Nuclear Energy: Building a Sustainable Energy Source for the Future in Virginia

Tom Williamson

Vice President, Marketing

AREVA Inc.

October 7, 2009

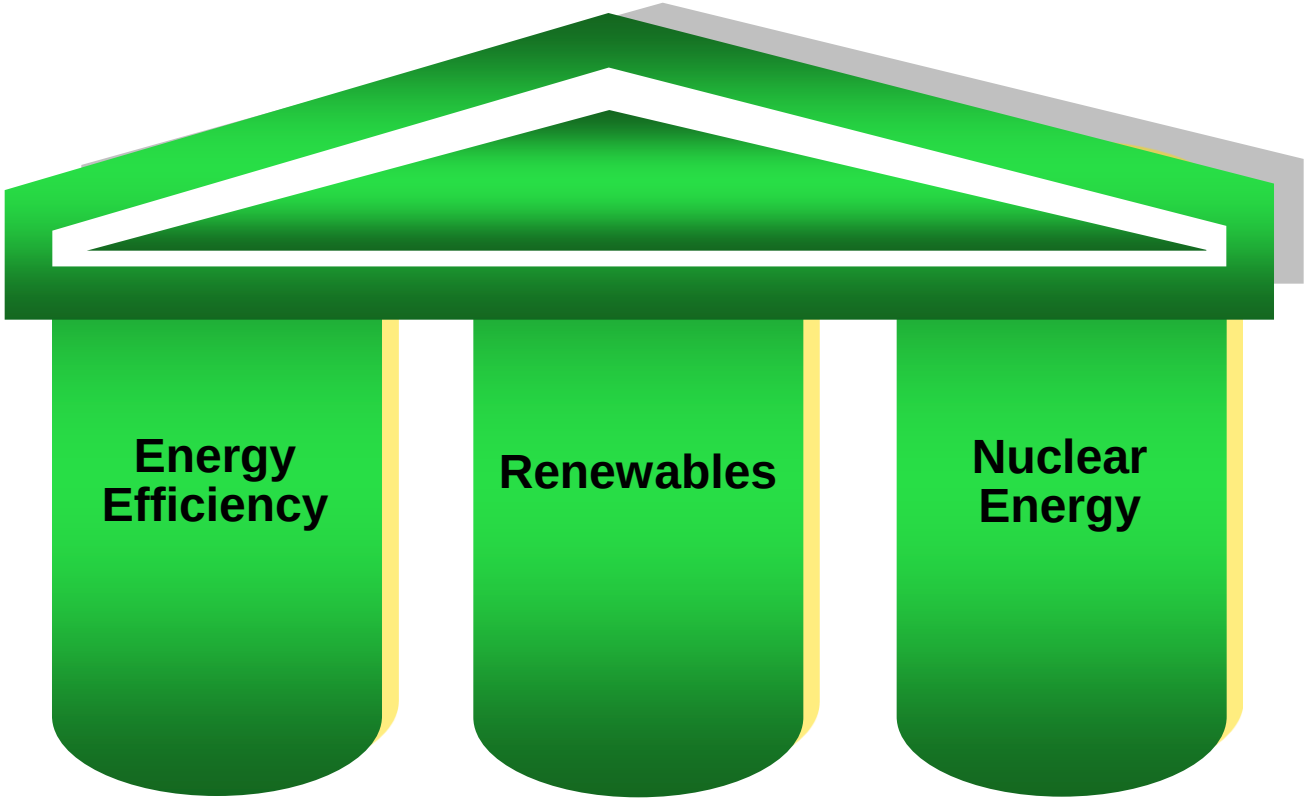
AREVA

Agenda

- AREVA Overview
- Nuclear Renaissance
  - AREVA Scenario
  - AREVA Presence in Market
- AREVA in Virginia
  - Infrastructure Investments
  - Human Resource Investments
- Conclusion
  - Nuclear energy is good for Virginia

