

# **NRIC Program Update Slides September 29 2020**

Ashley E Finan

September 2020



The INL is a U.S. Department of Energy National Laboratory  
operated by Battelle Energy Alliance

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**September 2020**

**Idaho National Laboratory  
Idaho Falls, Idaho 83415**

**<http://www.inl.gov>**

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U.S. Department of Energy  
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Contract DE-AC07-05ID14517**



NRIC

National  
Reactor  
Innovation  
Center

# Program Update

*What Inspires Us*

September 29, 2020

Ashley E. Finan, Ph.D., NRIC director

[ashley.finan@inl.gov](mailto:ashley.finan@inl.gov)



inspire

empower

deliver



NRIC

# 5-Year Program Objectives

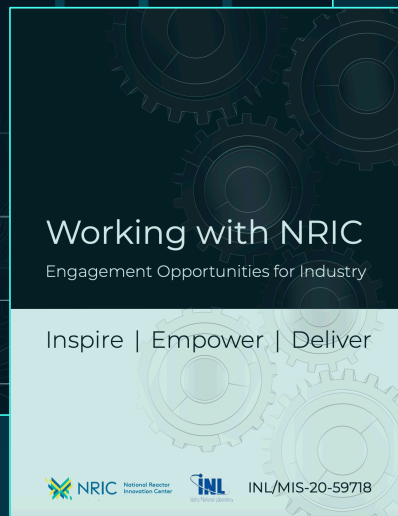
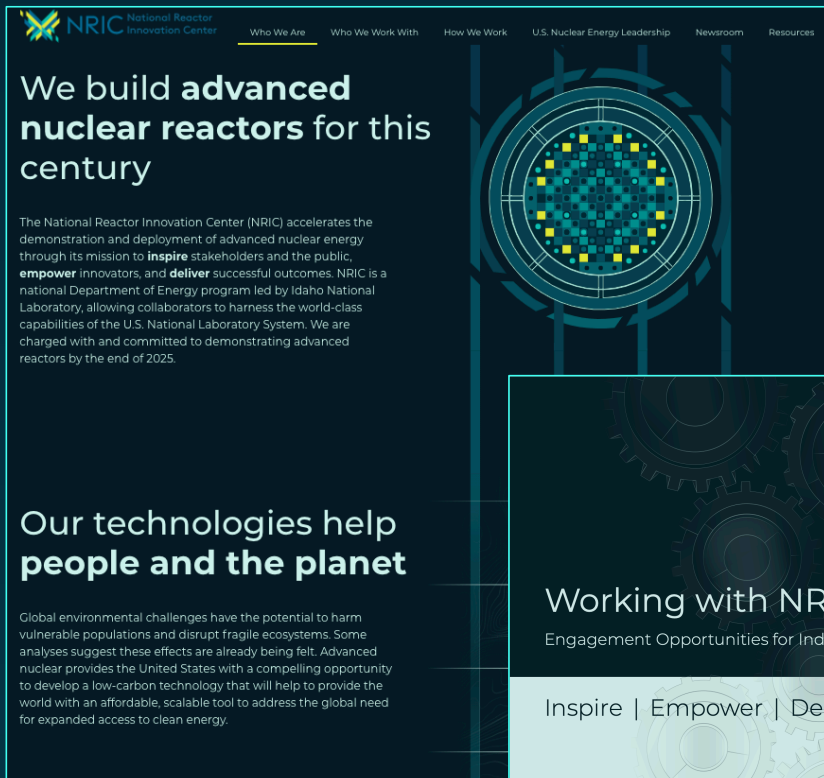
## **Enable demonstration of at least 2 advanced reactors**

- 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



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

Developed  
program  
management  
documents

Established  
crosscutting projects  
and coordination with  
programs across INL

Performed a gap  
assessment for  
demonstration  
capabilities

Established  
collaboration  
with NRC

Established  
projects with a  
spectrum of  
National  
Laboratories



# N R I C T E A M

## Leadership Team

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Dr. Ashley Finan  
Director



Nicholas Smith  
Deputy Director



Brad Tomer  
Chief Operating Officer



## Key Technical Staff

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Greg Core  
Technical Lead



Dr. Jon Webb  
Senior Engineer

## Communications Lead

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Donna Spangler  
Senior Communications Strategist

## Project Management Staff

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Stephen Grabinski  
Project Manager



