Economic Outlook and Revenue Assessment Committee

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www.inl.gov

Idaho National Laboratory

INL's Position – Nationally

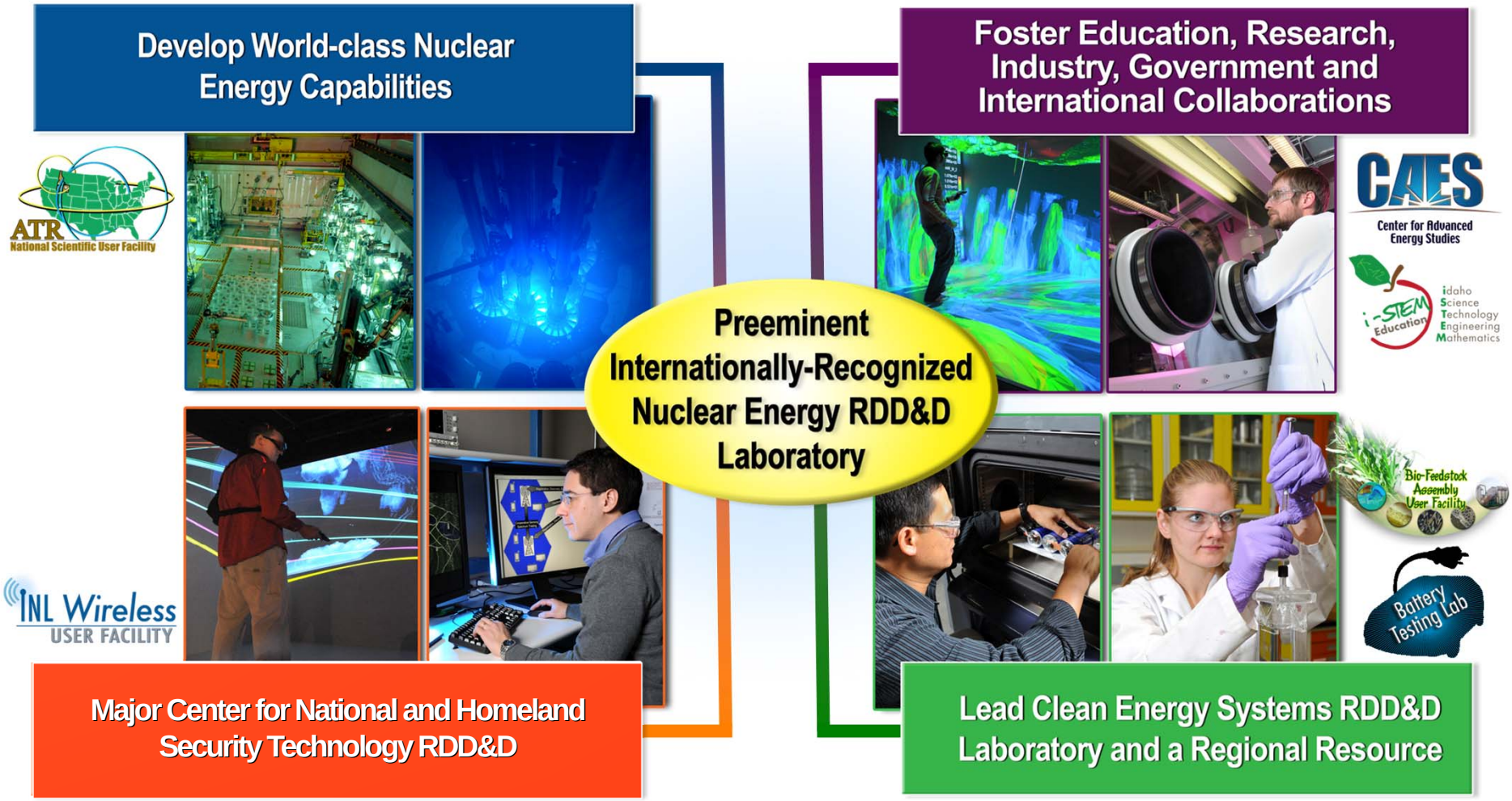
- **One of 10 large DOE multi-program labs**
- **DOE's lead lab for nuclear energy**