AREVA

Three Pillars to Address Climate Change… None Sufficient by Itself

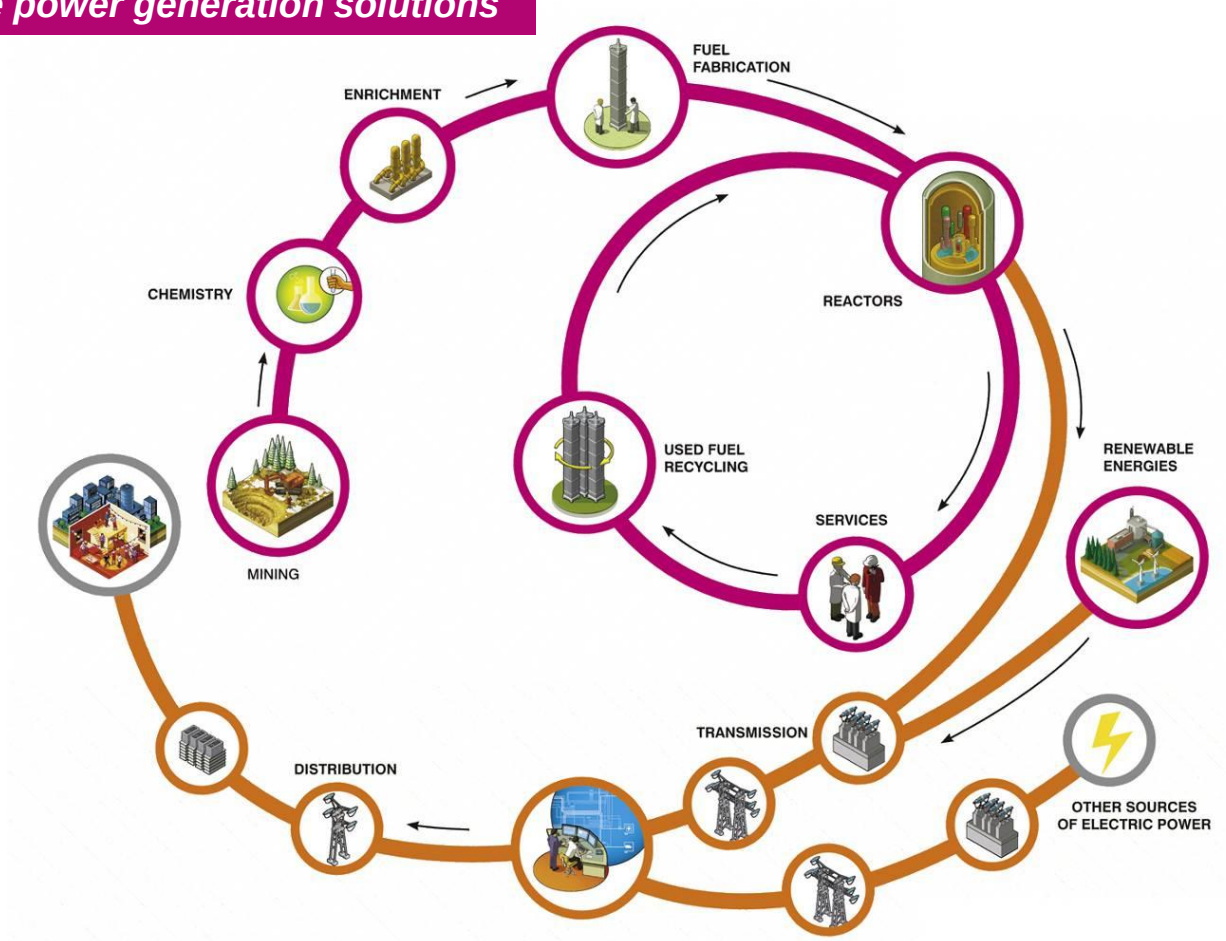


Nuclear – already a major contributor to CO_2-free baseload generation

AREVA

AREVA…Carbon-Free Energy is Our Core Business

CO_2- free power generation solutions



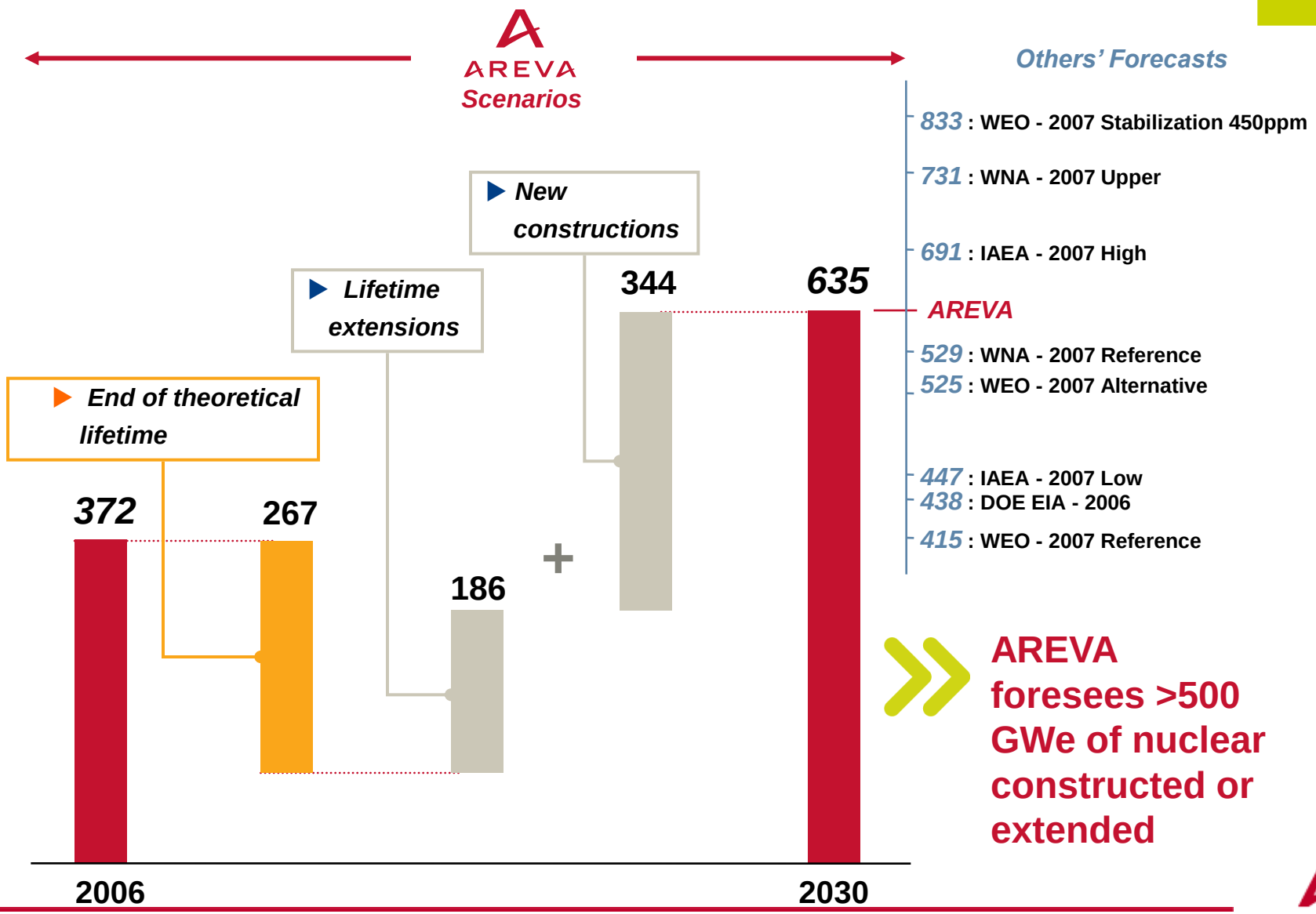
Nuclear

Transmission & Distribution

Solutions for reliable electricity transmission and distribution

AREVA

2030 Scenarios



AREVA foresees >500 GWe of nuclear constructed or extended

AREVA Has Never Stopped Building

Generation I	Generation II		Generation III+
1 PWR 1 unit, France	**79 PWR** **(up-to 1400 MWe)** 54 units, France 10 units, Germany 15 units, export	**7 PWR** **(1300 to 1500 MWe)** 4 units, France 3 units, Germany	**4 PWR under construction** **(1600+ MWe)** 1 unit, Finland 1 unit, France 2 units, China

