Environmental Product Declarations (EPD)

2023 Lessons Learned

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Environmental Product Declaration's

Volvo Delivers its First FMX All-Electric Concrete Mixer

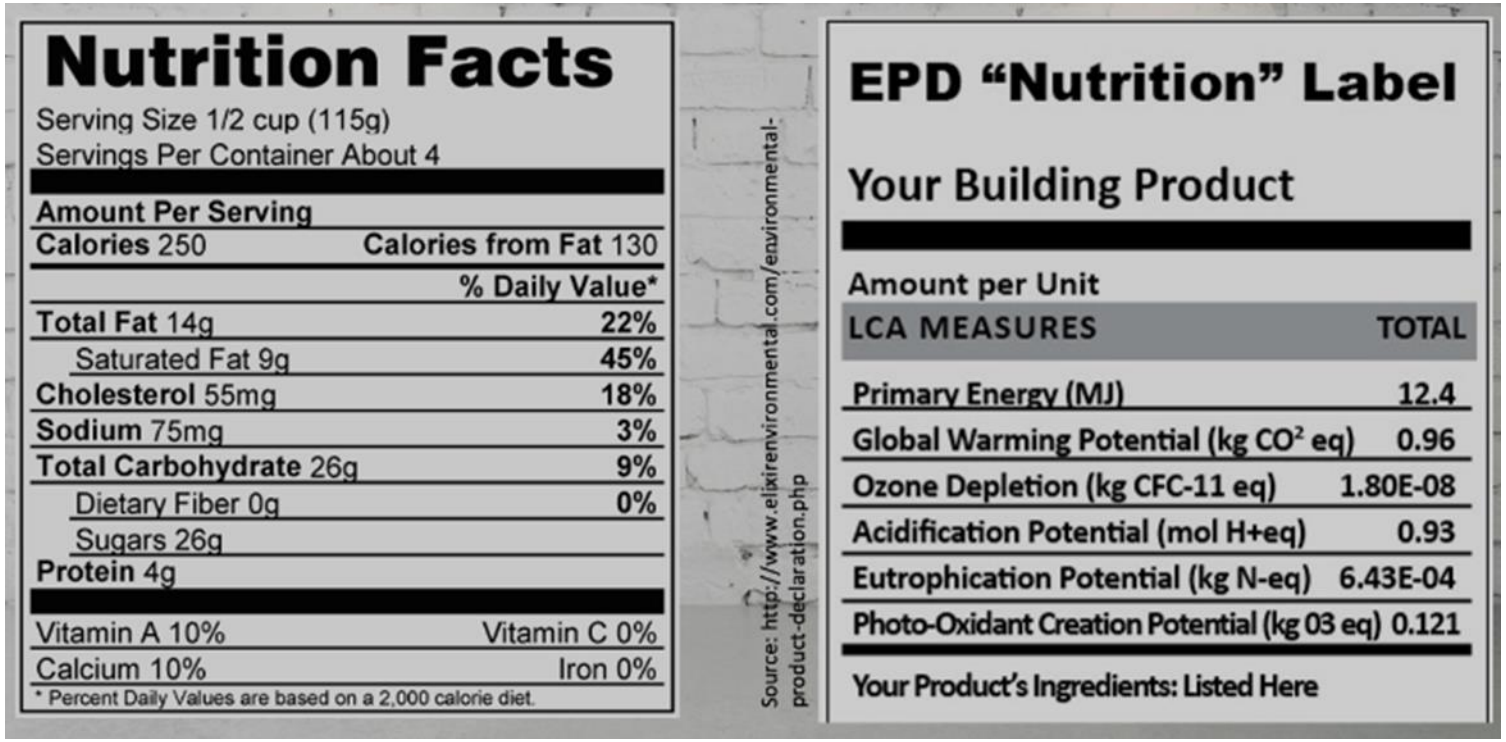
- What is an Environmental Product Declaration (EPD)?
- What is the purpose?
- How will they be used?
- Where's DelDOT along the EPD journey?
- Other notable terms you'll hear…
  IRA, LCA, PCR's

What is an Environmental Product Declaration (EPD)?

- Defined by International Organization for Standardization (ISO)14025 … declaration that "quantifies environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function"
- Based on the scientific principles of life cycle assessment (LCA) and approved through independent verification

What is an Environmental Product Declaration (EPD)?

