

# California Community Air Protection and Circular Economy Transition Framework

Public Comment on AB 617 Community Air Protection Program

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## I. A New Vision: From Pollution Management to Resource Management

As California continues advancing the Community Air Protection Program (AB 617), the next stage of environmental leadership should move beyond pollution control toward source elimination and systems transformation.

AB 617 has established a strong foundation through emissions monitoring, enforcement, and community engagement. The next opportunity is to address the underlying causes of pollution by redesigning how communities manage resources, infrastructure, transportation, and environmental impacts.

The central principle of this framework is simple: Pollution management systems can be redesigned as resource management systems.

Rather than focusing solely on controlling waste and emissions after they are generated, California can increasingly support systems that prevent pollution while creating economic, environmental, and community value.

## II. Five Strategic Policy Pillars

### 1. Local Processing First

Whenever technically feasible and economically practical, communities should be encouraged to process, recover, and utilize resources closer to where materials are generated.

Potential benefits include:

- Reduced Vehicle Miles Traveled (VMT);
- Reduced heavy-duty truck traffic and diesel emissions;
- Lower greenhouse gas emissions;
- Improved land-use efficiency;

- Reduced long-term infrastructure costs;
- Increased community resilience and self-sufficiency;
- Enhanced environmental justice outcomes for historically overburdened communities.

## **2. Next-Generation Circular Economy Infrastructure**

Traditional open-air waste management systems should gradually evolve toward compact, intelligent, and environmentally responsible resource recovery infrastructure.

Future facilities may incorporate:

- Multi-level and space-efficient facility design;
- Integrated above-ground and underground infrastructure planning;
- Fully enclosed near-zero-emission operational systems;
- Automated resource recovery and sorting technologies;
- Advanced environmental monitoring and reporting systems;
- AI-enabled operational management platforms supporting transparency, predictive maintenance, and performance optimization.

The objective is to maximize resource recovery while minimizing waste, emissions, transportation impacts, and community exposure.

## **3. Community Participation, Workforce Development, and Environmental Justice**

AB 617 has demonstrated the importance of community participation in environmental decision-making. Future programs should further support:

- Green workforce development and career pathways;
- Community environmental education;
- Community science and data transparency initiatives;
- Small business participation;
- Local economic development linked to environmental improvement.

Communities should not only be protected from pollution — they should actively participate in and benefit from the transition toward a cleaner and more resilient economy.

## **4. Resource Value Creation**

A circular economy framework transforms environmental liabilities into community assets. Future systems should support diverse resource recovery pathways, including:

- Energy recovery;
- Soil amendment and fertilizer production;

- Biomass utilization;
- Material recovery and manufacturing feedstocks;
- Ecological restoration applications.

The goal is to create value while reducing environmental burdens.

## **5. Digital Resource Governance**

Future community sustainability systems should be supported by digital governance tools that improve accountability, transparency, and decision-making. California should explore the use of:

- Artificial Intelligence (AI);
- Remote sensing technologies;
- Satellite monitoring;
- Internet of Things (IoT) systems;
- Resource-flow tracking and environmental performance platforms.

A modern environmental management system should be capable of identifying, monitoring, evaluating, and responding to environmental challenges in near real time.

## **III. Policy Implementation Recommendations**

To advance this framework, California may consider:

- Establishing technical and economic criteria for "Local Processing First" implementation;
- Developing certification standards for advanced circular economy facilities;
- Encouraging community benefit agreements and local workforce participation;
- Creating incentives for innovative circular economy infrastructure in environmental justice communities;
- Integrating circular economy metrics into future Community Emissions Reduction Programs (CERPs);
- Supporting pilot projects that demonstrate measurable reductions in emissions, transportation demand, and community pollution burdens.

## **IV. Conclusion**

California has a unique opportunity to demonstrate that community air protection, circular economy infrastructure, environmental justice, workforce development, climate resilience, and economic opportunity can be advanced together within a single policy framework.

The future of community air protection should not be limited to managing pollution more effectively. It should focus on redesigning the systems that generate pollution in the first place.

By transitioning from pollution management to resource management, California can build healthier communities, stronger local economies, and a more sustainable future for all Californians.

California has a unique opportunity to demonstrate that environmental protection, circular economy infrastructure, workforce development, environmental justice, and economic resilience are not separate objectives, but mutually reinforcing components of a single community sustainability system.

The next generation of community air protection should move beyond managing pollution and toward redesigning the systems that generate pollution in the first place. By transforming waste streams into resource streams and environmental liabilities into community assets, California can establish a globally recognized model for sustainable community development in the 21st century.