1950	1970	1988	2010	2040
1 model	6 models	2 models	EPR™ design	

AREVA Present Throughout Global Market

Main nuclear programs announced worldwide

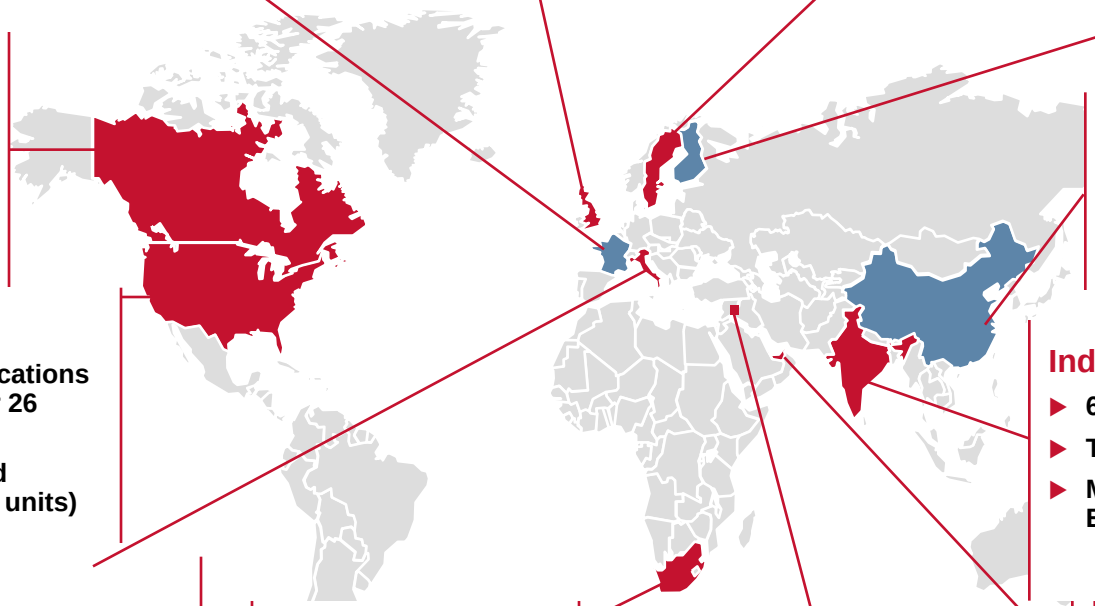
France
- Flamanville 3 (EPR™) under construction
- Penly: 2nd EPR™ by 2017
- Possible 3rd EPR™

UK
- Target* : 10 GWe by 2020
- EPR™ selected by EDF and pre-selected by E.ON for their UK projects

Sweden
- End of 30 years atomic ban

Finland
- Olkiluoto 3 (EPR™) under construction
- 1 new reactor to be built – Call for tender in progress

Canada
- Target* : more than 8 GWe from 2014
- Call for tender in progress



China
- 18 reactors under construction o/w 2 EPR™
- Target* : 70 GWe by 2020

U.S.
- 17 COL** applications in progress for 26 units
- EPR™ selected by 5 utilities (7 units)

India
- 6 reactors under construction
- Target* : 50 GWe by 2050
- MoU with NPCIL for up to 6 EPR™

Italy
- Target* : 8 to 10 new large reactors by 2030
- EDF-Enel JV to build at least 4 EPR™

South Africa
- Target* : 20 GWe by 2025
- Call for tender on hold

Jordan
- Target: 1 Plant by 2015
- Call for tender in progress (4 bidders)

Emirates
- Preparation of the EPR™ project with SUEZ and TOTAL

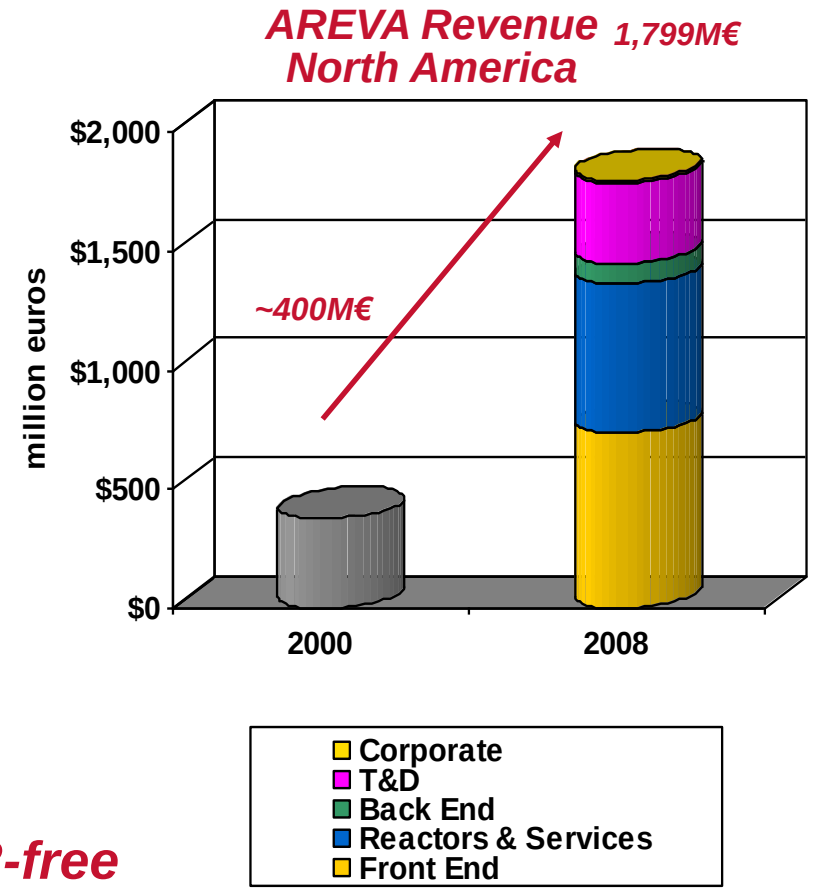
(*) : Nuclear generation capacity announced by countries
(**) : Construction and Operating License