Materials "nutrition" label



Nutrition Facts

Serving Size 1/2 cup (115g)
Servings Per Container About 4

Amount Per Serving	
Calories 250	**Calories from Fat** 130
	% Daily Value*
Total Fat 14g	22%
Saturated Fat 9g	45%
Cholesterol 55mg	18%
Sodium 75mg	3%
Total Carbohydrate 26g	9%
Dietary Fiber 0g	0%
Sugars 26g	
Protein 4g	
Vitamin A 10%	Vitamin C 0%
Calcium 10%	Iron 0%

* Percent Daily Values are based on a 2,000 calorie diet.

Source: http://www.elixirenvironmental.com/environmental-product-declaration.php

EPD "Nutrition" Label

Your Building Product

Amount per Unit

LCA MEASURES	TOTAL
Primary Energy (MJ)	12.4
Global Warming Potential (kg CO^2 eq)	0.96
Ozone Depletion (kg CFC-11 eq)	1.80E-08
Acidification Potential (mol H+eq)	0.93
Eutrophication Potential (kg N-eq)	6.43E-04
Photo-Oxidant Creation Potential (kg 03 eq)	0.121

Your Product's Ingredients: Listed Here

What is the purpose of an EPD?

- Provides information about products from cradle to grave (or cradle) that designers, specifiers, buyers, code officials and the general public can better understand a product's environmental impact
- Provides information about a product's impact on the environment, such as global warming potential (GWP), smog creation, ozone depletion, and water pollution
- Provides the basis of a fair comparison of products and services by their environmental performance
- Tells the life cycle story of a product in a single, comprehensive report

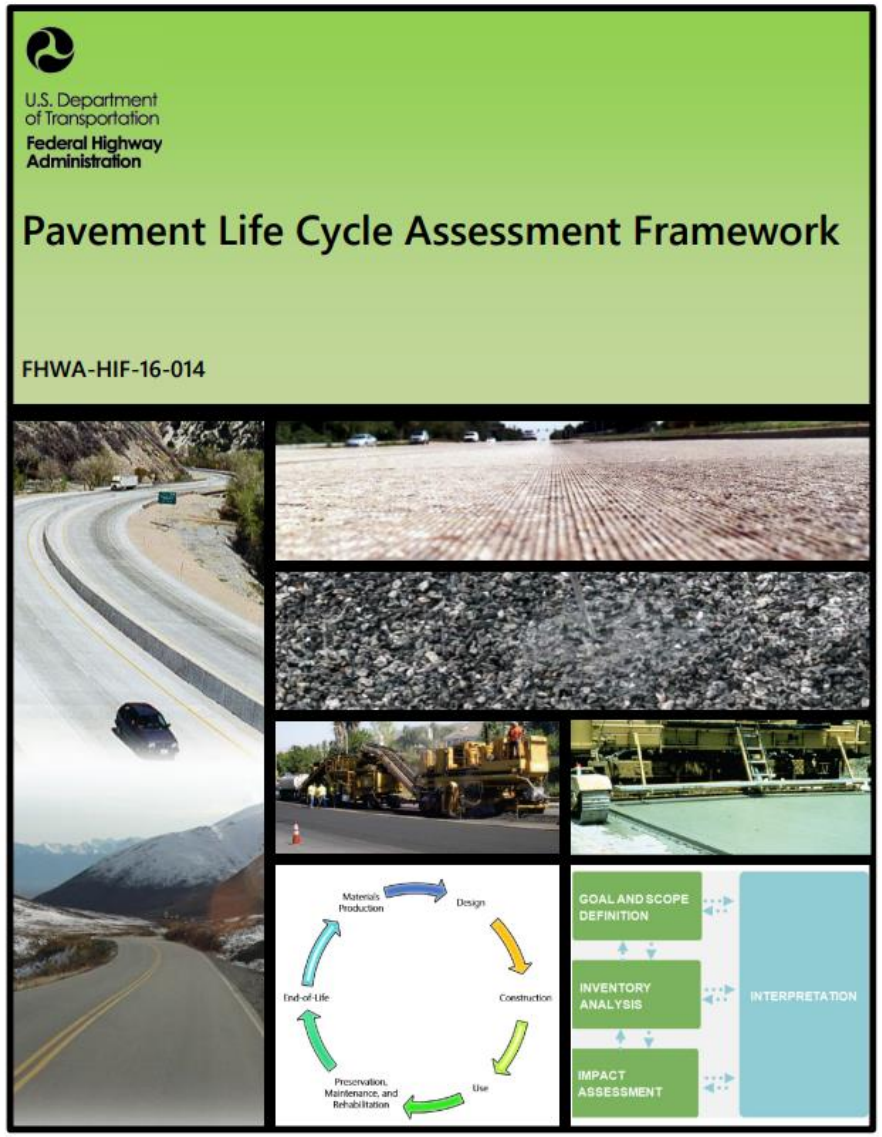
How will they be used?

