



Energy & Environmental Research Center (EERC)

State Energy Research Center (SERC) – Driving North Dakota's Energy Future

Presented to the Senate Energy and Natural Resources Committee
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COO and VP for Intellectual Property

EERC VISION

TO LEAD THE WORLD IN
DEVELOPING SOLUTIONS
TO ENERGY AND ENVIRONMENTAL
CHALLENGES.

EERC QUICK FACTS FY22



FISCAL YEAR FUNDING

\$76 MILLION

TOTAL ACTIVE
CONTRACTS



179

77%
OF CONTRACTS
WERE WITH

PRIVATE
INDUSTRY



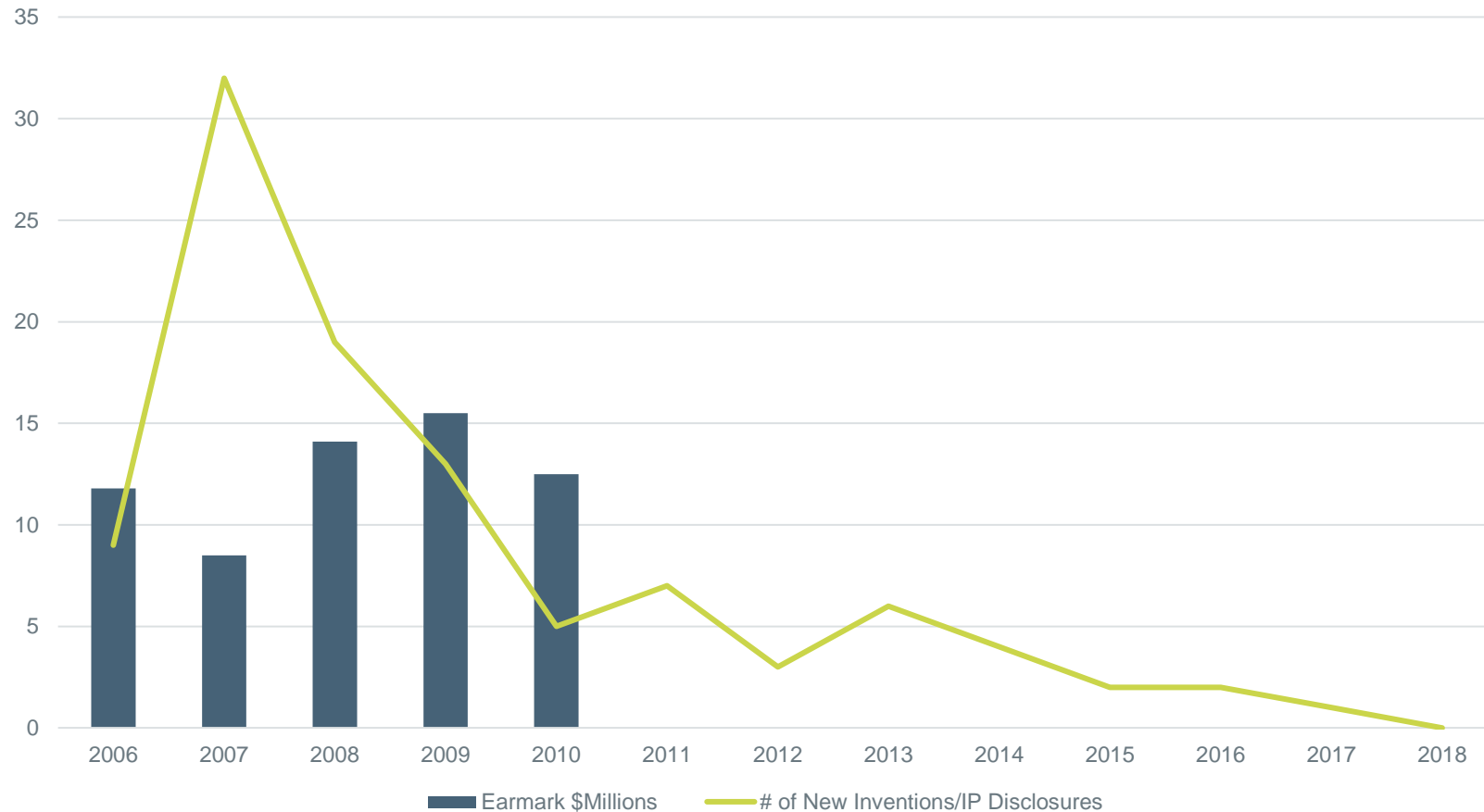
ECONOMIC
IMPACT
IN THE GRAND
FORKS REGION



