

Peer-to-Peer Discussion: AI, Innovation, Tech, and Sustainability

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Session Focus

Emerging technologies are reshaping sustainability. This circle examines how AI, data tools, and innovation can drive efficiency, transparency, and impact.

Key Discussion Points

1. Distinction between traditional, generative, agentic AI
 - Traditional AI: Designed for specific, narrow tasks using rule-based logic or statistical models (e.g., spam filters, credit scoring models)
 - Generative AI: Creates new content based on patterns learned from large datasets (e.g., ChatGPT, Midjourney)
 - Agentic AI: AI systems that act as autonomous agents, capable of planning, reasoning, and executing tasks across multiple steps without constant human input (e.g., personal assistant to schedule meetings, multi-step workflow automation agents)
2. Governance & Accountability
 - Corporations must ensure explainability of AI decisions and be answerable for outcomes
 - Challenge: Evidence is clear to a jury, but AI models often are not
 - Ongoing academic research on data centers and their environmental impact
 - Questions around total cost of ownership and operational efficiency
3. Practical Use & Perception
 - Generative AI produces different responses across cultures; nuance and cultural sensitivity often lost in AI-generated content
 - Educational concern: What is the value of human knowledge vs. delegating to AI?
 - AI accelerates prior art searches and patent drafting, but legal frameworks lag
 - Sustainability professionals remain skeptical of AI – perception challenge amid hype
4. Industry Applications & Sustainability
 - Tire industry using AI for big data modeling, sensors, and predictive analytics to improve sustainability KPIs
 - [Leaficient](#): Using AI image processing to enable more sustainable use of agricultural resources and improve crop outcomes
 - [Reclamation Factory](#): Developing a machine learning sound model that aid cost-effective polymer sorting (such as for use in recycling facilities)
 - [Building Technologies Office at DOE](#): Using AI to manage control systems to reduce overall energy consumption nationwide
5. Government Policy & Infrastructure
 - Environmental AI policy likely needs to be local-level, not state or federal
 - Key issues: Transmission line opposition, grid strain from data centers, and tariff considerations
 - Important to consider context: Lack of systems for self-locating energy sources, causing data centers to be a customer on the grid like citizens/consumers, causing strain on said consumers

6. Workforce & ESG Strategy

- AI adoption impacts talent pipelines – loss of entry-level training opportunities will lead to human talent cost in future
- Leaders need robust scenario strategies for ESG expectations and pipeline stability

7. What's working: Trust & Transparency

- Build mechanisms for data provenance: “Where did you get this?” and IoT traceability
- Emerging field: Prompt engineering and creating trusted “oracles” (base truth) for multi-stakeholder environments
- Integration of blockchain for responsibility tracking
- Pittsburgh has the resources to lead in AI governance and guiderails – potential for a collaborative “trade union” approach
- Organizational policies: Many corporations lack robust AI policies, especially around confidential data. These companies will likely be hit hardest when forced to explain (jury, court of public opinion, etc.) outcomes/impacts caused due to their use of AI