Chain-of-custody and sustainable sourcing frameworks
- **U.S. EPA** — Title V / NSPS source-testing and recordkeeping requirements