- Reduce the environmental impact of infrastructure construction and use
- Improve sustainability goals and to demonstrate a commitment to the environment
- Help meet sustainability targets/requirements
- "*Buy Clean*" policies have already been enacted in: California, Colorado, Minnesota, Oregon, and Washington that prioritize the use of lower-carbon materials

Where's DelDOT along the journey of using EPD's?

- Received funding under FHWA Climate Challenge grant
- Plan to quantify GHG emissions associated with construction activities
- Develop program to balance environmental, economic, and engineering needs
- Engage stakeholders: industry, material suppliers, UD, internal champions

FHWA CLIMATE CHALLENGE



Other notable terms in EPD world

- IRA – Inflation Reduction Act
- LCA – Life Cycle Analysis
- PCR – Product Category Rule

Other notable terms in EPD world …

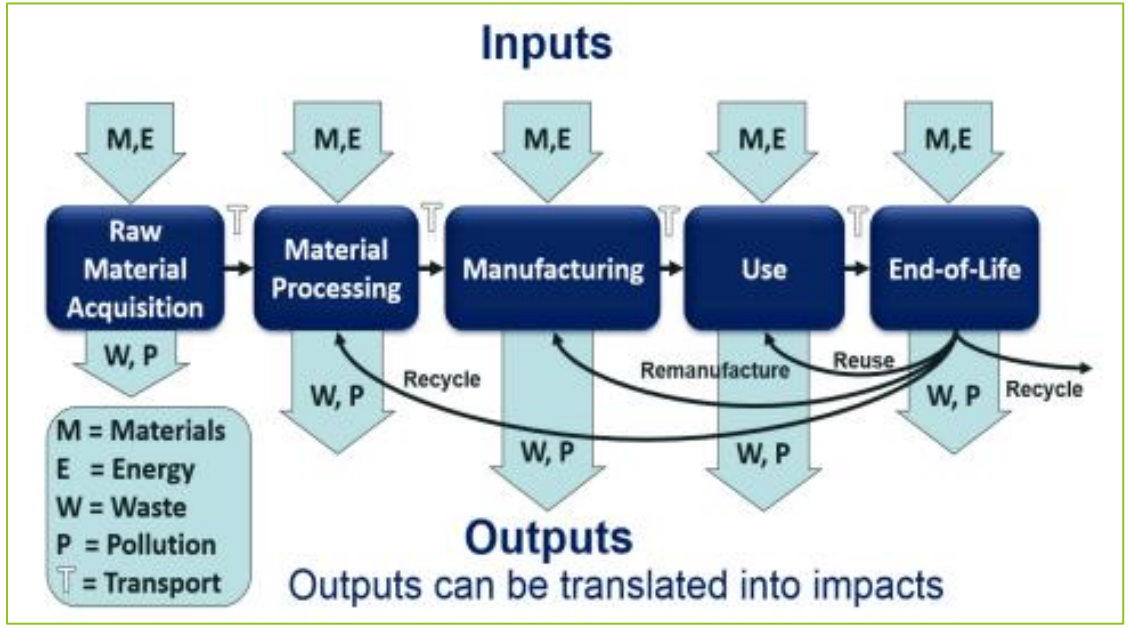
Inflation Reduction Act (IRA) of 2022

- Provides the Federal Highway Administration (FHWA) and the General Services Administration (GSA) funding to select materials and products with substantially lower levels of embodied greenhouse gas emissions as determined by EPA
- Aims to drive aggressive emissions reduction and low carbon procurement within the construction industry
- Includes the following investments in green procurement:
  - $250M for EPD development assistance
  - $100M for low-embodied-carbon labeling for construction materials
  - $2B in low-carbon transportation grants

Other notable terms in EPD world …

Life Cycle Assessment (LCA)