Countries where EPR™ are under construction

Countries where nuclear programs are announced with opportunities for AREVA

AREVA's Footprint in North America

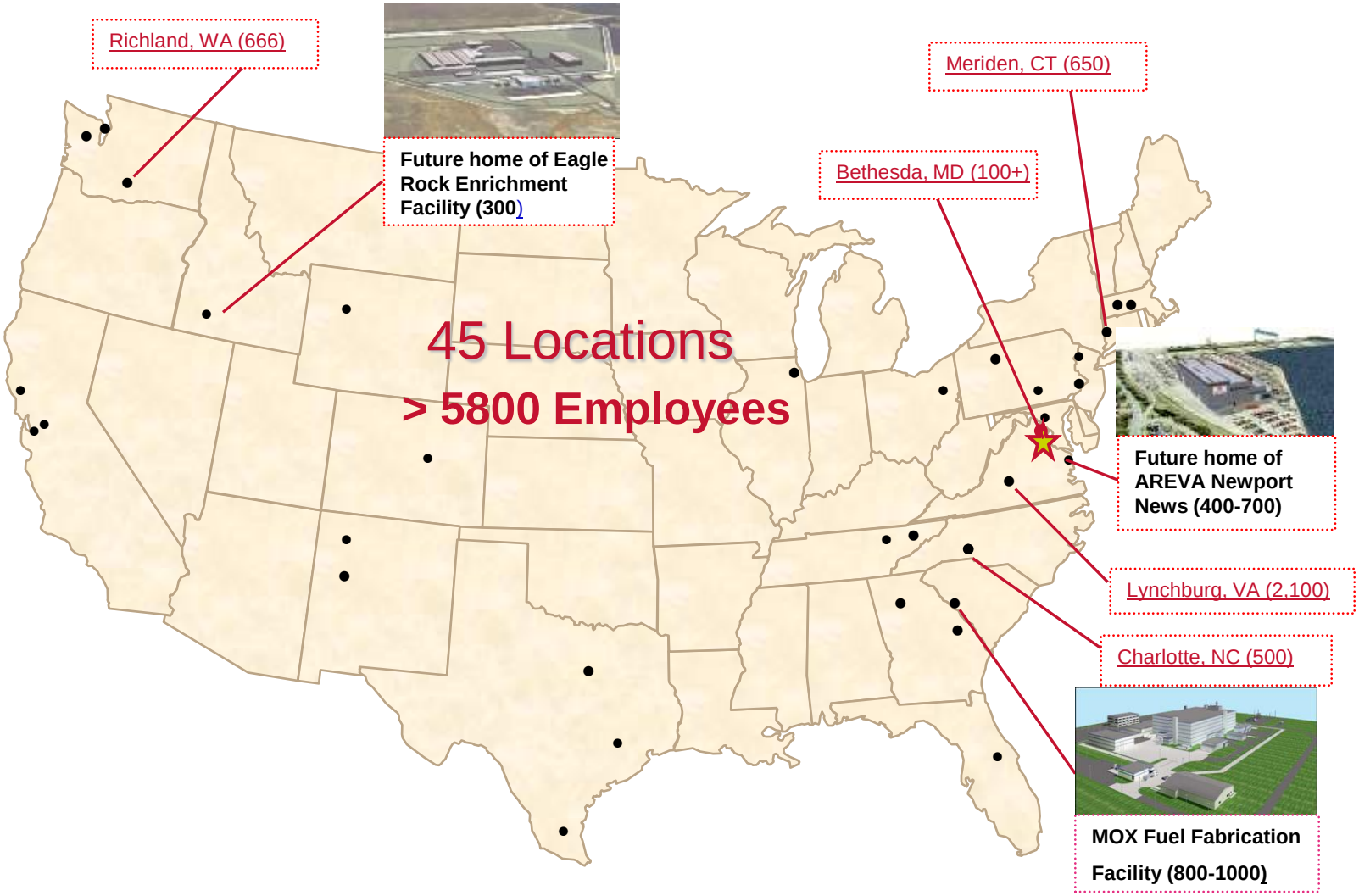
- **No.1 supplier of nuclear energy products/services in North America**
- **North American sales = U.S.$2.5 billion**
  - **15% of AREVA's total revenues**
  - **Near 5-fold growth since 2000**
  - **12% of AREVA products are exported from the U.S. to overseas customers**



