



NRIC

National  
Reactor  
Innovation  
Center

# Program Update

*What Inspires Us*

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inspire

empower

deliver



NRIC

# 5-Year Program Objectives

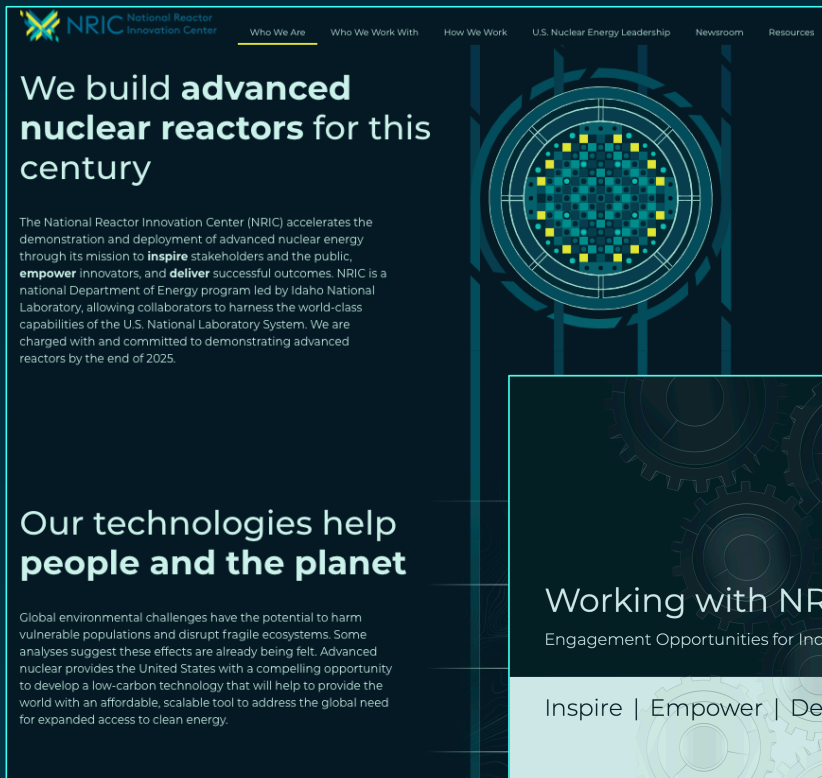
## **Enable demonstration of at least 2 advanced reactors**

- Make available infrastructure, sites, materials, expertise
- Provide regulatory support
- Best practices in public engagement

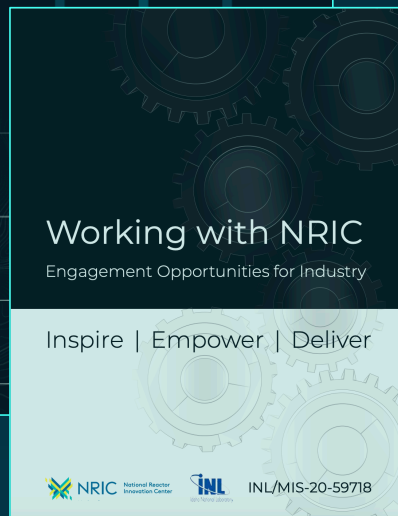
## **Prepare DOE/labs for continuing innovation and demonstration**

- Develop best practices for planning/construction/demonstration of nuclear projects
- Develop enduring infrastructure and expertise
- Establish methods for efficient coordination among laboratories

# Establishing NRIC – Planning and Engagement



The screenshot shows the NRIC website homepage. At the top is the NRIC logo and navigation links: Who We Are, Who We Work With, How We Work, U.S. Nuclear Energy Leadership, Newsroom, and Resources. The main heading reads "We build advanced nuclear reactors for this century". Below this is a paragraph describing the NRIC's mission to accelerate advanced nuclear energy through its mission to inspire stakeholders and the public, empower innovators, and deliver successful outcomes. A secondary heading reads "Our technologies help people and the planet", followed by a paragraph about global environmental challenges and the need for clean energy. A large graphic of a reactor core is visible in the background.



