

PEM and Sustainability Webinar – Questions and Answers – 8/16/2022

The questions submitted during the webinar follow with answers that our speakers have provided.

Key resources available include:

<https://www.fhwa.dot.gov/pavement/sustainability/>

1. Are we fooling ourselves with the CO2 reduction methods while China and India are increasing the amount of CO2 at a very rapid rate since they are not required? Hawaii,

Good point, but we have to do what we can where we can.

2. The process of gathering, delivering CO2 to a concrete plant (cradle to gate) has not been quantified in a recognized EPD format. Michigan

And

3. How is the amount of carbon captured in PCC through an injection type of procedure measured after construction? Wisconsin

You are right – there is no process to quantify injected CO2 in an EPD. Indeed, a method to measure impact in hardened concrete has not been finalized although investigations are underway to address this need.

4. The Surface Resistivity is not "easy". Specimen treatment and handling are critical. The specification really was intended for prequalification since the precision and bias being developed is based on lab data. Field handling and measuring is expected to give widely scattered data. Michigan

Agreed, field handling and storage activities will increase variability, but it is likely to be no worse than that already observed in cylinder, beam and RCPT tests used over the years.

5. How are the State DoT's responding to this initiative? They're looking into many things but this is the best way to go linking PEM & Sustainability. California

Nineteen states participating in the PEM Pooled Fund project are at various stages of exploring and implementing testing and specifications relative to the guidance of AASHTO's R 101-22 Standard Practice for Developing Performance Engineered Concrete Pavement Mixtures. A number of agencies are using improved sustainability as a message in support of these new technologies that improve durability, reduce cementitious quantities and encourage use of SCMs and PLC. Review the PEM link to the CP Tech Center website and find [Shadow Project Reports](#) from states involved in the FHWA's PEM testing program.

<https://cptechcenter.org/performance-engineered-mixtures-pem/> The PCA Roadmap to Carbon Neutrality also offers comments about the sustainability benefits of PEM.