To be the world leader in CO2-free energy, we need to be #1 in North America

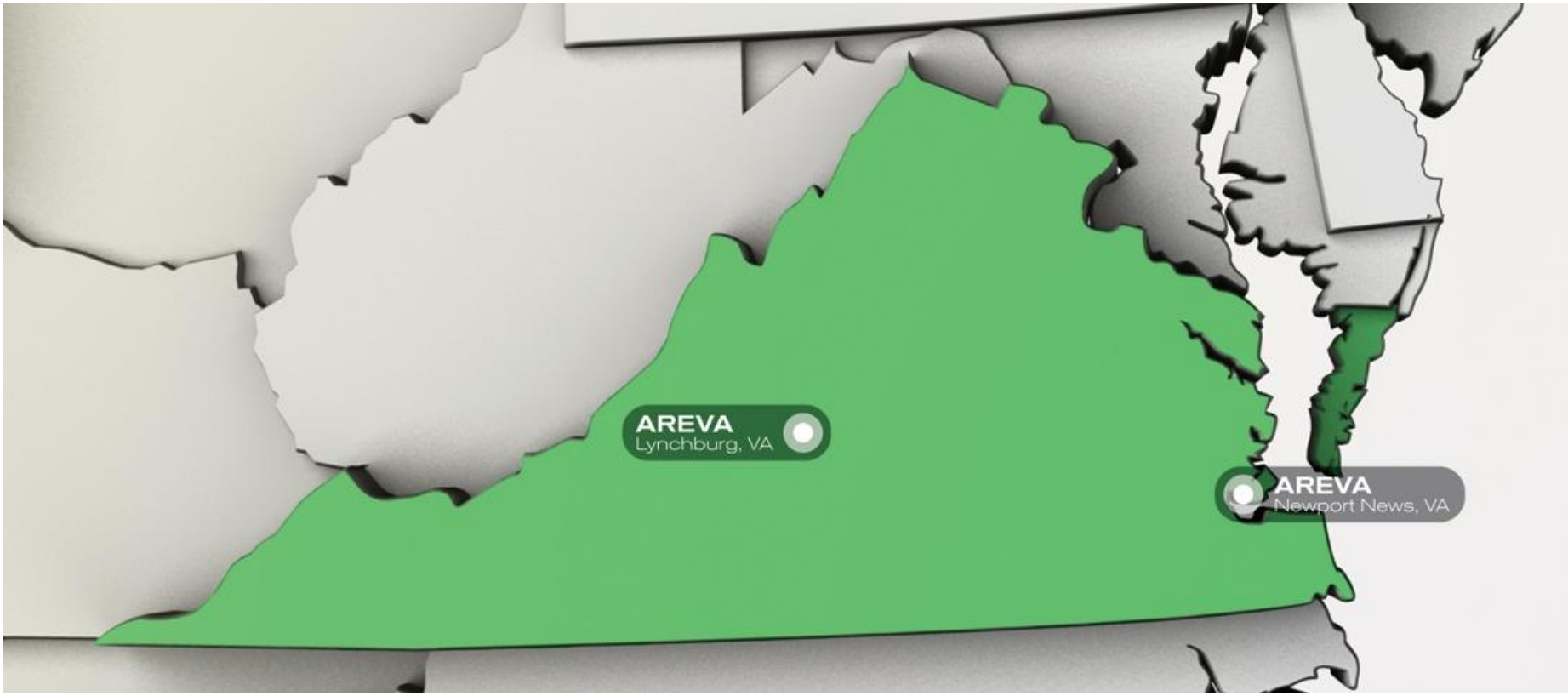
AREVA

AREVA U.S. Locations



AREVA

AREVA Locations in Virginia



Lynchburg Operations

The Technical Training Center

Services

Services

- Design and engineering
- New plant development
- Fuel services

Pump & Motor Facility

Chemistry Lab

Fuel Services

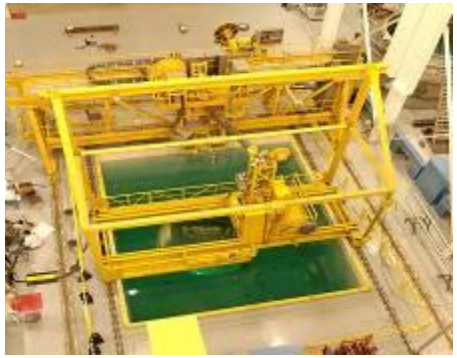
Headquarters

AREVA Newport News

- **Newport News Facility**
  - ***Joint venture with Northrop Grumman and AREVA***
    - **A new U.S.-based manufacturing facility for heavy components for AREVA's EPR™ reactor customers**
    - **Leverages Northrop Grumman Ship Building skilled resources for engineering and field support**
    - **Option to expand to meet global demand for heavy components**
- **$363 million project cost**
- **540 permanent jobs**
- **First delivery of heavy components for U.S. customers in 2015**
- **Status**
  - **Groundbreaking July 22, 2009**
  - **Begin operations 36 months later in 2012**

