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BEYOND SMART CITIES



CERTIFIED DECARBONIZATION
PROFESSIONAL - CDP OVERVIEW
ONLINE TRAINING BY KRISHNAJI PAWAR

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KNOWLEDGE IS POWER

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BEYOND
SMART CITIES

MODULE
1B

Introduction and Course Outline

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CERTIFIED DECARBONIZATION PROFESSIONAL - CDP OVERVIEW

The Certified Decarbonisation Professional Overview course covers climate change, sectoral decarbonization, built environment strategies, operational and embodied carbon in buildings, auditing certification, and exam sample questions.

DECARBONIZATION IMPACT ON HVAC INDUSTRY AND ENGINEERS

- Decarbonization is primarily affecting HVAC engineers in California and New York City, where carbon emissions regulations are planned.
- The HVAC industry is developing products to accommodate decarbonization, such as high-efficiency, high-lift heat pumps.





DECARBONIZATION OPPORTUNITIES AND CHALLENGES FOR HVAC&R, CONSTRUCTION MATERIALS, AND DESIGN SECTORS



- Building decarbonization requires technical proficiency, energy modeling, and precise construction.
- Opportunities lie in the need for more technically sophisticated operating techniques, including extensive data gathering and digital tools.
- The need for increased continuity among the design, construction, and operations phases of building life may provide new services.

TRENDS IN DECARBONIZATION PRACTICES AND POLICIES

- Zero-energy buildings are not necessarily Zero-Carbon Battery (ZCBs).
- A true ZCB adjusts its behavior to minimize GHG emissions from the electricity it consumes.
- The inadequacy of current incentives for building decarbonization is a major challenge.



CHALLENGES FOR ENGINEERS IN IMPLEMENTING DECARBONIZATION PRACTICES



- Energy costs do not reflect the potential of different forms of energy, leading building owners to choose higher GHG-emitting energy sources due to lower prices.
- The availability of fuels that deliver zero carbon emissions is limited, and their GHG emissions validation is sometimes questionable.
- Many of their clients do not understand decarbonization and may be uncomfortable with design solutions that address the problem

STRATEGIES FOR OVERCOMING CHALLENGES

- Design systems that can accommodate phased decarbonization.
- Use of currently accepted technologies that already incorporate some of the decarbonization technologies.
- Develop and refine the story about decarbonization and the techniques required to achieve it.



CITIES IMPLEMENTING DECARBONIZATION



- New York City is in the process of creating rules for the implementation of Local Law 97, which will limit GHG emissions for most buildings larger than 25,000 ft².
- The 2022 Zero Code for California establishes a ZCB energy standard for newly constructed nonresidential, high-rise residential, and hotel/motel buildings.
- Building designs must be both energy-efficient and flexible.

DECARBONIZATION ACCOUNTING IMPORTANCE

- Essential for organizations to focus emissions reduction efforts.
- Helps develop strategies and track the impact of reduction initiatives.
- Directs efforts towards efficiency improvement, renewables introduction, and offset purchase.
- Provides a quantified feedback loop for tracking if initiatives are achieving desired outcomes.



DECARBONIZATION ACCOUNTING CHALLENGES

- Carbon accounting requires accurate, real-time, and historical energy data and factor sets.
- Regular updates are necessary for benchmarking performance against targets.
- Data collection and emission calculations should adhere to internationally accepted standards.
- Manual data collection and spreadsheets can lead to risk and productivity loss, especially for complex, global organizations.
- Data is often stranded in silos or spreadsheets, making it difficult to access consolidated metrics.
- Data quality is inconsistent and unreliable, increasing the likelihood of inaccurate or incomplete data.
- High time and cost of sustainability reporting are associated with manual data management.
- Ongoing sustainability performance is poorly understood, making it difficult to monitor and manage sustainability performance.





BENEFITS OF DECARBONIZATION AUDIT

- Provides a comprehensive understanding of an organization's carbon emissions.
- Helps identify reduction and offset opportunities for carbon emissions.
- Enables the creation of a tailored strategy for achieving carbon reduction goals.
- Ensures reporting aligns with industry practices and regulatory requirements.
- Facilitates operational cost savings and energy bill reduction.





BENEFITS OF DECARBONIZATION AUDIT +



- Differentiates the organization from competitors by demonstrating best practices in carbon reduction and energy efficiency.
- Ensures continuous monitoring of GHG emissions for improved performance.
- Builds the organization as a sustainability leader.
- Fulfills customer requirements for sustainability credentials.
- Elevates the organization's reputation by contributing to zero carbon emissions and supporting the UK Government's Net Zero 2050 target.

ESG REPORTING DISCLOSURE



- GHG emissions data is crucial for tracking and disclosing performance against net zero goals.
- Carbon accounting informs the "E" in ESG reporting, recognizing sustainability risk as investment risk.
- ESG reporting frameworks require quantitative or qualitative information for a score or peer-comparison benchmark.

ESG REPORTING DISCLOSURE +



- Reporting frameworks indicate how a company's operations impact the environment and climate change's impact on value generation.
- Relevant to financial stakeholders and the general public.
- ESG reporting frameworks require disclosure of an organization's environmental impact, often including GHG emissions.
- Accountability for emissions must be as rigorous as financial accounting due to increased investor interest.



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THANK YOU

