INTERNATIONAL TRADE ADMINISTRATION

Smart Grid
Domestic and International Partnerships and Programs

U.S. - Korea Commercial Cooperation Committee

Sub-Committee on Industrial Technology & Standards

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Office of Energy and Environmental Industries

International Trade Administration

U.S. Department of Commerce

What is the Smart Grid?

- The smart grid is a digital communication overlay into the existing electric power network.
- Digital communication and information communication technologies (ICT) are the foundations of the smart grid.
- Utilities, meter manufacturers, appliance companies, telecom industry, renewable energy, and energy storage are among the smart grid industry sectors.
- Smart grid venture capital increased eightfold between 2005 and 2008.

Why Develop a Smart Grid System?

The reasons vary among countries:

1. Aging infrastructure;
2. Non-existent infrastructure;
3. Clean energy - Renewable energy policies;
4. Socio-economic considerations; and
5. Consumer engagement and management of electricity use

Smart Grid:
A United States National Priority

"We'll fund a better, smarter electricity grid and train workers to build it..."
President Barack Obama

"A smart electricity grid will revolutionize the way we use energy..."
Secretary of Commerce Gary Locke

"To meet the energy challenge and create a 21st century energy economy, we need a 21st century electric grid..."
Secretary of Energy Steven Chu

May 2009
The White House Smart Grid CEO Roundtable

Smart Grid Development and Deployment in the U.S.

- American Recovery and Reinvestment Act (ARRA) of 2009, the Stimulus Bill
  - A total of $4.5 billion for Smart Grid Projects, including:
    - $3.4 billion for Smart Grid Investment Grants
    - $615 million for Smart Grid Demonstration Grants
- Matching Funds from Award Recipient
- **www.smartgrid.gov** provides up-to-date information on Smart Grid Stimulus Program and General Information on Smart Grid

President Obama, October 27, 2009, at the DeSoto Next Generation Solar Energy Center, Announcing the Smart Grid Investment Grant Awards

Smart Grid Investment Grants & Demonstration Grants Under ARRA-Stimulus Bill

Smart Grid Investment Grants ($3.4 billion)

- Advanced Metering Infrastructure (31 projects)
- Customer Systems (5 projects)
- Electric Distributions Systems (13 projects)
- Electric Transmission Systems (10 projects)
- Equipment Manufacturing (2 projects)
- Integrated and Crosscutting Systems (39 projects)

Smart Grid Demonstration Grants ($615 million)

- Regional Demonstration Projects (16 projects)
- Energy Storage Demonstration Projects (16 projects)

Smart Grid Workforce Training and Development ($100 million)

- 54 projects; To train 30,000 Americans on smart grid technologies

Estimated Benefits of the Smart Grid System in the U.S.

- 26 million smart meters to be installed by 2013
- 877 grid sensors to be installed by 2013
- 43,000 new jobs
- Four percent reduction in electricity usage
- $20.4 billion in annual savings to U.S. businesses and electricity customers