AREVA Virginia Infrastructure Investments

OFR Upgrade Expansion
$37.7M



MRR Training Facility
$6M

Newport News Nuclear Component Facility – an investment of $363 M

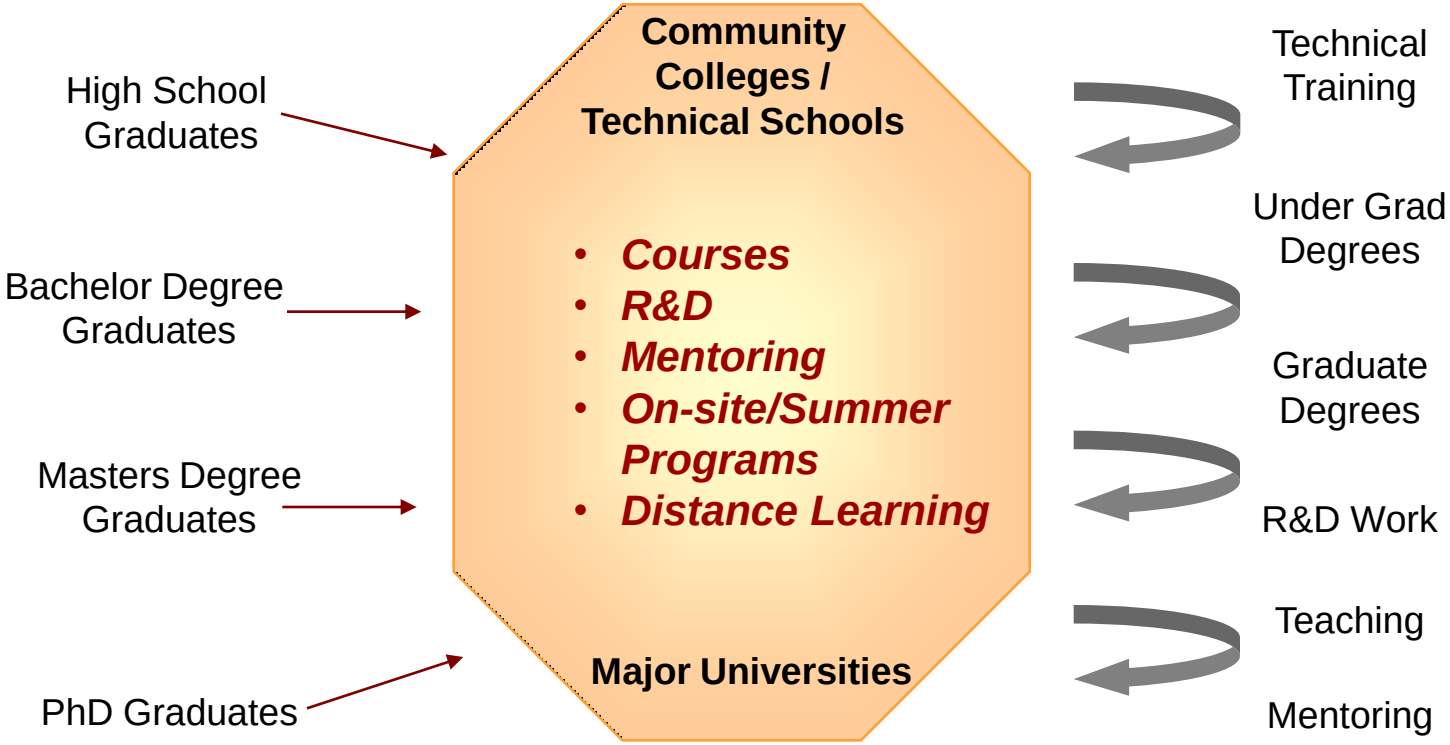
Pump and Motor Facility
$16M

Best Practice Rod Lines
$6M

Chemistry Lab $6.6M

What we're doing to attract new employees: virtual university concept

Provide access to educational opportunities for all levels of employees throughout their careers



New programs and partnerships enable increased recruitment and retention of technical/engineering talent