National Labs are "Capability Machines"

They do what Universities and Industry Can't, Won't or Shouldn't do

Competition between the Labs is part of our DOE National Laboratory System

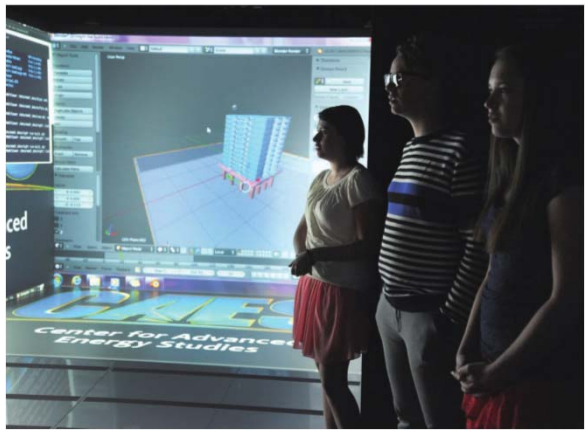
INL Today – We are The National Nuclear Laboratory



Research – Development – **Demonstration** – Deployment

Center for Advanced Energy Studies (CAES): An Idaho Success

- **Partnership between the University of Idaho, Idaho State University, Boise State University, and INL**
- **Growing Research Business & Talent**
  - $4.5 M in new R&D programs in FY13; $57 M competitively won since 2008
  - 421 students enrolled in nuclear-related degree programs at CAES partner universities
  - CAES Energy Scholars inaugural program: Competitive internships for 10 of Idaho's best and brightest college students
- **Continuing Our Legacy of Research Excellence**
  - ISU researchers successfully grew first single crystal, pure uranium oxide
  - INL and BSU researchers achieve breakthrough in understanding silver fission product migration in advanced nuclear fuels
  - UI / CAES professor Robert Hiromoto selected as Fulbright Scholar (to study in Ukraine)
- **CAES 2.0 - expand impact in talent pipeline; larger, more sustainable programs rather than projects; and strong industry touch**



The Idaho National Laboratory Site

We Maintain –

- 890 square miles
- 111 miles of electrical transmission and distribution lines
- 579 buildings
- 177 miles of paved roads
- 14 miles of railroad lines
- 3 reactors
- 2 spent fuel pools
- Mass transit system
- Security
- Museum
- "Landfills"
- 300 metric tons of used fuel
- Educational and research partnerships – CAES