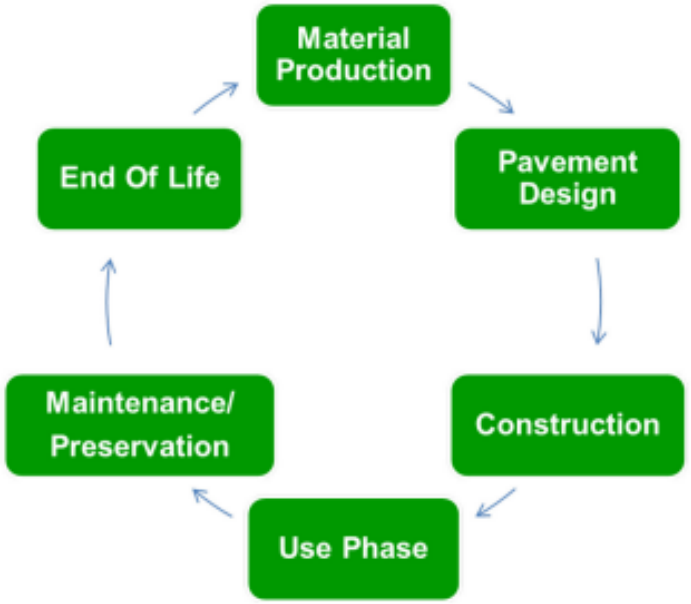
- Provides a comprehensive approach for evaluating the total environmental burden of a product
- Examines the inputs and outputs over the life cycle…from raw material production to the end-of-life



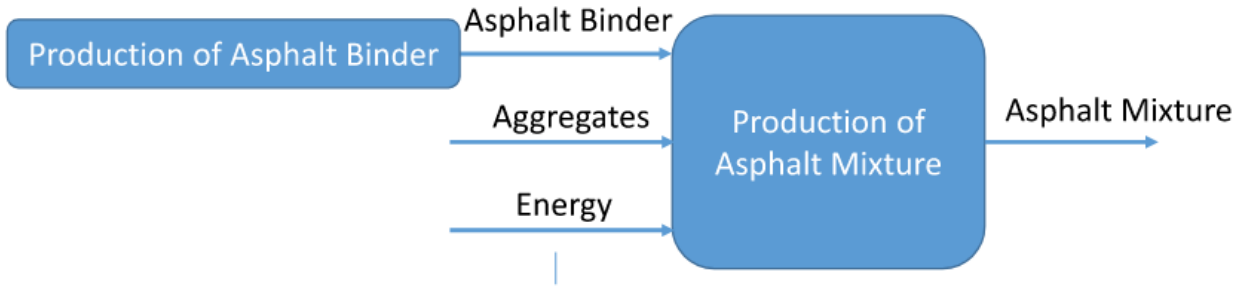
Other notable terms in EPD world …

Life Cycle Assessment (LCA)

For pavements, this cycle includes the material production, design, construction, use, maintenance/rehabilitation/ preservation, and end-of-life stages