Emily Gallegos  
Project Coordinator



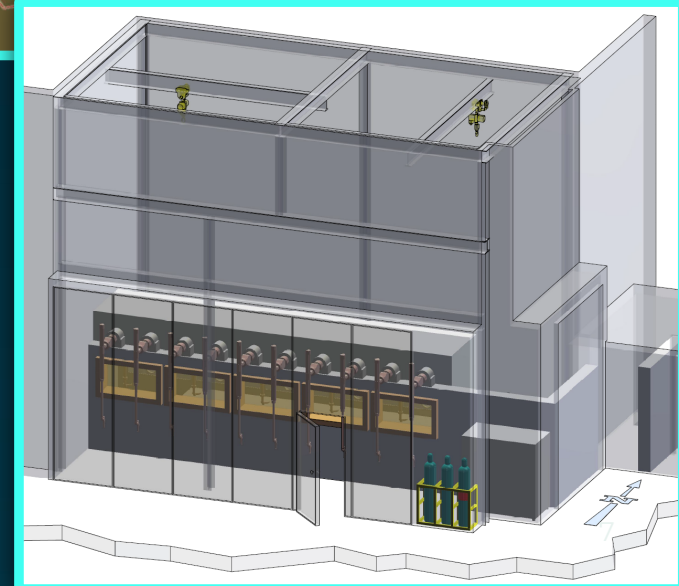
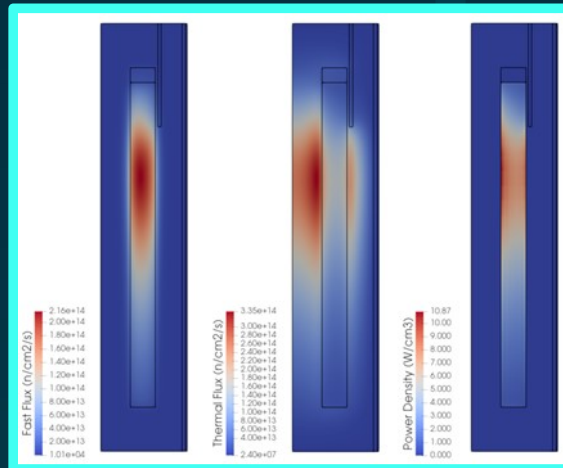
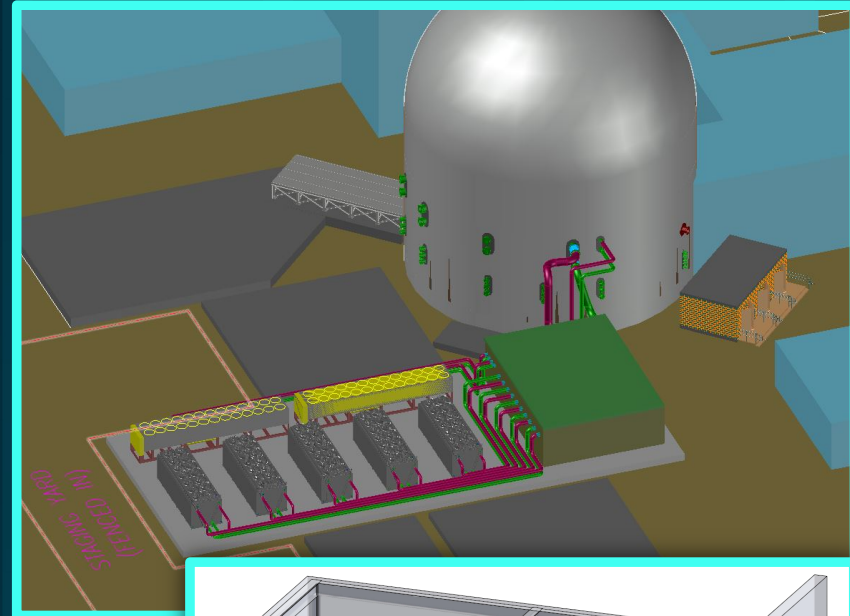
Christine Williams  
Project Manager