**\$108.3
MILLION**

BEFORE SERC: Significant Reduction in New EERC Innovation and Invention

Reduced Exploratory Research Funding Results in Fewer Inventions

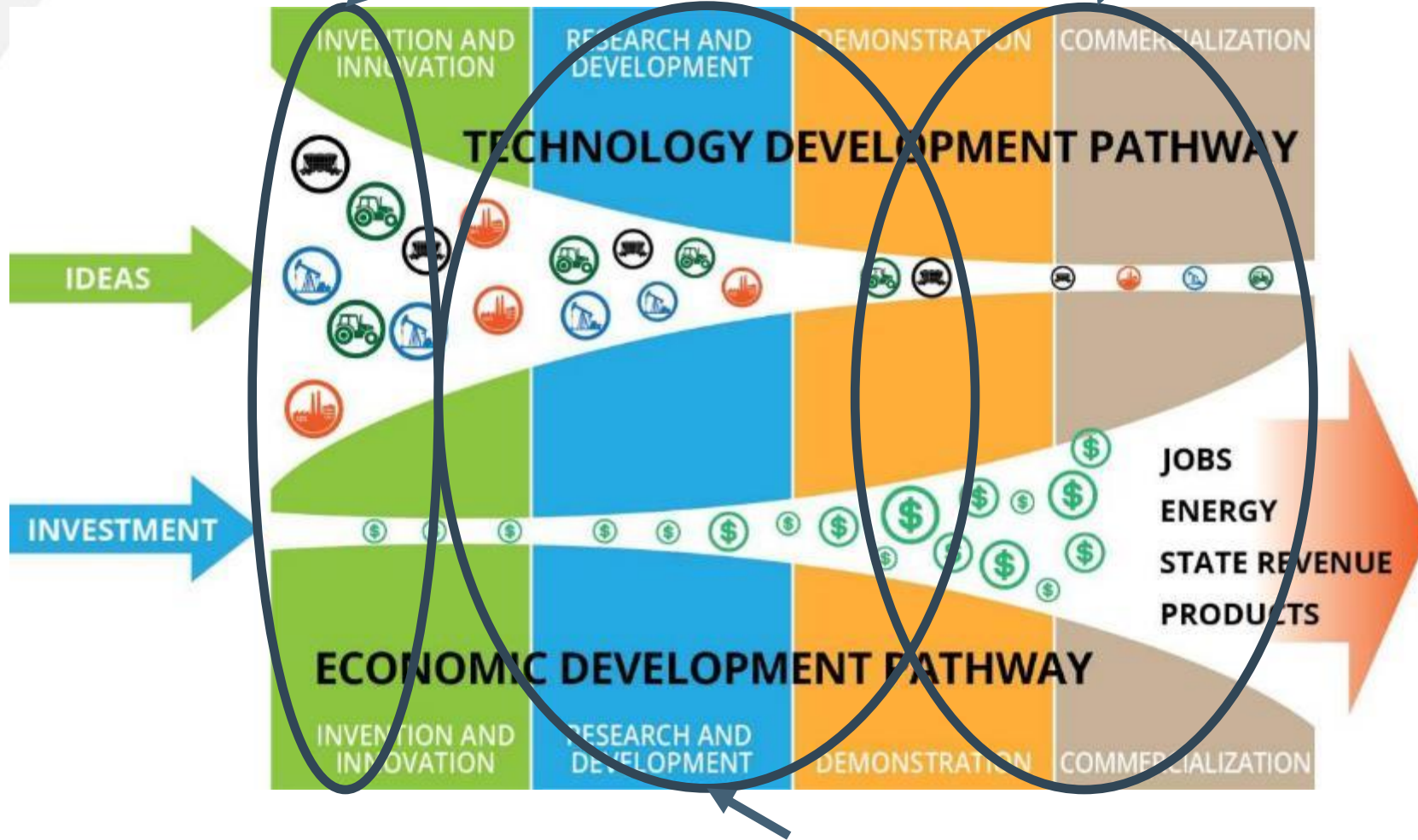


SERC FOCUS AREAS

- Exploratory energy research
 - Explore fundamental, transformational ideas to shape the future energy portfolio of North Dakota.
- Rapid response to critical North Dakota issues
 - At the request of the North Dakota Industrial Commission (NDIC), conduct research to address emerging issues.
- Education and outreach
 - Provide opportunities for all ages and demographics to learn about North Dakota energy – not academic.
- \$5 million/biennium (currently has a sunset clause in 2027)
- Funded by NDIC contract, with reporting requirements to NDIC and the interim Energy Development and Transmission Committee (EDTC)