Fundamental Construct of Life Cycle Assessment



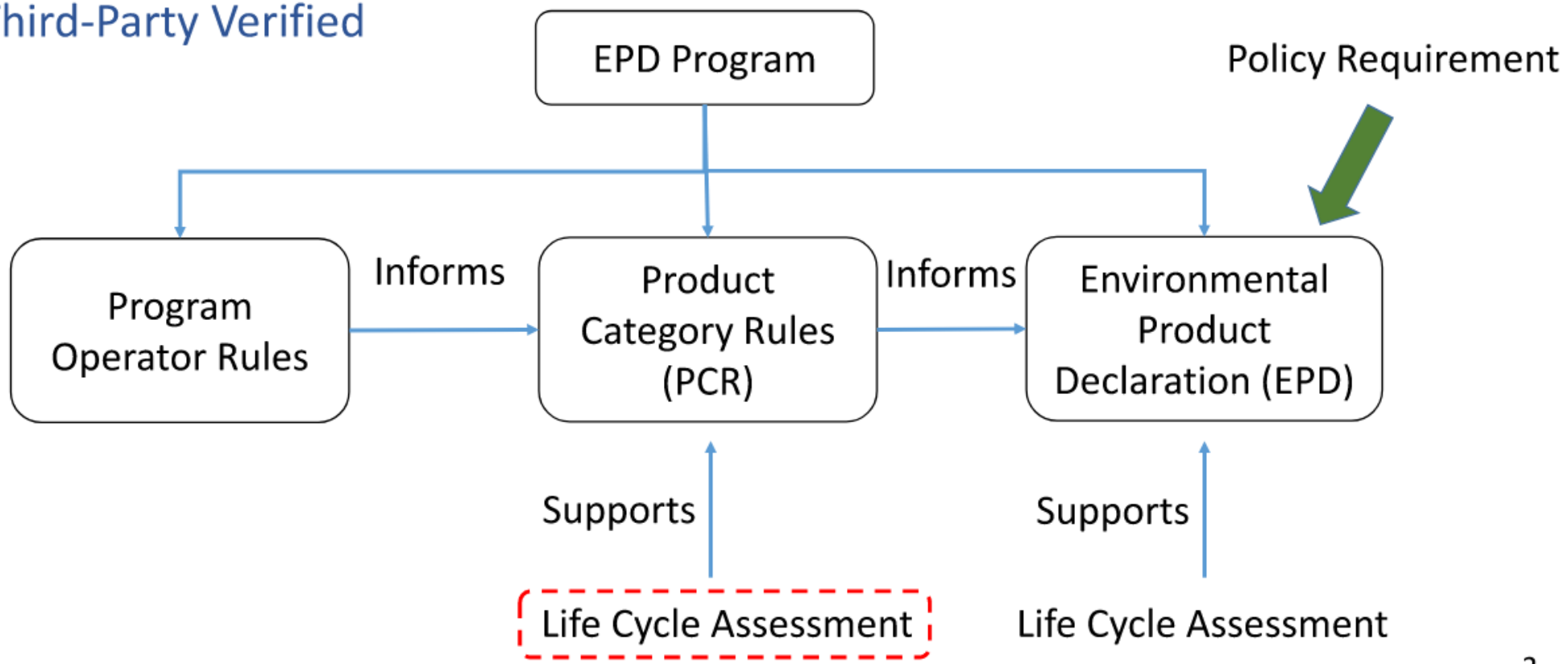
Other notable terms in EPD world …

Product Category Rule (PCR)

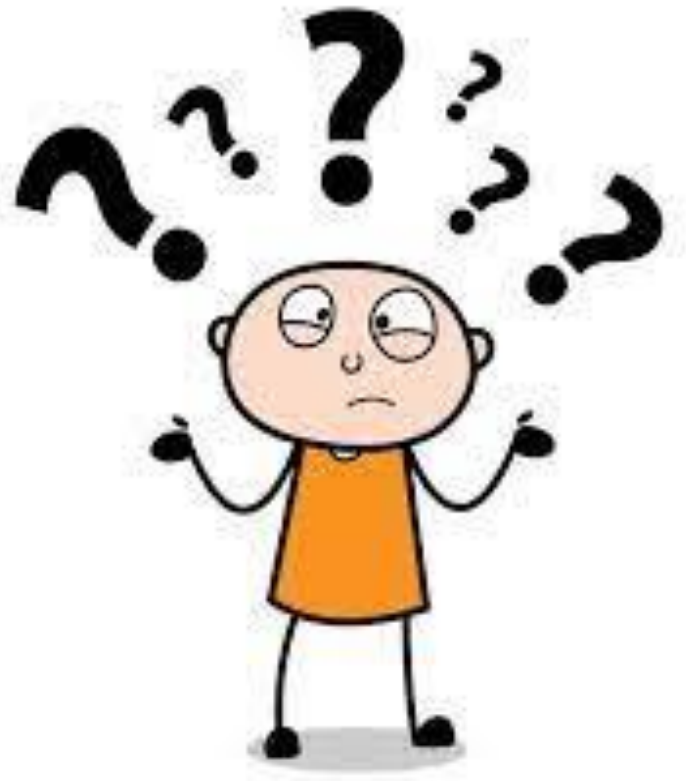
- Set of guidelines that determine what data should be gathered and how it will be evaluated when conducting the life cycle assessment (LCA) of a product
- Product category-specific requirements for conducting LCA studies and reporting their findings through EPD's, consistent with international standards ISO 14025 and ISO 14044

EPD Program: An Overview

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



Confused Yet?



Question #1 ……. What is the difference between an EPD and PCR?