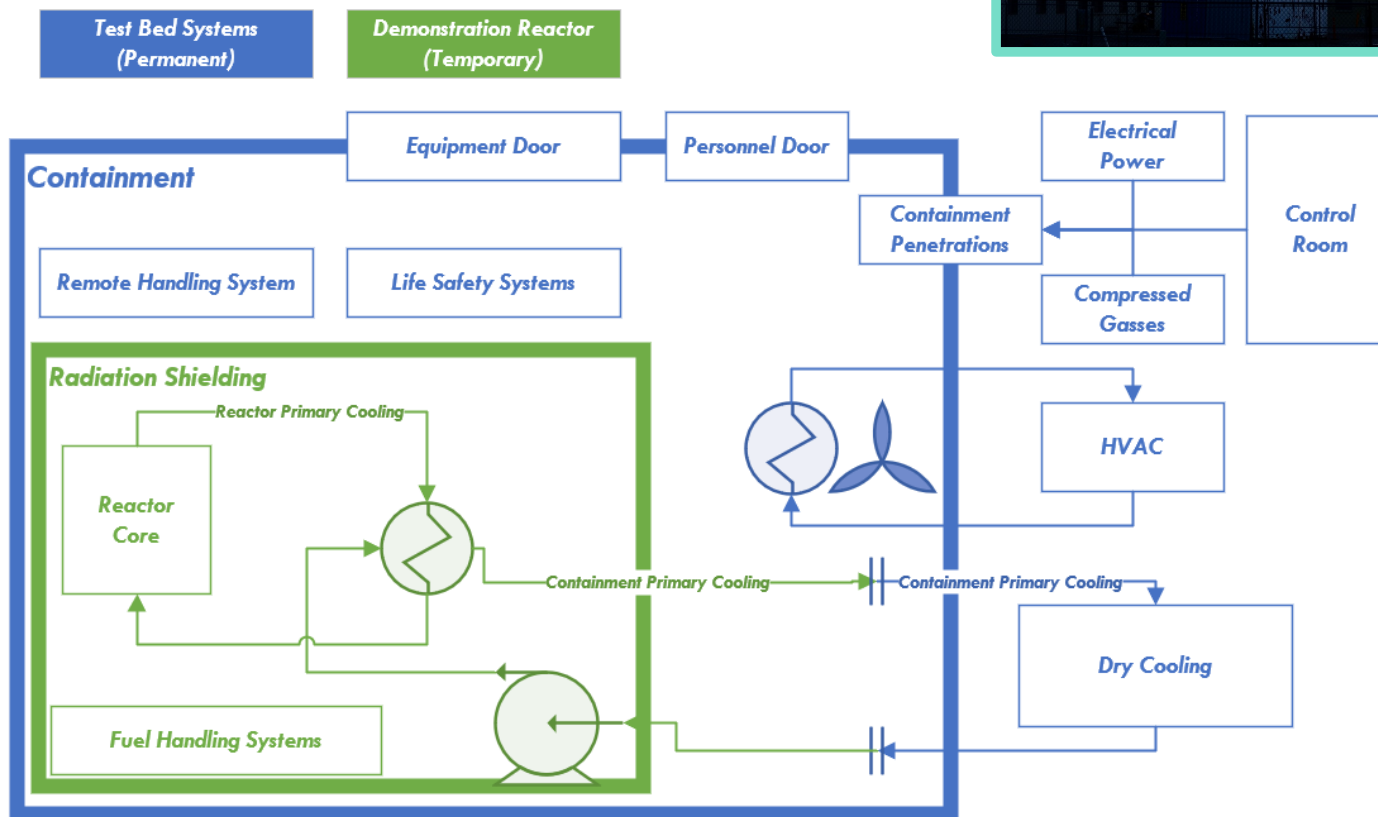
WE'VE DONE THIS BEFORE  
WE'RE GOING TO DO IT AGAIN  
with some refinements