The image shows the cover of a document titled "Working with NRIC: Engagement Opportunities for Industry". The cover features the NRIC logo at the top, the title "Working with NRIC" in a large font, and the subtitle "Engagement Opportunities for Industry" below it. At the bottom, it lists the NRIC's mission: "Inspire | Empower | Deliver". The background has a pattern of interlocking gears.



Developed  
program  
management  
documents

Established  
crosscutting projects  
and coordination with  
programs across INL

Performed a gap  
assessment for  
demonstration  
capabilities

Launched website  
([nric.inl.gov](http://nric.inl.gov))

Established  
collaboration  
with NRC

Established  
projects with a  
spectrum of  
National  
Laboratories



N  
R  
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Leadership  
Team



Dr. Ashley Finan  
Director



Nicholas Smith  
Deputy Director



Brad Tomer  
Chief Operating Officer



Key  
Technical  
Staff



Greg Core  
Technical Lead



Dr. Jon Webb  
Senior Engineer



Communications  
Lead



Donna Spangler  
Senior Communications Strategist



Project  
Management  
Staff



Stephen Grabinski  
Project Manager



Emily Gallegos  
Project Coordinator



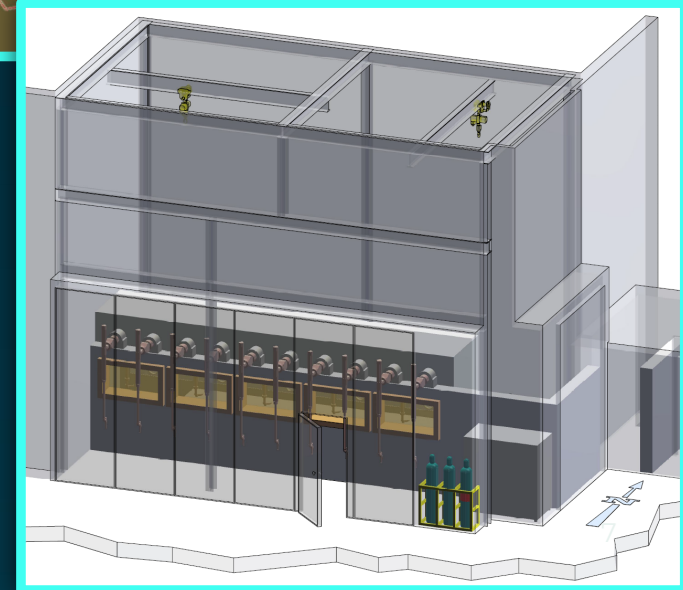
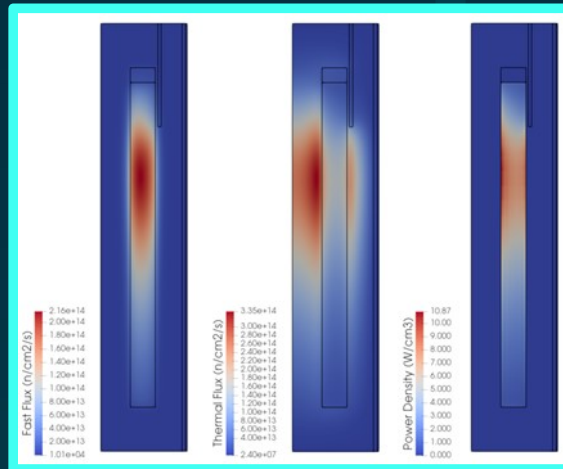
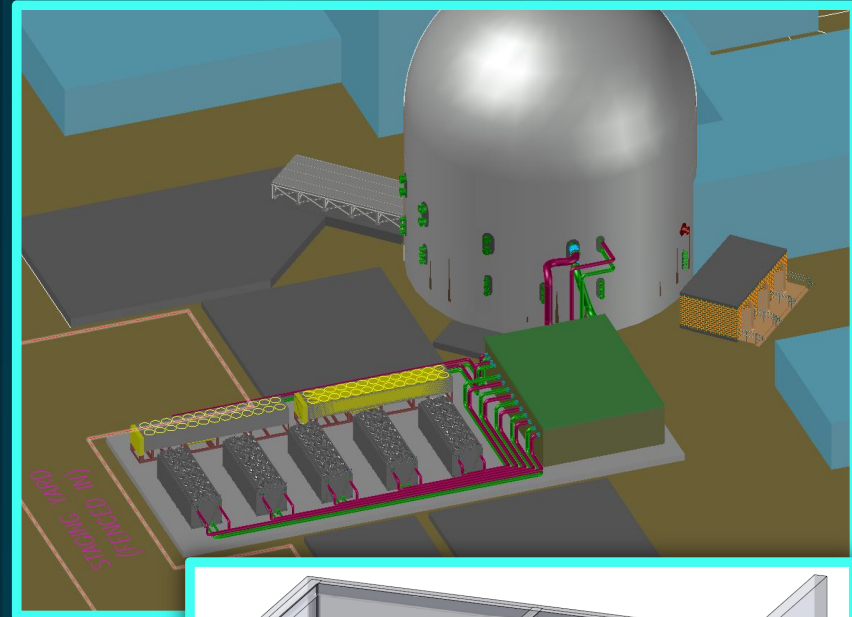
Christine Williams  
Project Manager