Idaho National Laboratory

3,496 Employees

FY-2013 Business Volume
$840M

CH2M•WG IDAHO, LLC

Idaho Cleanup Project

1,046 Employees
FY-2012 Business Volume
$255M

Idaho Treatment Group
AMWTP

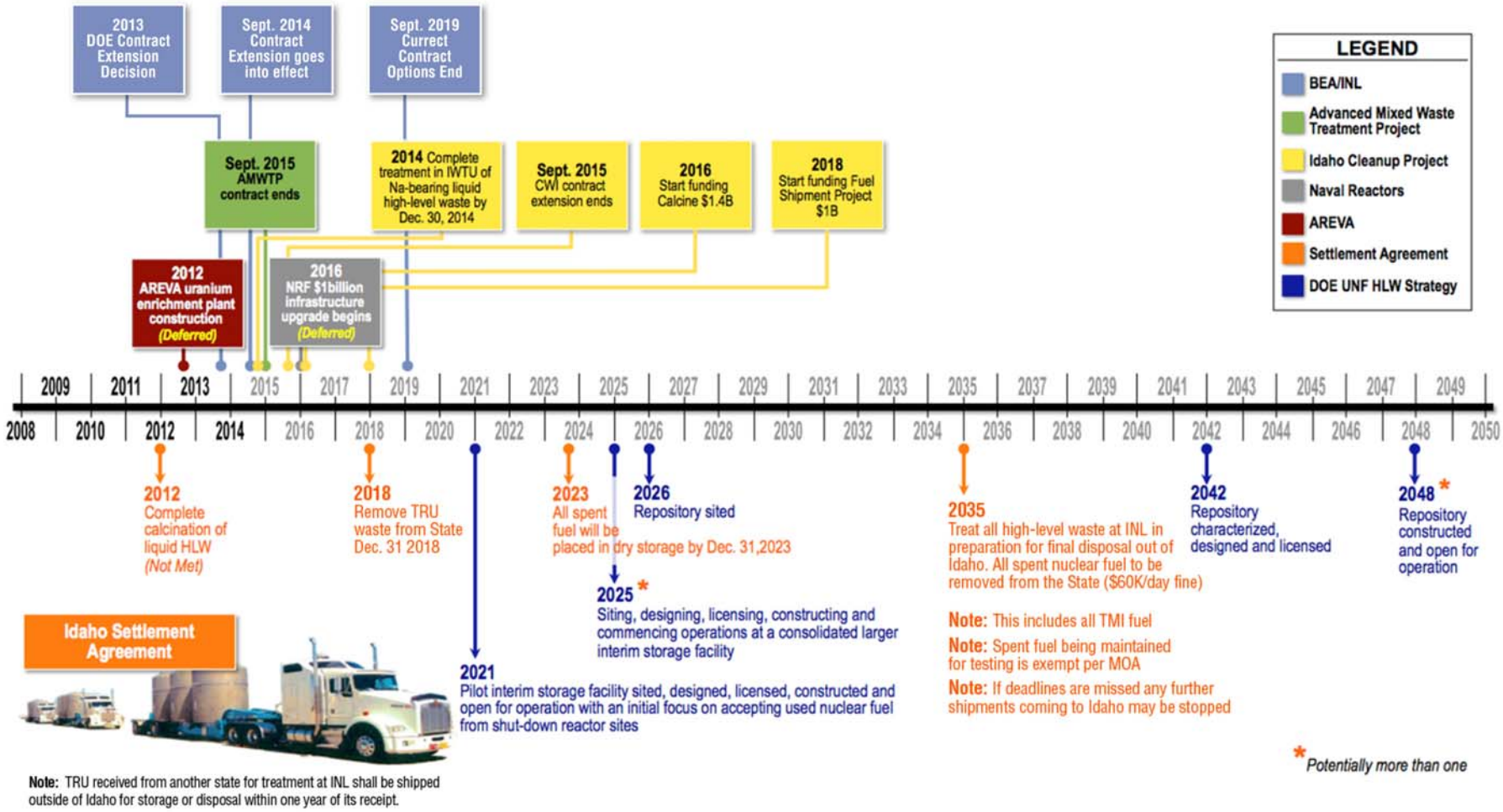
620 Employees
FY-2012 Business Volume
$112M

Naval Reactors Facility

1400 Employees
FY-2012 Business Volume
$230M

…the National Nuclear Laboratory

EM to NE Transfer and Site "Unification" Will Be Important



Note: TRU received from another state for treatment at INL shall be shipped outside of Idaho for storage or disposal within one year of its receipt.