# 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



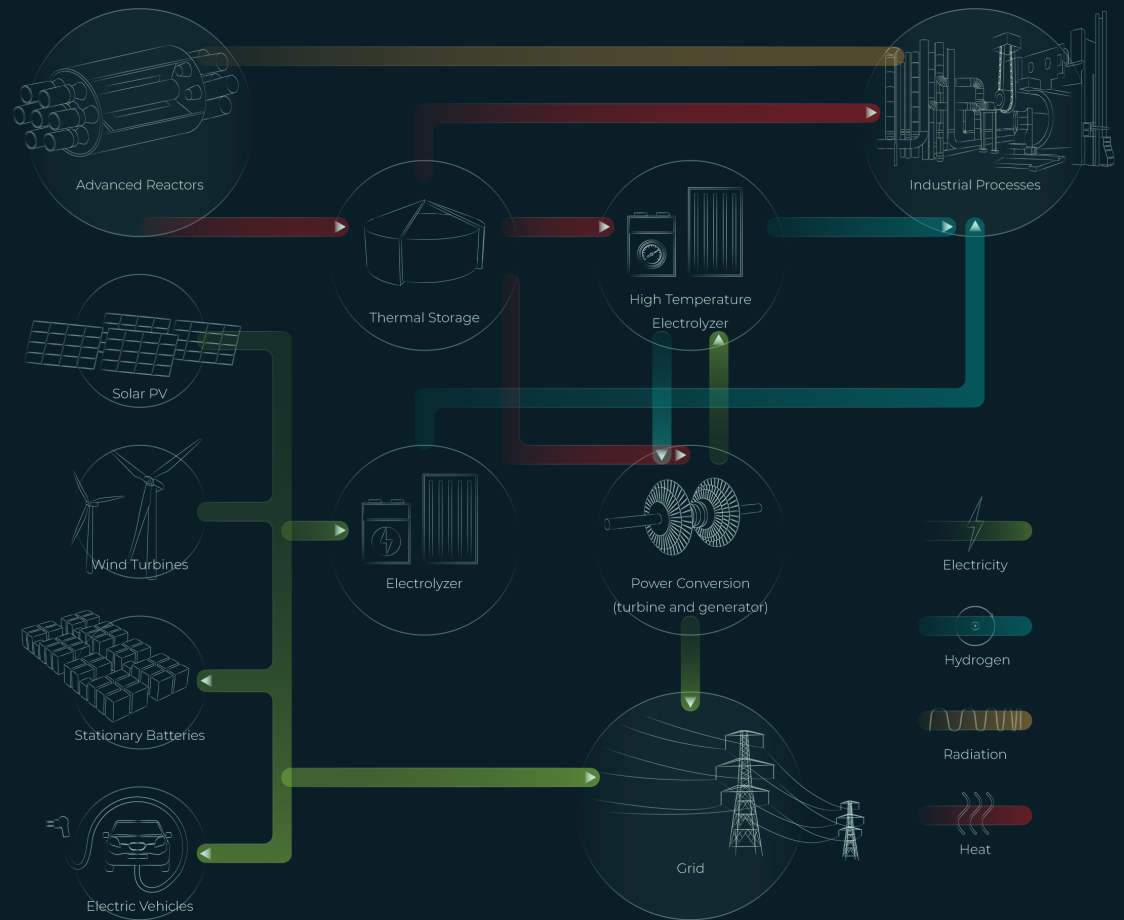
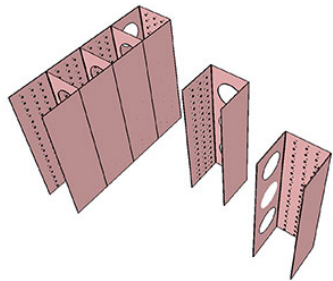
- Completed Initial Siting Evaluation of 8 national sites with ANL, ORNL, U-Michigan
  - Additional sites in FY21

- 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

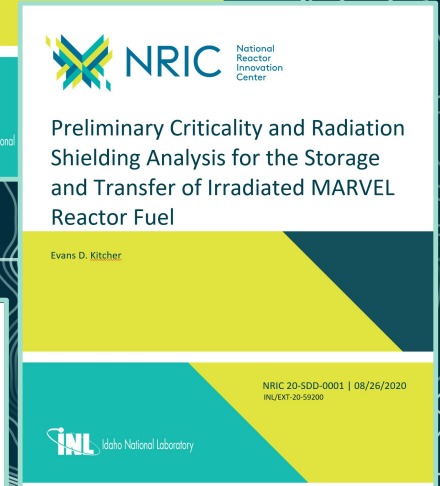
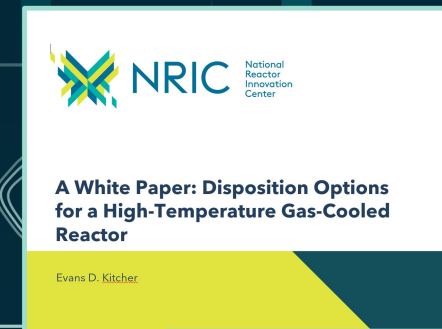
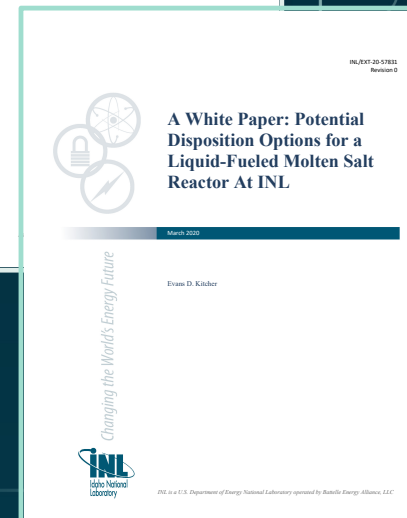
- Digital Engineering
- Advanced Construction Technologies
- Integrated Energy Systems



