Global Strategy

Remain the worldwide leader in CO$_2$-free energy
Agenda

► Global Challenge and Opportunity
► AREVA’s Unique Position and Diversified Offerings
  ◆ Nuclear Energy
  ◆ Solar
  ◆ Biomass
  ◆ Offshore Wind
► Integrated Response – Energy Parks
AREVA’s Footprint in North America

- N. American sales = $2.5 billion
  - 15% of AREVA’s total revenues
  - Near 5-fold growth since 2000
- More than $3 billion of investment in the 5 coming years
- Investing in human capital: 700 new hires in the US every year

>6,000 Employees in 45 locations in U.S.

Plus >1,000 in Canada & Mexico
AREVA in North America

Note: These are specific to US objectives

Our Mission

- Expand clean reliable and affordable sources of energy
- Provide energy sources that are safe, sustainable, and economical
- Create jobs, reduce fossil fuel reliance, and ensure energy security

Our Strategies

- Lead US nuclear renaissance with construction of the US EPR™ reactor
- Close nuclear fuel cycle by providing recycling services as an option
- Establish US nuclear enrichment capabilities
- Lead solar market with concentrated solar power generation and manufacturing
- Build fleet of US biomass plants
- Establish market-share leadership in offshore wind market and localize manufacturing and assembly
Global Challenges
Focus AREVA’s Strategy

▶ Energy Challenges
   ◆ Worldwide increase in energy demand
     • Demand for energy predicted to increase 50% by 2030
     • Demand for electricity to double in the next 20-25 years, due to demands from emerging countries
   ◆ Expected short supply of fossil resources
     • Demand for oil and gas to increase, but supply questionable
     • Increasingly driven by high growth in emerging countries

▶ Climate challenges
   ◆ International efforts to control greenhouse gas emissions
AREVA Uniquely Positioned

- Nuclear and Renewable energy are effective responses to energy and climate challenges

- Focused strategy on providing exclusively CO$_2$-free energy solutions
  - Number one nuclear energy provider in the world
  - Expanding renewable energy portfolio
  - Divesting Transmission and Distribution division

- Establishing domestic industry by making major investments in the US
  - Investing >$3B over next 5 years in the US clean energy infrastructure

- Building relationships with suppliers and educators
  - Supplier Day workshops
  - Virtual university
  - Job training
AREVA’s Nuclear Energy Portfolio
Global Scope

► World Leader In Commercial Nuclear Services Business
  ◆ No. 1 in complete nuclear cycle and reactor construction

► No. 1 Supplier Of Nuclear Energy Products And Services In US
  ◆ 2008 U.S. Sales Revenue $2.5 Billion

► Leader In Major Nuclear Investments In US Capabilities
  ◆ More than $160 million capital improvements and workforce development over past five years in nuclear business
  ◆ $400 million new heavy forging manufacturing and engineering facility in Virginia
  ◆ Planned multibillion dollar investment to build uranium enrichment facility in Idaho to ensure domestic fuel supply
  ◆ $200 million for certification of US EPR™ Reactor

► 12% of AREVA products sold worldwide are exported from the US
EPR IN CONSTRUCTION
EPR IN CONSTRUCTION
Solar Overview

► Mission
Develop and deploy solar energy technology to serve customers’
global electricity and thermal energy needs in a dependable,
market-competitive, environmentally responsible manner

► Locations
- Corporate headquarters – Mountain View, CA
- Manufacturing – Las Vegas, NV and Singleton, NSW, Australia
- Operations – Bakersfield, CA and Singleton, NSW, Australia
- Business development – Mountain View, CA; Phoenix, AZ; and
  Melbourne, Australia

► Name Change
- From Ausra to AREVA Solar
- Announced March 2010
Strategic Goals

- Become a world leader in utility- and booster-grade Concentrated Solar Power generation (CSP) - Acquired technology leader Ausra Solar in early 2010

- Innovate, develop and deliver next generation of solar plants
  - Deliver highest efficiency in cost/KWh, land and water usage
  - Establish grid parity

- Help customers meet increasing RPS requirements with cost-effective solution

- Complement and enrich AREVA portfolio solutions deployment by offering co-generation options

- Differentiate through mature AREVA technology and project expertise
Scalable Steam and Energy Generation