State Energy Research Center

Clean Sustainable Energy Authority



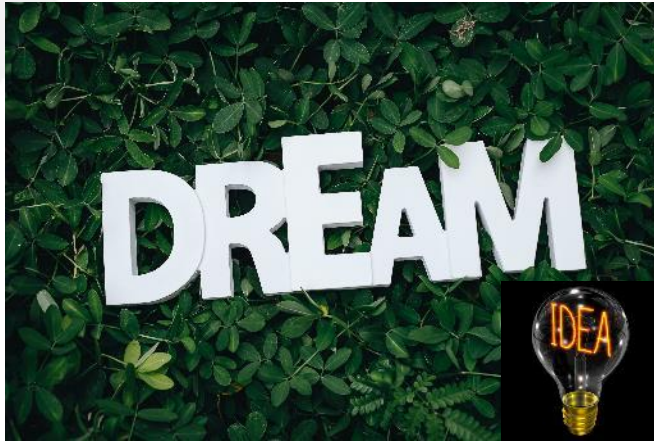
Lignite, Oil and Gas, Renewable
Research Programs, and Legislatively Directed Projects

KEYS TO INNOVATION

- Innovation is inclusive not exclusive.
 - ◆ Broad involvement and broad topics
- Innovation needs time and resources.
- Innovation needs a nurturing atmosphere.
 - ◆ Healthy balance of structure and freedom
- Innovation is not a project or a program; it's a culture.
 - ◆ Innovation breeds innovation.

<https://www.inc.com/erik-sherman/3-rules-to-encourage-innovation.html>

MANAGING UNCERTAINTY IS THE KEY TO INNOVATION



INNOVATION



Minimize Financial Uncertainty



Risk Acceptance



Agility



**COMMERCIAL
EMPLOYMENT**



Flexibility



Changing
Dynamics of
the Future

Critical Challenges. Practical Solutions.

SERC ACCOMPLISHMENTS

\$21 Million in
Other Proposals

\$9 Million in
Pending Proposals

\$6 Million in
Other Awards

Nearly **60**
Energy Hawks from
5 Higher Education
Institutions

50 Projects
Focused on ND Energy

3 Federal Opportunities
Pursued for the State – Grid,
Hydrogen, Direct Air Capture

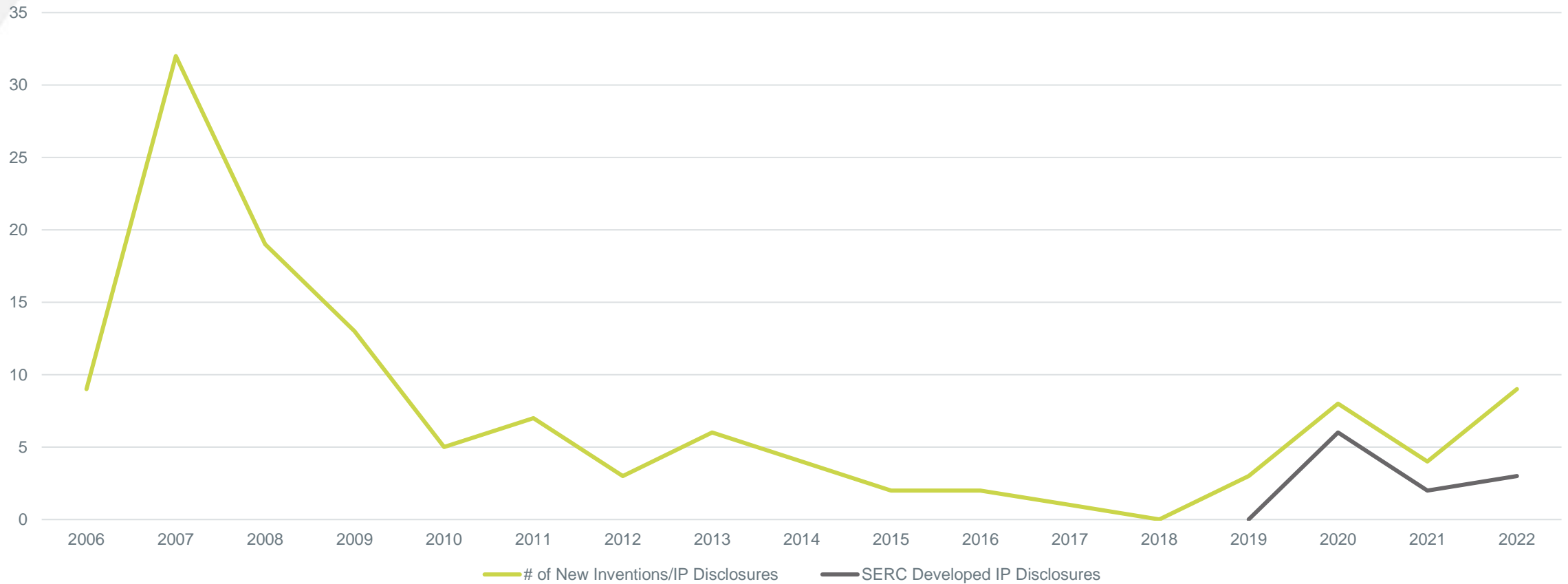
13 Invention
Disclosures

8 Patent
Applications

3 Patents
Granted

SERC EFFECT ON INNOVATION

Invention Disclosures since SERC



ENERGY HAWKS – CONCEPT

- Bring together a diverse group of college students and immerse them in all things North Dakota energy, resulting in the following:
 - A new perspective on the energy research needs for North Dakota
 - Future energy leaders
 - Knowledgeable North Dakota energy advocates/peers
 - Knowledgeable voters (North Dakota and beyond) on topics affecting energy