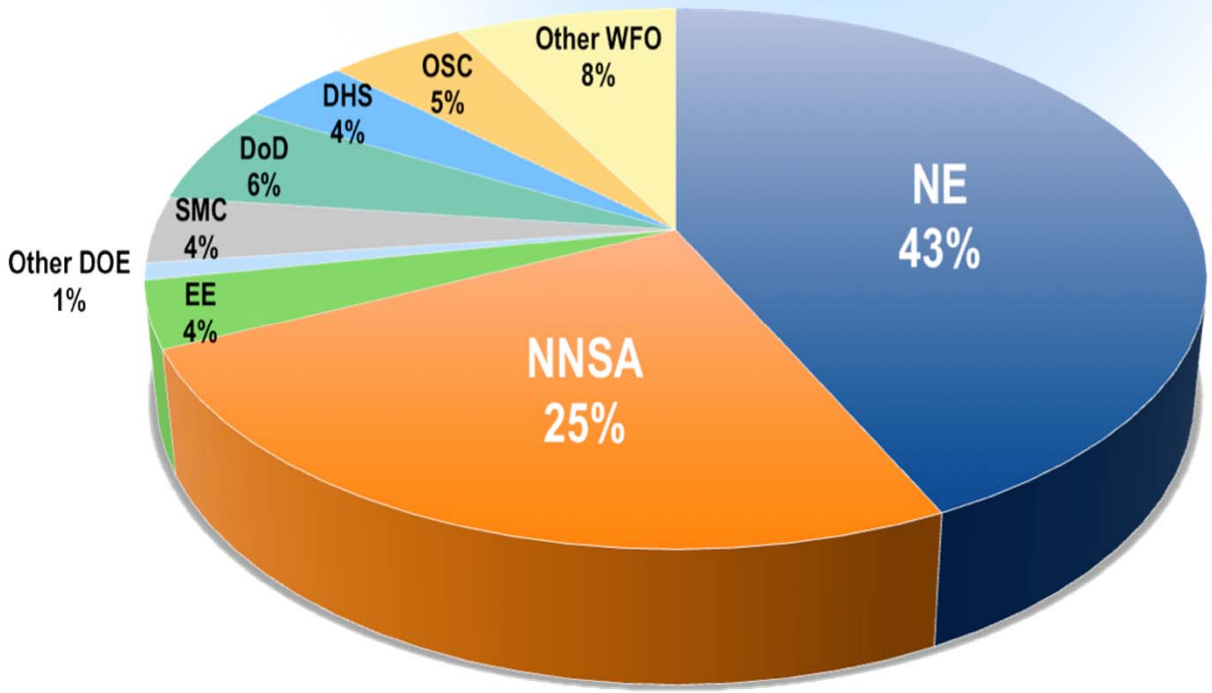
INL Impacts on the State of Idaho-2010 Study

- **Economic (2010 numbers)-we are smaller now**
  - 2nd Largest Employer in 2010
  - 24,000 jobs (8000 direct and 16,000 indirect)
  - 3.5% of Idaho employment
  - Adds $2B to personal income
- **Fiscal**
  - 6% of State tax revenues
  - $17M in employee property taxes
  - $135M in income, sales and other taxes
- **Social**
  - High quality jobs and a stable, diverse, well-educated work force
  - Significant contribution to Idaho primary and secondary education, technical colleges, colleges and universities
  - Charitable contributions – over $550,000 to the United Way in 2012
  - 241,000 hours of Community Service