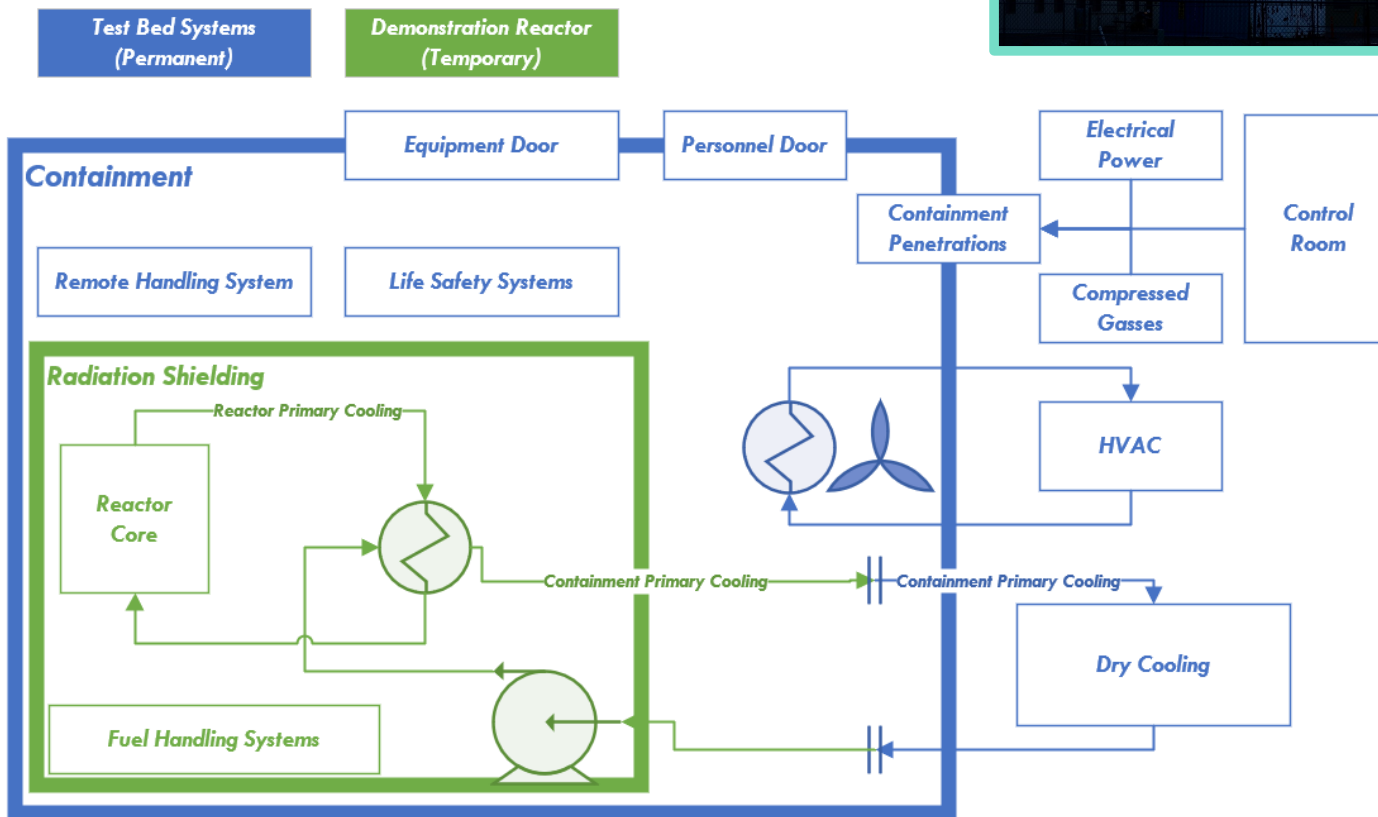
WE'VE DONE THIS BEFORE  
WE'RE GOING TO DO IT AGAIN  
with some refinements