1 Solar Steam Boiler = 7.5 MW Thermal ≈ 2.5 MW Power

**Solar Steam Performance**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Temperature</td>
<td>300°F to 900°F (150°C to 480°C)</td>
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<tr>
<td>Pressure</td>
<td>100 to 1,740 psia (7 to 120 bara)</td>
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<tr>
<td>Annual Energy per 12 acres</td>
<td>88,500 MMBtu (25,950 MWh)</td>
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<tr>
<td>(5 Hectares)</td>
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ADAGE Biomass
AREVA / Duke Energy Joint Venture
Bioenergy in the US
ADAGE a 50/50 JV AREVA – Duke Energy

- Launch at Clinton Global Initiative Sept 2008
- Plan to build 12 new 50 MW standard biopower plants using wood wastes over the next five years (can scale higher if demand)

- Combines the strength of two major energy companies → first U.S. biopower joint venture between major energy companies:
  - AREVA is lead EPC
    - World leader with over 2,500MW installed
  - Duke Energy Generation Services will be the lead operator
    - Currently manage over 6,500MW in the US

- Fully integrated solutions
  - Site selection
  - Design, construction, and operations
  - Power purchase agreements and fuel contracts
Define a standard plant repeatable across US => Reference Plant

- Standard steam and power block
- Fuel handling, civil works and grid connection specific to each site

Design an optimized and competitive product adapted to the US market, environmental friendly and allowing fast permitting

- Maximization of the value for the investors = Value Management
- Emission constraints for minor source compliance and reduced water consumption
- US norms and standards
Above-ground Woody Biomass

Sustainability
- New jobs per plant (direct/indirect)
  Construction 750; Permanent 250
- Carbon neutral
- Keep land as forests

US Forestry Statistics
- 1/3 of US is forested
- 750 million acres
- US DOE and USDA estimate 10,000MW of sustainable supply

M5000 Wind Turbine – Designed for Offshore

- Leading-edge M5000 technology for 5 MW offshore wind turbines
  - Hybrid drive-train solution
  - 1-stage gearbox
  - Lightweight
  - High output
  - Corrosion protection through air filtering
  - Redundancy of subsystems and sensors
  - Condition monitoring of drivetrain and main subsystems
  - Simplified maintenance

- 4 years of operation onshore
- 6 turbines installed in North Sea
AREVA’s Commitment to Domestic Job Creation

- Castings
- Tower
- Blades
- Gearbox

**Direct Job Creation**

<table>
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<tr>
<th>Component</th>
<th>Jobs</th>
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<tr>
<td>Assembly</td>
<td>500</td>
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<tr>
<td>Castings</td>
<td>360</td>
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<tr>
<td>Tower</td>
<td>500</td>
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<tr>
<td>Blades</td>
<td>520</td>
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<tr>
<td>Gearbox</td>
<td>330</td>
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<tr>
<td>Bearings</td>
<td>230</td>
</tr>
<tr>
<td>Converter / Generator</td>
<td>480</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,750</strong></td>
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M5000 Main Data

- Hub height: OS 130 m, 102 m - OS 90 m
- Focus offshore-operation
- Reliability
- Weight
- Design according to TK I, GL-Offshore
- Hybrid solution direct Drive/Conventional
- 1 stage gear box
- Medium speed generator
- Maximum integration of drive train
- High component stiffness
- No wear intensive components
- Low speed levels
- Smallest possible number of bearings
- Redundancy of subsystems and sensors
- Condition monitoring of drive train and main subsystems
- Maintenance rate \(\geq 1\) year
Alpha Ventus Wind Park
Clean Energy Park
Energy Concept for a CO2 Free Future?

A self-sustaining Clean Energy Park is a partnership that creates value for all stakeholders

- Creates thousands of clean energy jobs
- Creates tax base
- Produces safe, cost effective, CO$_2$-free energy

Elements of a Clean Energy Park

- An AREVA U.S. EPR™ Reactor
- Renewable Energy
  - Solar plant
  - Biomass plant

Local job creation, manufacturing, tax revenue
Synergies Between Nuclear and Renewable Energy

Business Synergies
- Established relationship with numerous utilities in many countries
- One-stop-shop for complementary CO2-free energy generation solutions
- AREVA brand as global leader

Technical Know-how and R&D Capacity
- EPC and project management
- Thermal transfer and steam management
- Corrosion, welding and nanotechnologies

Financial guarantees
- AREVA financial strength
- Innovative project financing solutions (co-financing...