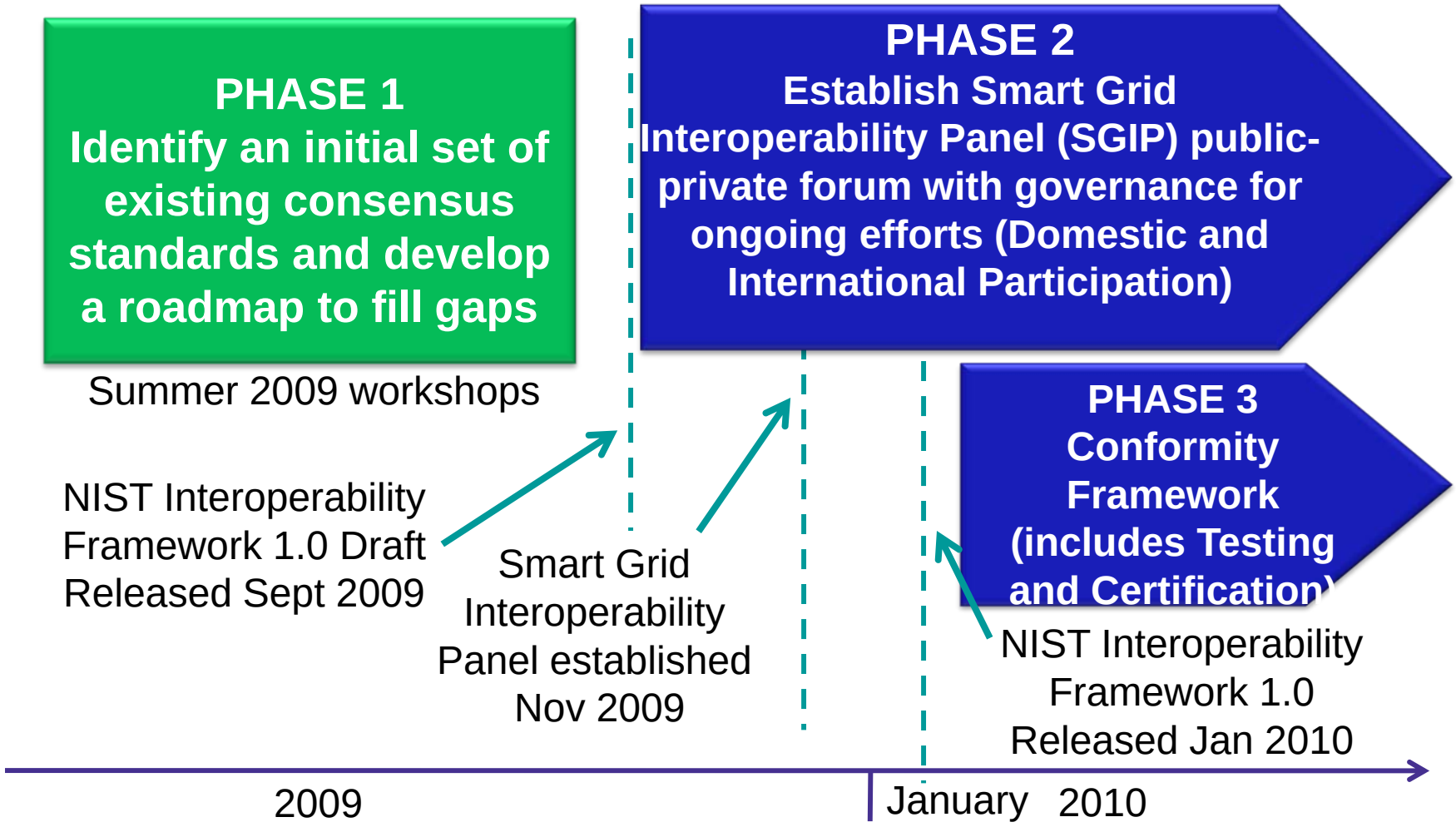
Source: www.whitehouse.gov
Progress Report: The Transformation to a Clean Energy Economy, December 15, 2009

U.S. Department of Commerce Overview

- Bureau of Industry and Security
- Economics and Statistics Administration (Census Bureau)
- Economic Development Administration
- International Trade Administration
- Minority and Business Development Agency
- National Institute of Standards and Technology
- National Oceanic and Atmospheric Administration
- National Technical Information Service
- National Telecommunications and Information Administration
- Patent and Trademark Office

❖ *Denotes DOC Units with Smart Grid/Broadband Programs*

NIST Three Phase Plan for Smart Grid Interoperability



National Institute of Standards and Technology:
Coordination of Interoperability Standards in the United States

NIST coordinates development of interoperability standards by private-sector Standards Developing Organizations

– 2007 U.S. Energy Independence and Security Act, Title VIII, Sec. 1305

International

Global Consortia

Regional/National

… and others

National Telecommunications and Information Administration: Coordination of Broadband Technology Opportunities Program

- NTIA coordinates $4.7 billion of BTOP grants under the American Recovery and Reinvestment Act (ARRA):
  - -To support the deployment of infrastructure in unserved/underserved areas,
  - -To enhance broadband capacity at public computer centers, and
  - -To encourage sustainable adoption of broadband service
- NTIA program compliments USDA-Rural Utilities Service's Broadband Initiatives Program
- Minnesota Entities are Recipients of BTOP Awards
- The initial $183 million in awards announced in December 2009 will expand broadband access in seventeen states
- Additional awards will be announced throughout 2010