# Mod. #1 Empowering Innovators

- Private Sector Driven Effort
- NRIC Resource Team
- Virtual Test Bed
- Demonstration Resource Network
  - Experimental facilities
  - Fuel facilities
  - Test beds
  - Demonstration sites



# Demonstration Test Beds In Development



- User input received
- Functional and Operational Requirements Defined
- Concept of Operations Defined
- Digital engineering implemented
- Preconceptual design complete
- Request for Expressions of Interest released July 21 for A-E firm to complete design work in FY21

# Siting Preparations Underway



- Completed Initial Siting Evaluation of 8 national sites with ANL, ORNL, U-Michigan
  - Additional sites in FY21

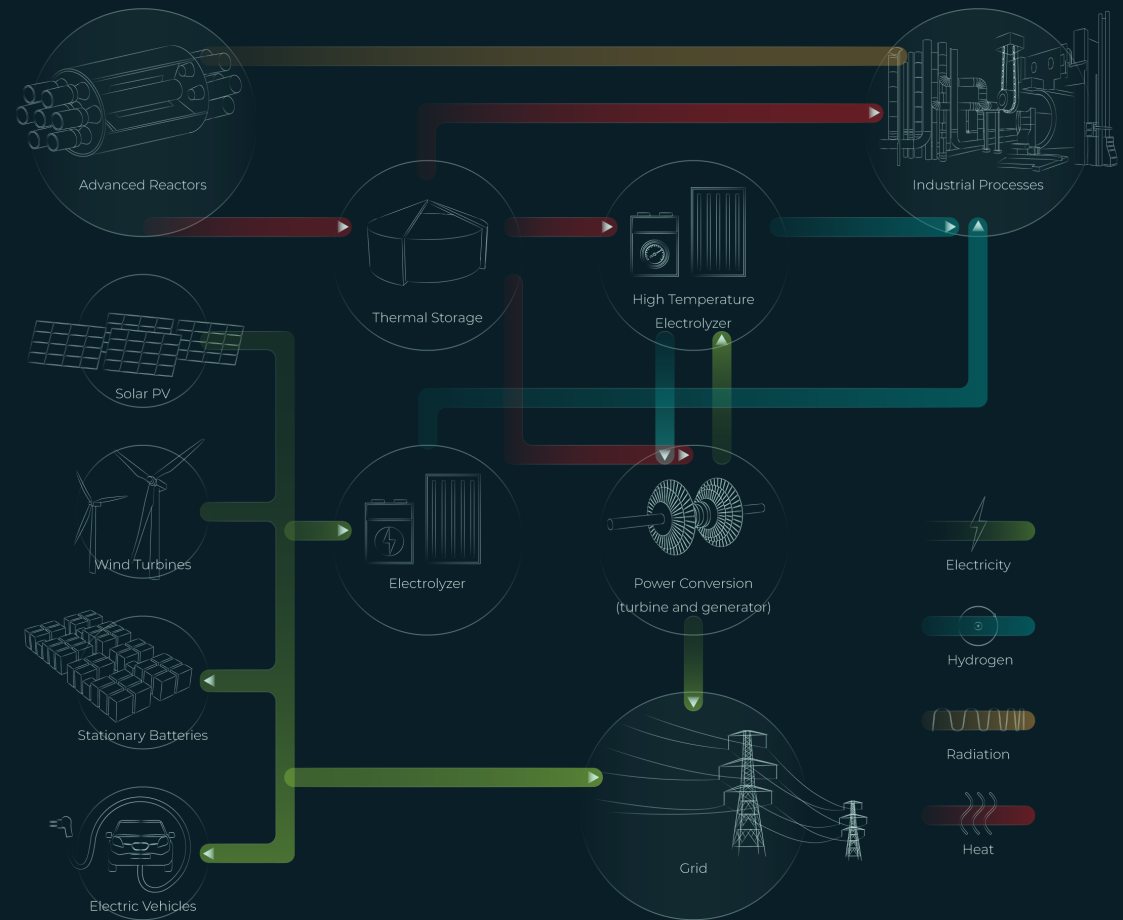
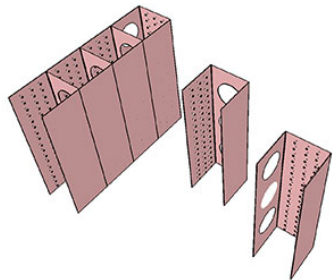
- Identified 9 candidate INL sites and initiated preparation for demonstration projects
  - Seismic; meteorological; grid access; water; environmental; regulatory; cost savings.