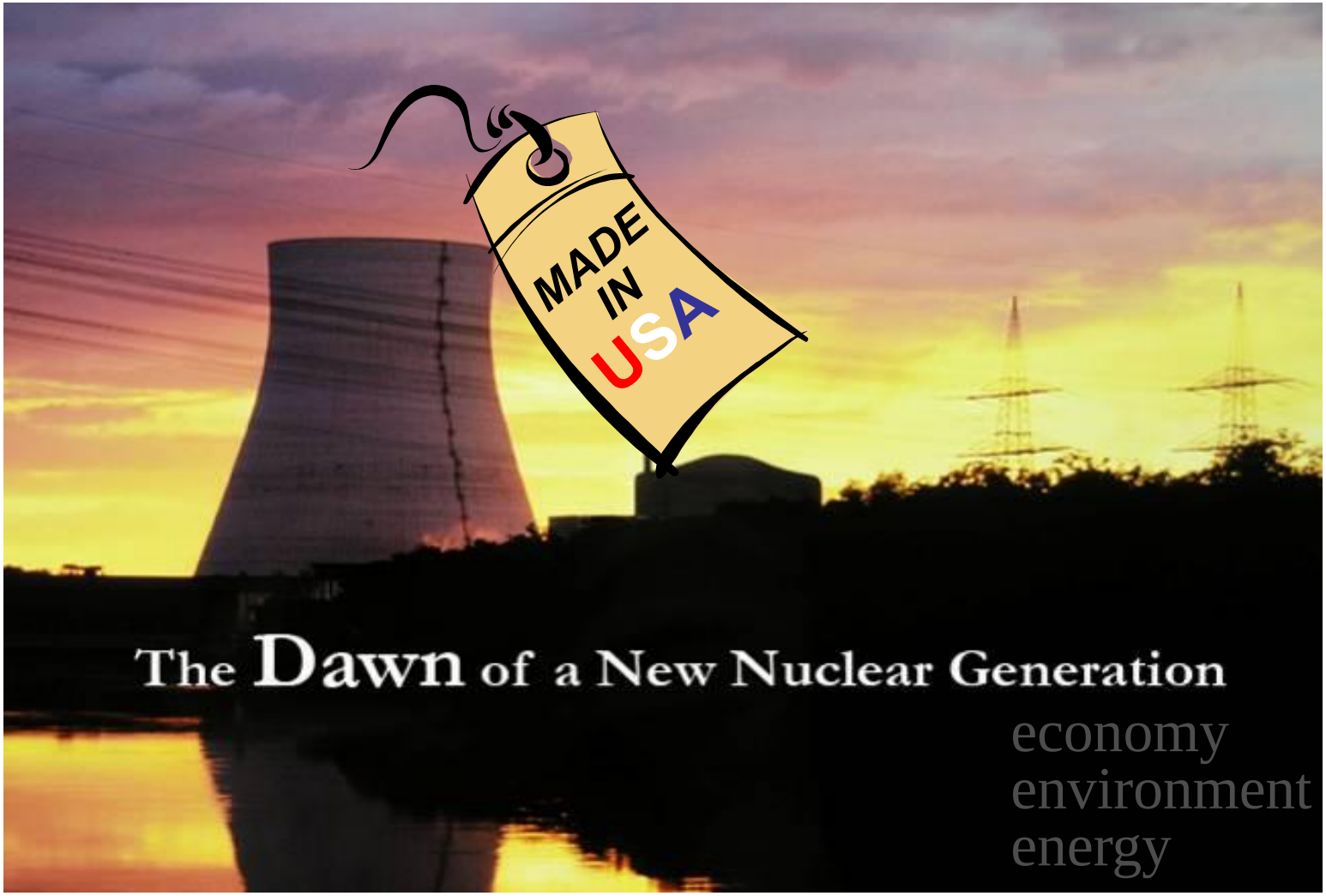
AREVA

Conclusion

- **Nuclear energy consumption to double by 2030**
  - **Global nuclear new build underway and creating jobs**
- **AREVA is first with major investments in the US**
  - **Building an industry to maintain lead position in nuclear renaissance**
  - **Creating US jobs**
- **Nuclear energy is good for Virginia**
  - **AREVA's major US operations are in VA and are growing**
  - **AREVA supports Surry and North Anna which generate 38% of Virginia's electricity and offset**
  - **A new nuclear plant in VA would create 1,400-1,800 jobs during construction of a new plant (peak > 2,400) and 400-700 permanent jobs**

» **AREVA and Virginia uniquely positioned to be major players in the global nuclear renaissance**

We Are Rebuilding an Industry in Virginia



AREVA