



Demonstration Platforms & Test Beds

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NIA Mission & Modes of Operation

The NIA leads advanced nuclear energy innovation.

- *We assemble companies, investors, experts, and stakeholders to advance nuclear energy innovation and enable innovative reactor commercialization through favorable energy policy and funding.*
- *We research, develop, and advocate policies that enable the efficient licensing and timely early-stage demonstration of advanced reactor technologies.*

Board of Directors

- **Armond Cohen**, Clean Air Task Force
- **Christopher Mowry**, Director, ARC Nuclear
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- Jane Hotchkiss, Energy for the Common Good
- Eric Ingersoll, Energy Options Network
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- **Everett Redmond, Nuclear Energy Institute**
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- **Kirk Sorensen, Flibe Energy**
- Elina Teplinsky, Pillsbury Winthrop Shaw Pittman
- **Sam Thernstrom, Energy Innovation Reform Project**
- Third Way
- Ed Wallace, GNBC Associates
- **Kevan Weaver, TerraPower**
- Aditi Verma, Massachusetts Institute of Technology

People in bold have been at the summit



NIA Strategic Priorities

- **Top priorities:**
 - A staged, and ultimately more technology-neutral licensing process based upon risk-informed principles.
 - A test bed & demonstration platform where nuclear innovators in the private sector can demonstrate advanced technologies.
- **Next tier priorities:**
 - Cooperation to provide for international commercial testing, demonstration, and deployment of advanced technologies.
 - Financial support for early stage technology development and early commercial deployment.

Why these top two priorities?

- There is substantial private capital interested in advanced nuclear energy (\$1.6 Billion invested so far), but more investment is needed to bring it to market.
- But NIA's advisory committee was unanimous that this capital will not be substantially grown until there is a clear, predictable and affordable path to demonstration and licensing.

Activities to date

- Advanced Reactor Licensing Initiative
- Test Bed & Innovation Center Initiative
- Outreach to DOE, NRC, and lawmakers
- NIA Fundraising and Organization

Test Bed & Innovation Center Initiative

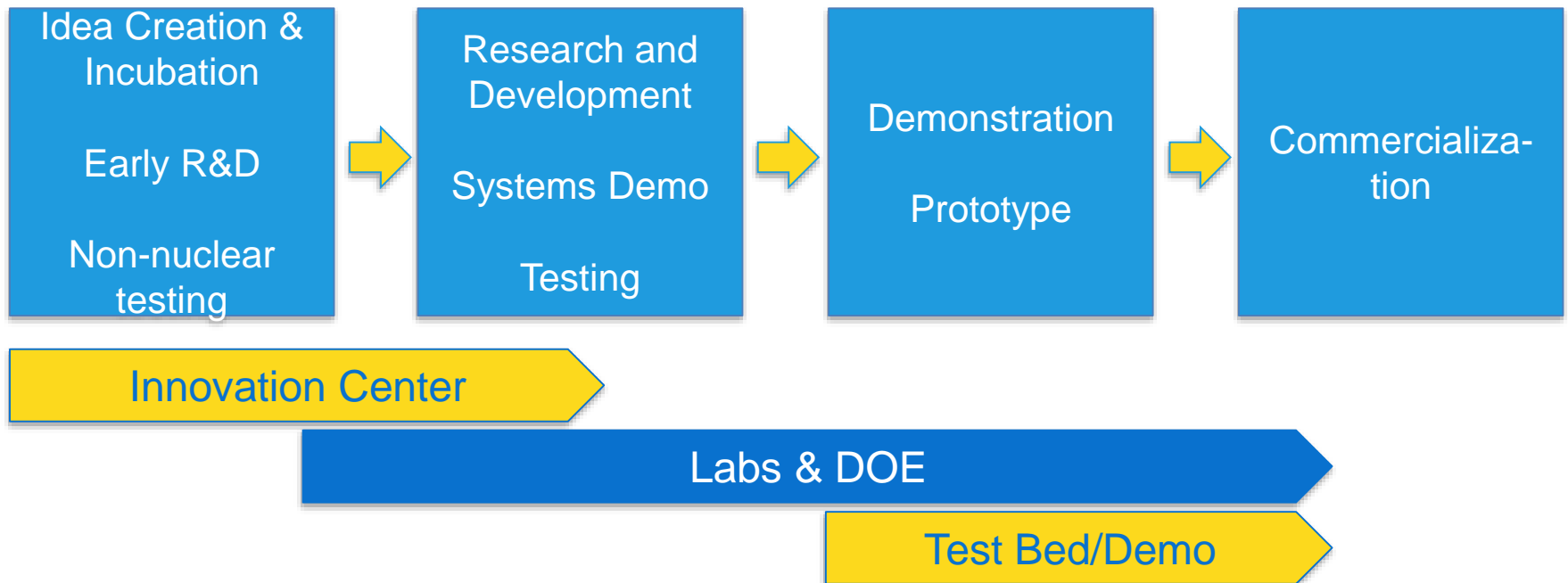
January 2016



Goals

- An incubator to accelerate current efforts and increase the number and diversity of efforts
- A test bed & demonstration platform where nuclear innovators in the private sector can partner with labs and DOE to demonstrate advanced technologies

Innovation Center and Test Bed Roles



Test Bed & Demonstration Platform Purpose

- Provide a place for advanced nuclear companies to prototype/demonstrate their designs
- Provide facilities for materials testing, fuel qualification, and other critical R&D

What Would a Test Bed & Demonstration Platform Provide?

- Much covered yesterday in DOE slides (irradiation, PIE, reconfigurable zero-power reactors, other fabrication and testing, well-characterized site, safeguards & security, load connections, civil engineering, utilities)
- Other items not mentioned yesterday:
 - Fuel Fabrication (and entire fuel cycle support)
 - Containment Structure/seismic isolation
 - Personnel: machinists, technicians, health physicists
- Other considerations
 - Various locations – not just Idaho
 - Liability – may be clarified soon
 - IP
 - Contracting arrangements
 - Licensing, NRC participation
 - Qualification process (but not necessarily down-selection)

Next Steps

- Organizing stakeholders to provide ongoing input to the process
- Development of necessary specifications for design and funding
- Advocating for funding and policy support

Thank you

BACKUP SLIDES

Innovation Center

Innovation Center Purpose

- An incubator for nuclear energy startup companies and supporting organizations to:
 - Foster collaboration
 - Provide networking opportunities with investors and strategic partners
 - Maximize efficient sharing of resources
 - Accelerate progress
 - Increase the number & diversity of efforts

What would an Innovation Center Provide? (1 of 2)

- Physical Resources
 - Shared office space & presentation space
 - Computing resources
- Partnerships
 - With nearby Universities for some experimental work and idea creation
 - With national labs for additional experimental and expert resources
 - With international innovation centers
- Link to regulatory experts & NRC

What would an Innovation Center Provide? (2 of 2)

- Training & Mentoring
- Networking with:
 - Investors
 - Strategic Partners, future customers
 - DOE, government, other potential supporters
 - International innovation centers like InnovateUK, Dalton Nuclear Institute, Innovation Saskatchewan, etc.

NIA Activities to Date

- Interviews of entrepreneurs, investors, existing incubators, academics; NIA working group session.
- Discussions with INL and others about the link between an Innovation Center, the GAIN initiative, and the later stages of the innovation process.