



# Williston Basin CORE-CM Initiative

USEA CONSENSUS Webinar: Introduction to the Carbon Ore, Rare Earth, and  
Critical Minerals (CORE-CM) Initiative for U.S. Basins: Part One  
December 2, 2021

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# Williston Basin CORE-CM Initiative – AOI6

## CORE-CM INITIATIVE

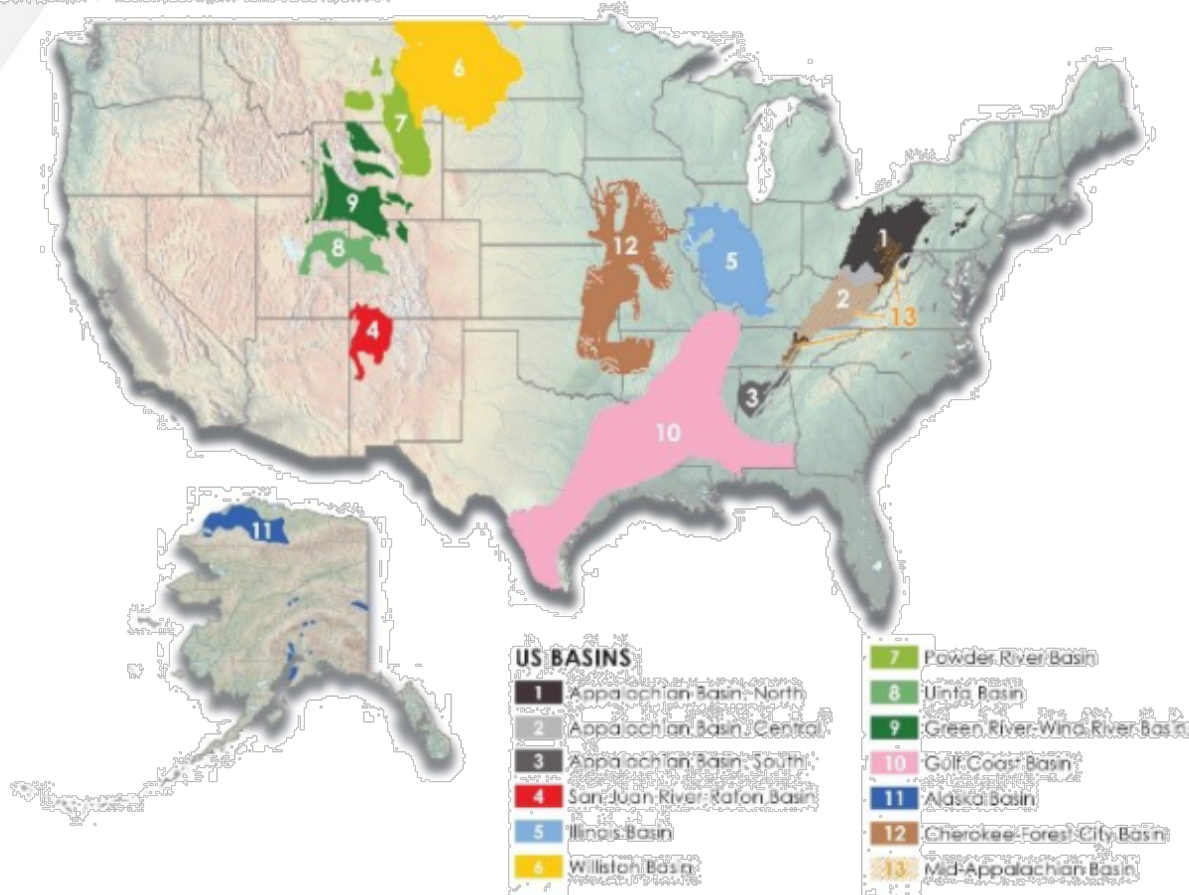
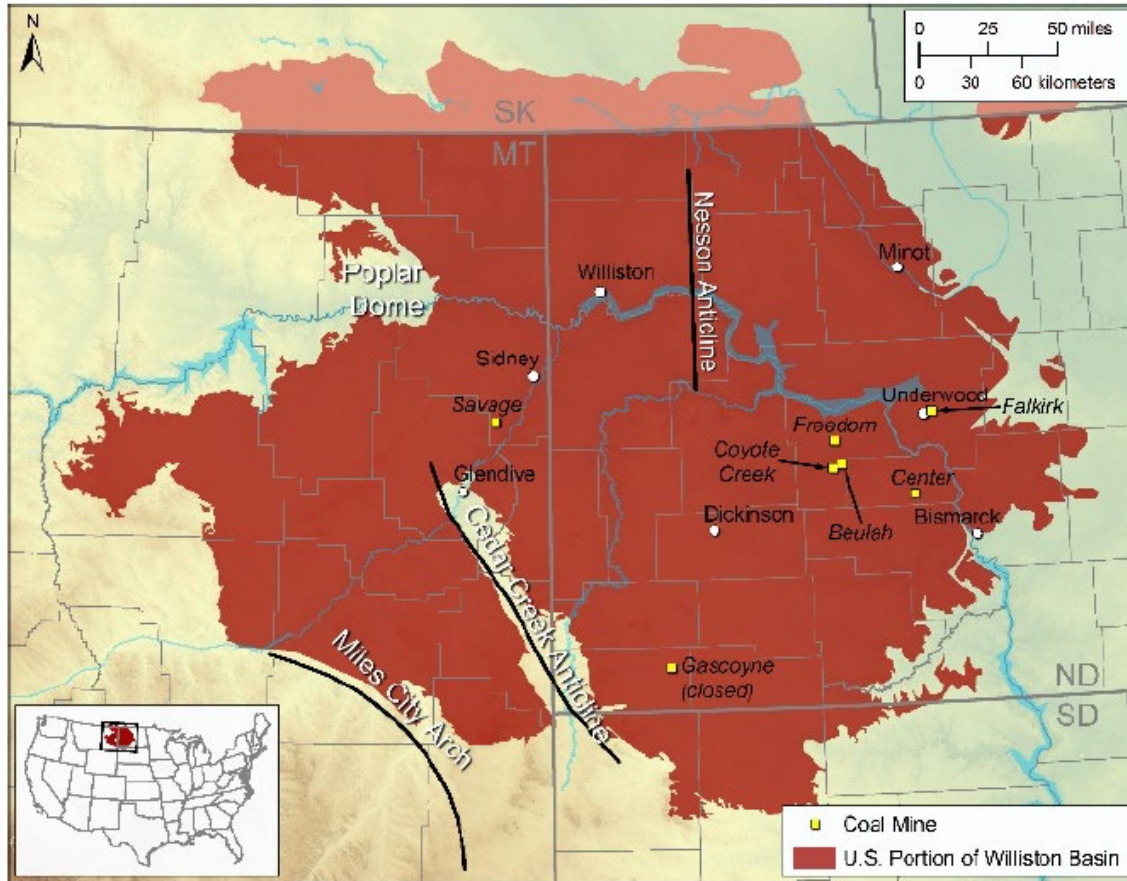


