

## Asphalt Binder Environmental Product Declaration (EPD) Program: Updates

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### EPD Program: An Overview

- Multiple Stakeholders: Program Operator, PCR Committee, Review Panel
- Consensus-Based
- Third-Party Verified

The flowchart shows the relationship between Program Operator Rules, Product Category Rules (PCR), and Environmental Product Declaration (EPD). Program Operator Rules inform PCR, which in turn informs EPD. PCR also receives support from Life Cycle Assessment. EPD is supported by Life Cycle Assessment and is a Policy Requirement. Life Cycle Assessment also informs PCR.

### AI's Life Cycle Assessment Study in 2019: The Process

If you can't measure it, you can't manage it - Peter Drucker

ISO Standards 14040 and 14044

- Four Asphalt Binders
  - Neat
  - Binder with SBS
  - Binder with GTR
  - Binder with PPA
- 1 Kg of Asphalt Binder

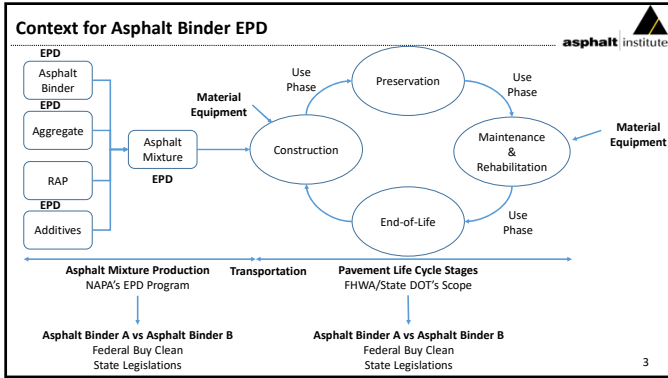
The LCA process flowchart includes: Goal and Scope Definition, Inventory Analysis, Impact Assessment, and Interpretation. It also shows the flow of Foreground and Background Data into the Inventory Analysis stage.

The diagram illustrates the supply chain for asphalt mixture, divided into Background Data (At Source and At Grid) and Foreground Data (At Terminal). At Source includes Crude Oil, Tire, and Coal Deposits. At Grid includes Electricity from Wind, Coal, and Gasoline. At Terminal includes Asphalt, Additives, Diesel, and Natural Gas. The process leads to Asphalt Binder and then Asphalt Mixture. It also mentions AI Study: Foreground Data: 12 Refineries and 11 Terminals, and AI Study: Background Data: Gabi.

### Scopes of Interest for Upstream Binder EPD

The flowchart shows the upstream binder EPD process: Crude Assays (1-5) feed into Crude Oil (API, Sulphur, etc.), which then goes through Refinery Conversion (Deep Conversion) and Terminal Additives Blending to produce Asphalt Binder (EPD). It also identifies the Crude Oil Extraction Background System and Crude Oil Transport and Asphalt Binder Production Foreground System.

Colorado State Legislation: Environmental Product Declaration  
Seeking EPDs from July 2022, Threshold in 2025  
Asphalt Binder (Cement already has an EPD)



### AI's Existing Life Cycle Assessment: Organizational Aspects

- Started in 2016, third-party verified LCA report published in 2019
- Funding: \$200,000
- Contract with Thinkstep at the time, now Sphera
- Availability of models on crude oil extraction and refining

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### Organizational Limitations of Existing LCA

- "Proprietary" background data, "Gabi"
- Non-Alignment with FHWA's vision of consistent "public" background data
- Not an "Ideal" approach given the "dependency" on third-party LCA/EPD providers (e.g., Sphera)

### Alternative Paths for Asphalt Binder EPD Program

<b>Lead Case</b> <ul style="list-style-type: none"> <li>• New LCA with public data</li> <li>• Expect Some External Funding                             <ul style="list-style-type: none"> <li>◦ Amount/timing: TBD (By Dec 2022)</li> </ul> </li> </ul>	<b>Back Up Plan</b> <ul style="list-style-type: none"> <li>• Use existing LCA</li> <li>• Dependency on Sphera</li> <li>• "Black-Box" approach</li> <li>• AI Funds Total Effort</li> </ul>
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- FHWA and CDOT prefer "Lead Case"
- Regular EPD Taskforce meetings

### EPD Taskforce

- Volunteer list sent out to all members
- 38 participants signed up: All Accepted
- Chair and Vice-Chair selected
  - Taskforce Chair: John Brownie
  - Taskforce Co-chair: Everett Crews