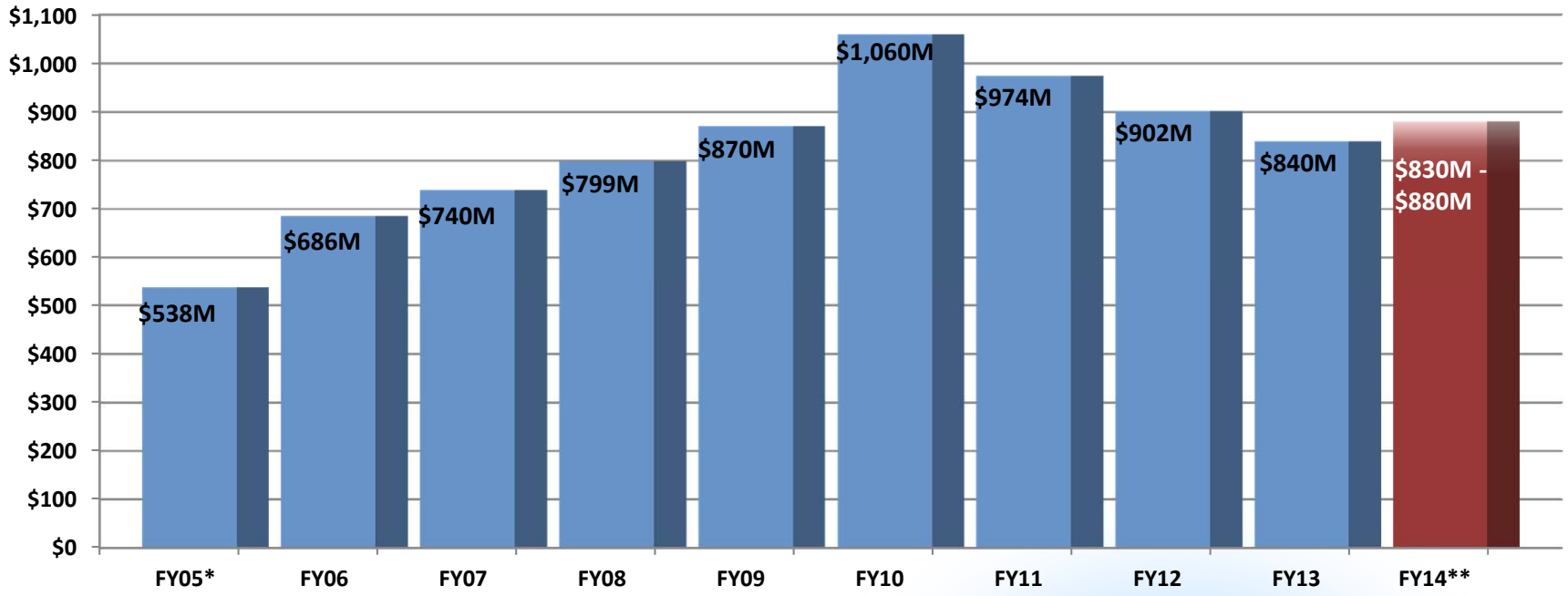
INL Funding

FY-2013 Funding Sources – $840M

- ***73% from the Department of Energy***
- ***19% from other federal agencies***
- ***8% from industry***



INL Funding



** 8 Months*
*** Projected Amounts*

Year	Percent Change in Business
FY13-FY14	0%
FY14-FY15	0%

Year	Headcount
FY11	4,250
FY12	3,930
FY13	3,496
Reduction Since FY11	- 754

INL Funding – The Bottom Line

- **INL needs to be a ~$1.2B laboratory to have sufficient investment funds to maintain the facilities AND provide advanced technology**
- **INL has steadily increased the amount of work we perform for industry but this work does not offset the decreases from the Federal budget**
- **INL physical and intellectual R&D infrastructures are unsustainable at the current level of funding**
  - An immediate reversal of the decline in NE R&D funding is required.
  - A transition in NE R&D funding from the current funding level of $300M to at least $500M is the minimum to keep the INL from atrophying.
  - A new reactor development program is needed. There are possible government missions that could be large program but need engagement from the State, ideally through the LINE Commission discussions
    - Used Fuel Analysis
    - Trans-shipment

Research is Needed to Advance Our Understanding of the Performance of Modern, Commercial Used Nuclear Fuel in Dry Storage

- **Due to uncertainty in the National used fuel disposition program, used commercial nuclear fuel will be in dry storage longer than anticipated**
- **There is limited knowledge about the performance of modern high-burnup* commercial used nuclear fuel**
- **INL has the capabilities (people, facilities) to perform this important work. If not done here this work could be done somewhere else with significant expenditure of taxpayer dollars to build new facilities**

*Leaving fuel in a reactor longer so that more of the uranium is fissioned gets more energy out of the fuel. U.S. utilities have pursued this increased utilization in the last decades. Such fuels are called "high-burnup" and differ from used fuels that preceded.

Interim dry storage

Shipping/storage cask

U.S. Used Fuel Disposition Program

- **Disposal in Yucca Mountain as a "workable" approach has been called into question**
- **What is certain is that:**
  - Commercial used nuclear fuel is going to be in dry storage longer than anticipated
  - Alternative disposal methods (deep bore holes) or even reprocessing may be considered in the future
  - It is important to define what is known, not known, and what information is needed about the condition and characteristics of commercial used nuclear fuel before it is packaged for final disposition
- **Examining commercial used nuclear fuel before its final packaging to provide that knowledge is "transshipment"**

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