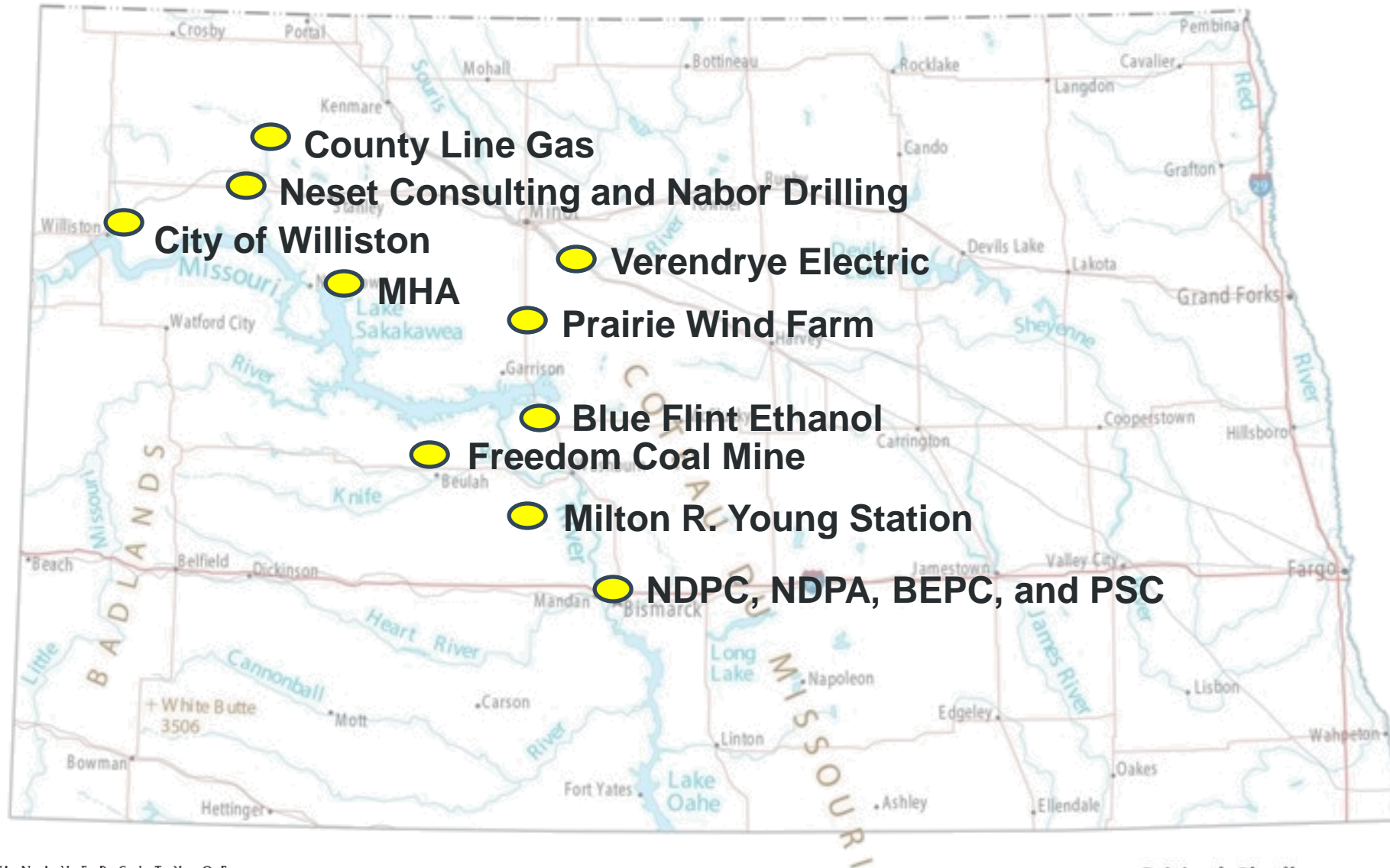


THE KETTLES



Critical Challenges. Practical Solutions.

2022 ENERGY FIELD TRIP



SUMMARY

- SERC has reignited invention and innovation by EERC researchers leading to:
 - New energy technologies for
 - Additional nonstate funding in
 - Technology demonstrations in
 - Student experiences across
- Removing the sunset clause will allow SERC to continue to do the same with certainty.
- Increased funding will be used effectively for even greater results.

North Dakota!



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

THANK YOU

Critical Challenges. Practical Solutions.