# Mod. # 2

## Addressing Cost and Markets

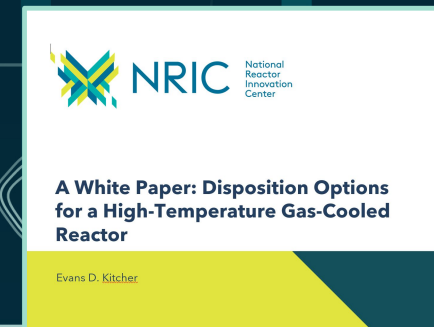
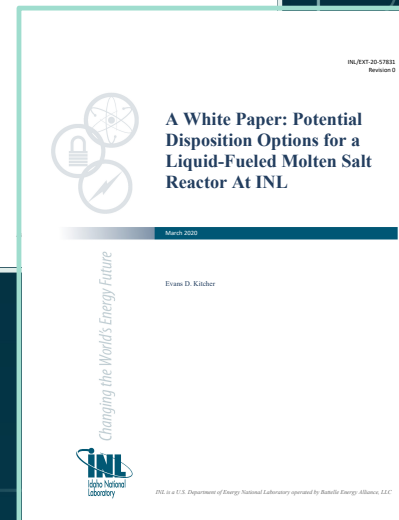
- Digital Engineering
- Advanced Construction Technologies
- Integrated Energy Systems



# Mod. # 3

## Proactive Impact Management

- Environmental impact assessment
  - Cultural and biological surveys
  - Plant parameter envelope
  - Water use
- Packaging, storage, transport, and disposition



# Mod. # 4 Engagement

- Tools
  - Web/Social
  - Flyover, Mapping, Videos
- Best practices development

Menu

Choose a site: All

Legend

- Site #9
- Site #10

Adjust Camera Height

NRIC National Reactor Innovation Center Demonstration Resource Network

Search by Map

Zoom to the facility of interest then select it to view the details.

CR

Filter by Capability

- Chemical and Molecular Science (emerging)
- Chemical Engineering
- Condensed Matter Physics and Materials Science (emerging)
- Cyber and Information Sciences
- Demonstration Test Bed (existing building)
- Environmental Subsurface Science
- Fuel Development and Fabrication
- Large-scale User Facilities / R&D Facilities / Advanced Instrumentation
- Mechanical Design and Engineering
- Nuclear and Radiochemistry
- Nuclear Engineering
- Power Systems and Electrical Engineering
- Systems Engineering and Integration

Clear Filter

Filtered Results

- ATIS Test Train Assembly Facility (TTAF) (TRN-1028)
- CTRC Communications Research Facility (RFP-413)
- CTRC Wireless Comm. Support Building (RFP-423)
- Center for Advanced Energy Studies (CAES) (RFP-496)
- Collaborative Computing Center (RFP-492)
- EBR-II Reactor Plant Building (MFC-767)

Experimental Breeder Reactor II Dome (EBR-II) Microreactor Demonstrations

Experimental Fuels Facility

Fuel and Applied Science Building (FASB)

Fuel Conditioning Facility (FCF)

NRIC The former home of the EBR-II reactor is one place we plan to host microreactor demonstrations.