Image Credit: DOE NETL

Building on over 70 years of natural resource development in the Williston Basin to provide new resources and materials to serve the United States.

# Why the Williston Basin – Resources, Infrastructure, and Knowledge



- Contains over 800 years of lignite coal at existing rates of use.
- Contains extensive infrastructure for mining, transport, and resource processing.
- Recent Bakken oil boom has demonstrated capabilities to grow the region rapidly.
- Significant research has been done by members of the project team on rare-earth element (REE) and critical mineral (CM) content and exploration of technologies for extraction of these components.

# Approach and Deliverables

- 1) Assess
- 2) Identify gaps
- 3) Develop plans to advance



- Basinal resource assessment
- Characterization and data acquisition plan
- Waste stream reuse plan
- Basinal business commercialization plan
- Technology assessment, development, and field testing plan
- Technology innovation center plan(s)
- Stakeholder outreach and education plan
- Summary of environmental justice considerations.
- Summary of economic revitalization and job creation outcomes
- Environmental, safety, and health analysis for products proposed to be manufactured from CORE-CM resources

# Building Private–Public Partnerships – Technology Innovation Centers

- **Technology innovation centers (TICs) will provide a centralized and consistent platform to develop and validate CORE-CM technologies at laboratory scale, including technologies that utilize advanced manufacturing techniques.**
  - Accelerate research that will enable commercial deployment of advanced processing and production of REEs, CMs, and CBPs
  - Support engagement of public–private partnerships and basinal industries to advance new and innovative technology development as well as the potential for new product production
  - Advance opportunities for the education and training of the next generation of technicians, skilled workers, and STEM (science, technology, engineering, and mathematics) professionals