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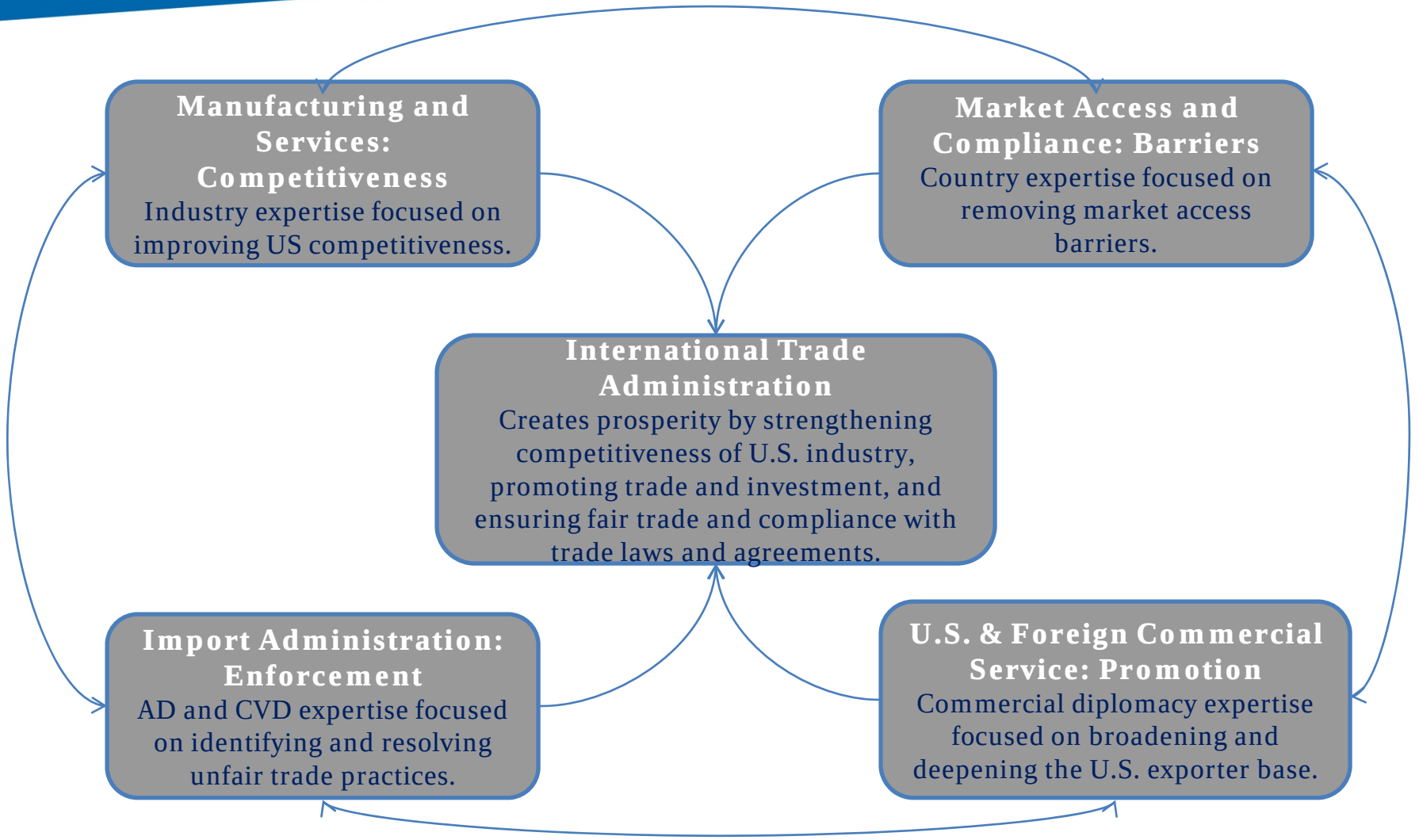

ITA - Working Together to Ensure the Success of U.S. Companies at Home and Around the Globe

International Trade Administration:
Smart Grid Programs

- Bilateral and International Smart Grid Policies and Partnerships
- Bilateral Smart Grid Dialogues
- Smart Grid Conferences
- Exchanges of Best Practices
- Australia, Brazil, Canada, China, European Union, Germany, India, Ireland, Japan, Mexico, South Korea, among others

International Smart Grid Dialogues and Partnerships

- Bilateral and International Energy-Smart Grid Programs:
  - U.S.-EU Energy Council, Energy Policy Working Group
  - U.S.-China Energy Cooperation Program, Smart Grid Working Group
  - U.S.-Canada Clean Energy Dialogue, Electricity Working Group
  - U.S.-Mexico Bilateral on Clean Energy and Climate Change
  - International Smart Grid Action Network (ISGAN)

- Market Development Cooperator Program (MDCP) with National Electrical Manufacturers Association (NEMA):
  - "Development of a Secure, Robust, and Reliable North American Smart Electrical Grid"
  - Announced October 2009

International Smart Grid Policies, Priorities, and Programs

South Korea

Policy Drivers:

- Smart Grid Program, Ministry of Knowledge Economy

Grid Priorities:

- Mitigate CO2 emissions
- Reduce oil imports
- Create new jobs
- Modernize the grid

Pilot Programs:

- Jeju Island, $65 million
- Partnership with State of Illinois, January 2010

Foreign Investment:

- Estimated at $20 billion by 2030

Smart Grid and Clean Energy: Opportunities for U.S Industry

- International opportunities
- Job growth
- Innovative development
- $6 trillion market for energy worldwide

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Topics for Discussion with U.S.-South Korea Industrial Technology and Standards Subcommittee

- Upcoming Smart Grid Conferences:
  - October 18, International Smart Grid Summit at GridWeek, Washington, D.C.

- South Korea's Domestic Smart Grid Drivers, Policies, and Demo Projects

- South Korea-Illinois Smart Grid Partnership

- South Korea Smart Grid Bilateral Dialogues

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- Thank You -

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