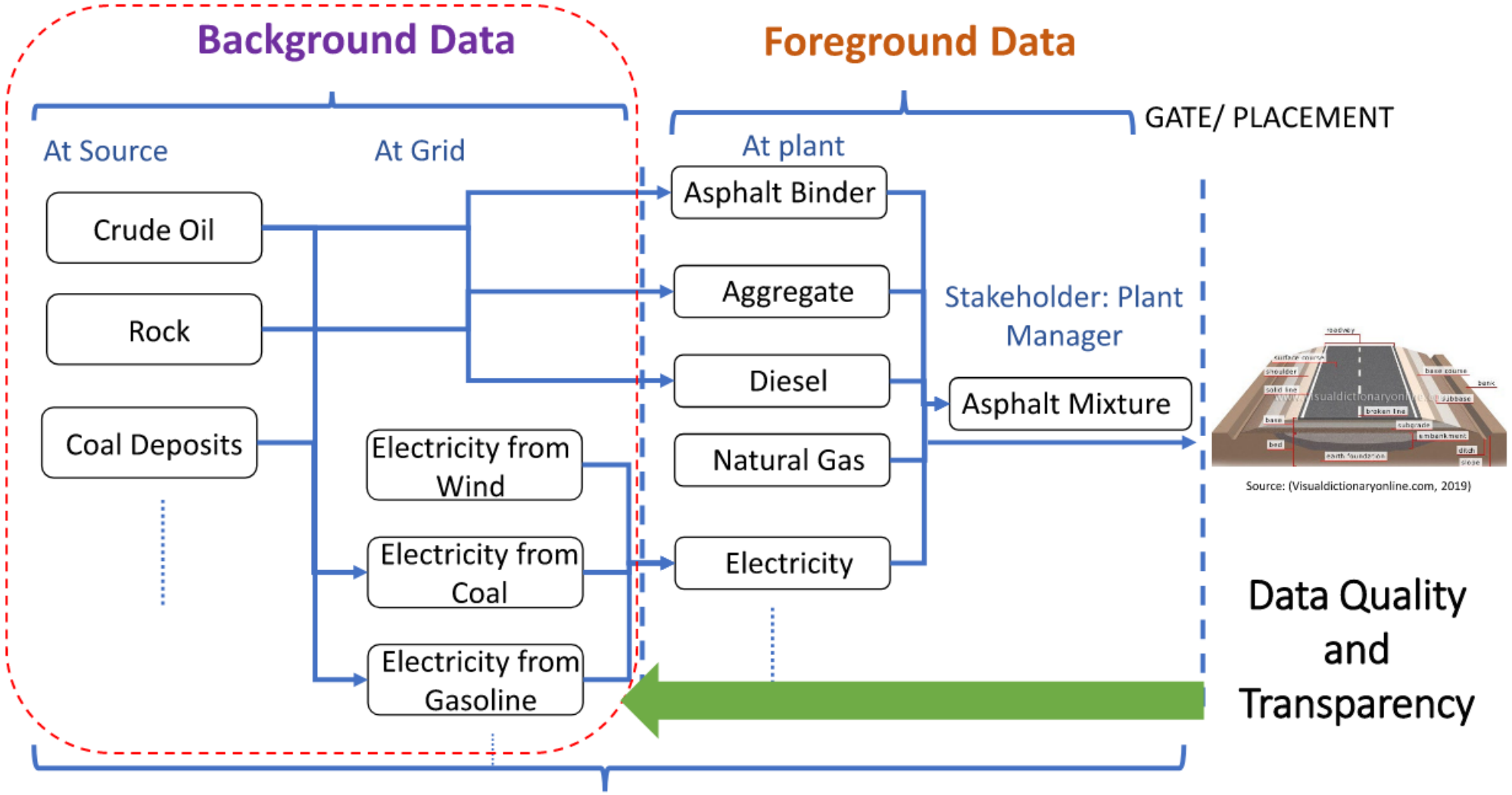
A **PCR** is a set of rules, requirements, and guidelines for developing an **EPD**

An **EPD** is an independently verified and registered summary report of environmental impacts of a material's production

Question #2 ……. What is the difference between an LCA and EPD?

An **EPD** is produced on the basis of LCA calculations and provides a quantitative basis for the comparison of products and services

An **LCA** calculates the environmental footprint of a product throughout its lifecycle



Complete Supply-Chain for Asphalt Mixture


I'M CONFUSED
...OH WAIT...
MAYBE NOT

Thank you for your time and attention

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