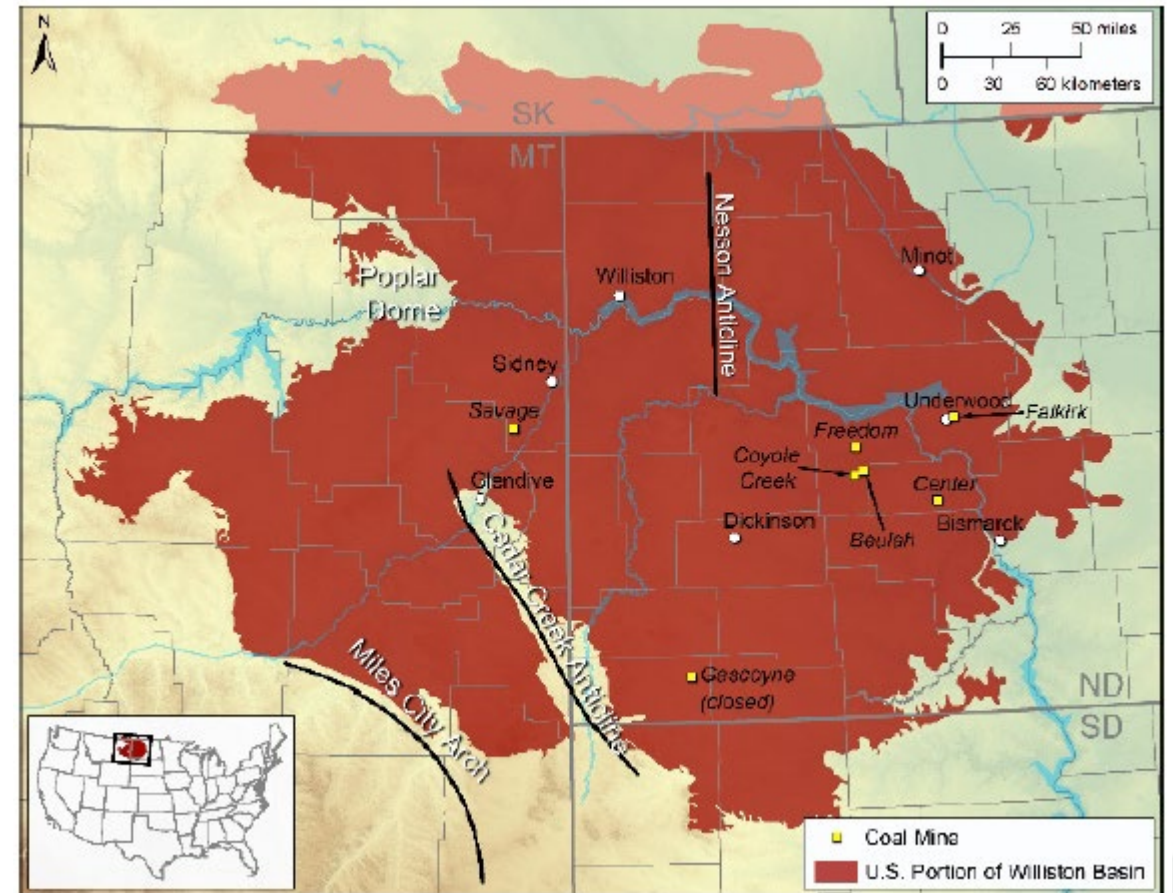
# Williston Basin CORE-CM Project Team

	Mining	Coal Utilities	Research/ Academic Institutions/ Mining Schools	State Geological Surveys	Mineral Processing	Manufacturing	Business/ Financial	CORE-CM Cooperation
<b>Core Research Team</b>								
UND Energy & Environmental Research Center			X					
UND Institute for Energy Studies			X					
UND Nistler College of Business & Public Administration			X					
Pacific Northwest National Laboratory			X				X	
North Dakota State University			X				X	
Montana Tech University			X					
Critical Materials Institute (Ames)					X			
<b>Project Partners</b>								
NDIC Lignite Research Program	X	X					X	
North American Coal	X				X			
BNI Energy	X	X						
Minnkota		X						
Basin Electric Cooperative		X						
Current Lighting Solutions					X	X		
Northrup Grumman						X		
General Atomics					X	X		
North Dakota Geological Survey				X				
South Dakota Geological Survey				X				
North Dakota Department of Commerce							X	
Semplastics					X	X		
Lignite Energy Council	X	X						
Western Dakota Energy Association	X	X				X	X	
North Dakota Governor's Office				X			X	
U.S. Geological Survey				X				
Wyoming School of Energy Resources CORE-CM Team								X
Illinois Geological Survey CORE-CM Team								X
U of Alaska CORE-CM Team								X
U of Utah CORE-CM Team								X

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# Benefits to the Williston Basin

- Continued and expanded use of our vast lignite resources
- Regional economic development







# Stakeholder Meetings

- At 6 months: virtual state-of-the-research meeting with coalition and invited stakeholders
- At 12 months: in-person open house (EERC or Bismarck) – networking/what we've learned
- At 16–18 months: format and content TBD



# Moving Forward

- To date
  - Significant stakeholder participation
  - Wealth of information to build from
  - Great team to get the job done
- Challenge
  - Continuing to move the project forward after the conclusion of this first initiative



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A wide-angle photograph of a university campus at sunset. The sun is low on the left, casting a warm glow over the scene. In the foreground, there are trees with yellowing leaves. In the background, there are several large, multi-story brick buildings, likely university halls or labs, and a parking lot filled with cars.

**THANK YOU**

Critical Challenges. Practical Solutions.