# 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

nrnc.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



Menu

Choose a site: All

**Legend**

Site #9

Site #10

Adjust Camera Height

0:41 / 1:08

**NRIC** National Reactor Innovation Center  
Demonstration Resource Network

**Search by Map**  
Zoom to the facility of interest then select it to view the details.

OR

**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) (TFA-100)
- CTRRC Communications Research Facility (CMF-613)
- CTRRC Wireless Comm. Support Building (WSP-623)
- Center for Advanced Energy Studies (CAES) (IF-695)
- Collaborative Computing Center (IF-692)
- EBR-II Reactor Plant Building (MFC-767)

Map

0 6 mi

Earthstar Geographics

**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.

1:42 / 3:33

12

# NRIC Key Accomplishments FY20

**Established  
NRIC**

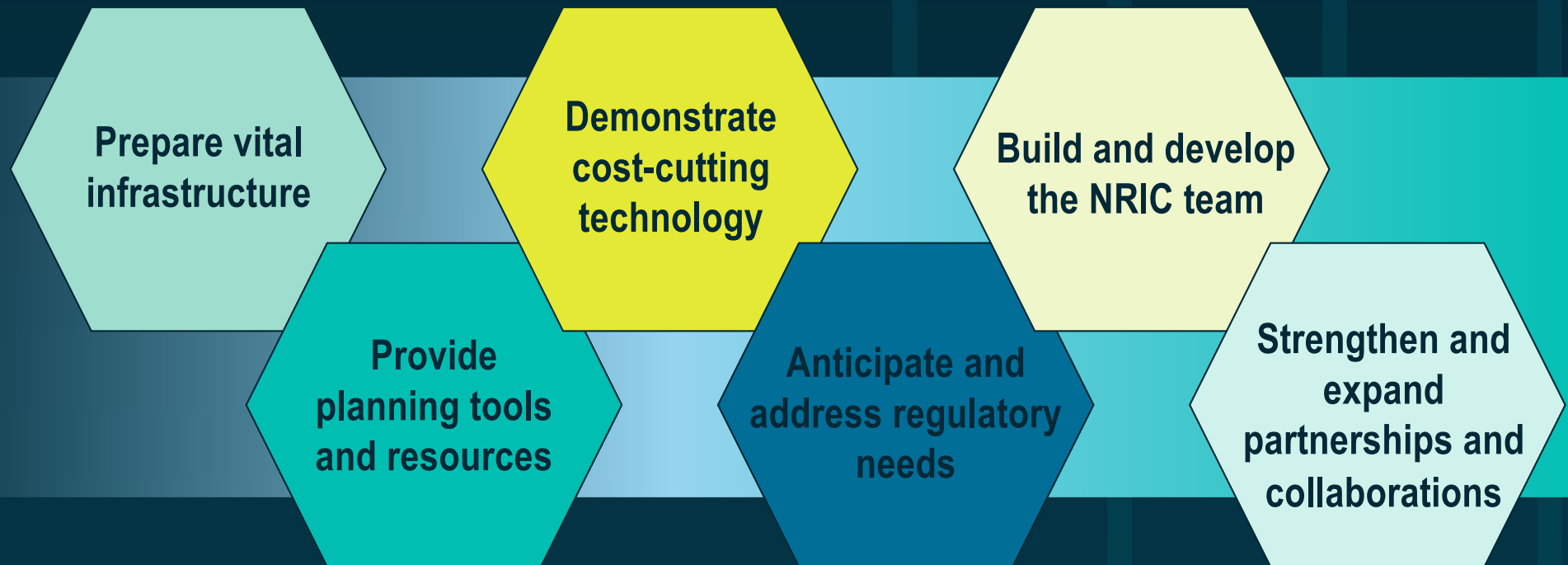
**Demonstration  
Test Bed under  
development**

**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?**