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nruc.inl.gov/who-we-work-with

NRIC National Reactor Innovation Center

Who We Are Who We Work With How We Work U.S. Nuclear Energy Leadership Newsroom Resources

## Communities

The planning and construction of advanced nuclear power plants requires collaboration between Communities, Innovators, and the U.S. National Laboratory System. NRIC provides a platform for these groups to work with each other by communicating common visions and accomplishing shared goals.

Communities that host nuclear power technology are its most trusted stewards. Constructing new plants requires identifying



# NRIC Key Accomplishments FY20

**Established  
NRIC**

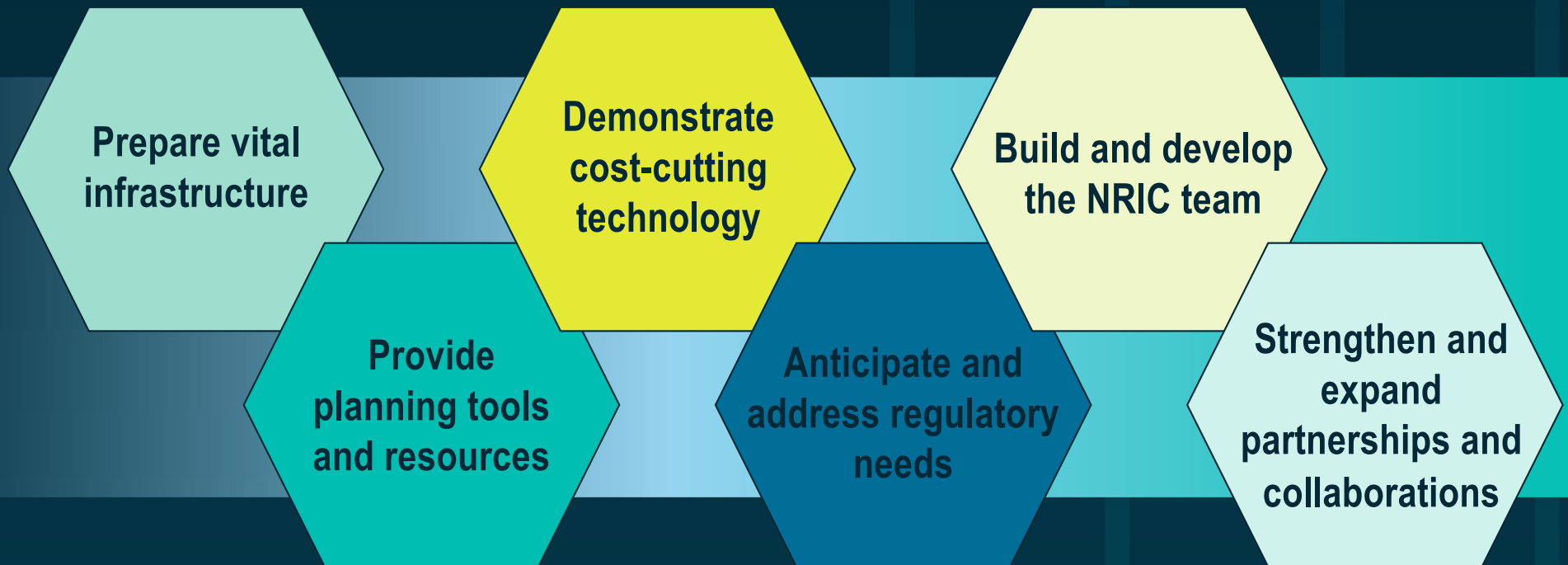
**Demonstration  
Test Bed under  
development**

**Siting  
preparations  
underway**

**Advanced  
Construction  
Technology  
RFP issued**

**Established  
Resource Team  
and Supported  
18 ARDP  
proposal efforts**

# Goals for FY21 – Maintain progress to support demonstrations by the end of 2025 and sustained innovation



**Thank you!**

**Questions?**