



Government of Canada  
Gouvernement du Canada



## Asia Pacific Partnership Canada's Net Zero Energy Initiative



NZEH Workshop  
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Environment Canada

Washington  
September 2009

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### Outline

- Asia-Pacific Partnership
  - Description
  - APP Structure
  - Building & Appliances Task Force
  - Renewable Energy & Distributed Generation Task Force
- Development of the NZEH Project – Understanding the Opportunity
- APP Net Zero Energy Housing Project
- Next Steps

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## **Asia-Pacific Partnership**

- The Asia-Pacific Partnership on Clean Development and Climate is an innovative new effort to accelerate the development and deployment of clean energy technologies.
- Partners will enhance cooperation to meet both our increased energy needs and associated challenges, including those related to air pollution, energy security, and greenhouse gas intensities.
- U.S., Australia, China, India, Japan, and South Korea founded the Partnership in July, 2005. Canada joined in 2007.
- Collectively, APP members represent:
  - 45% of World Population
  - 49% of World GDP (Purchasing Power Parity basis)
  - 50% of World CO2 emissions (fossil fuel consumption & flaring)
  - 64% of World Coal Production and Consumption

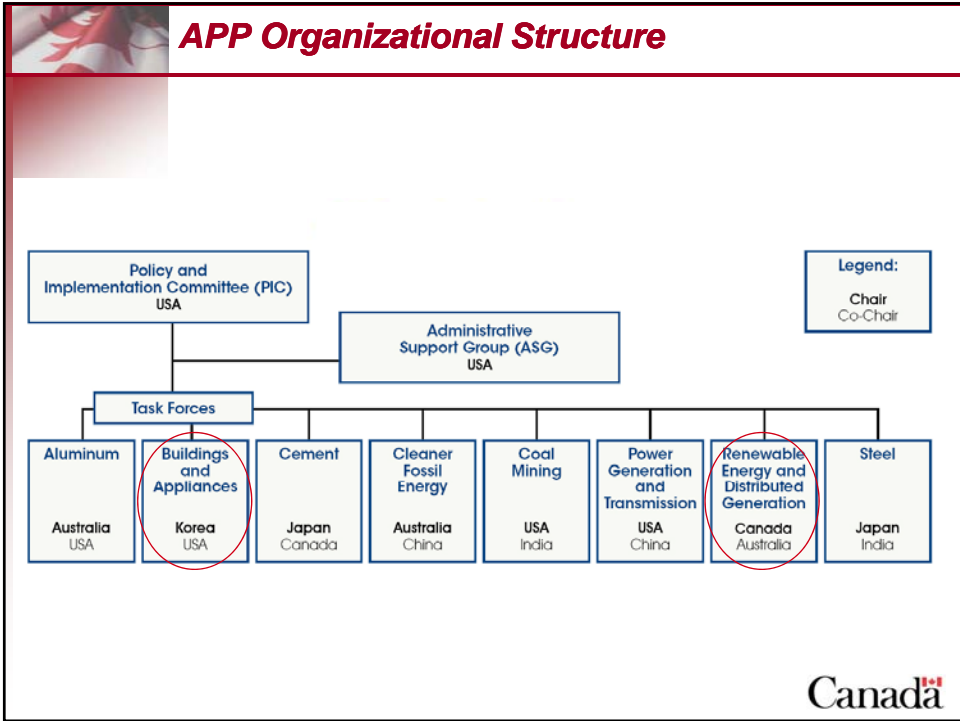
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## **APP Objectives**

- Use a **voluntary** partnership approach, while recognizing differing national circumstances and complementing the UN climate processes, to address development, energy and climate issues
- Build on existing bilateral and multilateral initiatives to **enhance cooperation** to meet increasing energy needs and the associated challenges of air pollution, energy security, and greenhouse gas intensities
- Promote the development, deployment and diffusion of existing and emerging cleaner, more efficient technologies and practices that will achieve practical results

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## Building & Appliances Task Force

- The Task Force will address the main sources of greenhouse gas emissions in residential and commercial buildings
- Task Force Objectives:
  - Use cooperative mechanisms to support the further uptake of energy efficient appliances
  - Promote best practices and demonstrate energy efficiency technologies and building design principles
  - Support the integration of appropriate mechanisms to increase the uptake of energy efficient buildings and appliances
  - Systematically identify and respond to the range of barriers that limit the implementation of energy efficiency practices and technologies

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## ***Renewable Energy & Distributed Generation***

Task Force Objectives:

- Facilitate the demonstration and deployment of RE&DG technologies in Partnership countries.
- Identify country development needs and the opportunities to deploy RE&DG technologies, systems and practices, and the enabling environments needed to support wide-spread deployment, including in rural, remote and peri-urban applications.
- Enumerate financial and engineering benefits of distributed energy systems that contribute to the economic development and climate goals of the Partnership.
- Promote collaboration on research, development and implementation of RE technologies including supporting measures such as renewable resource identification, wind forecasting and energy storage technologies.
- Support cooperative projects to deploy RE&DG technologies to support rural and peri-urban economic development and poverty alleviation.
- Identify potential projects to assess the applicability of RE&DG to partners specific requirements.


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## ***Net Zero Energy***



### ***An opportunity for the BATF?***

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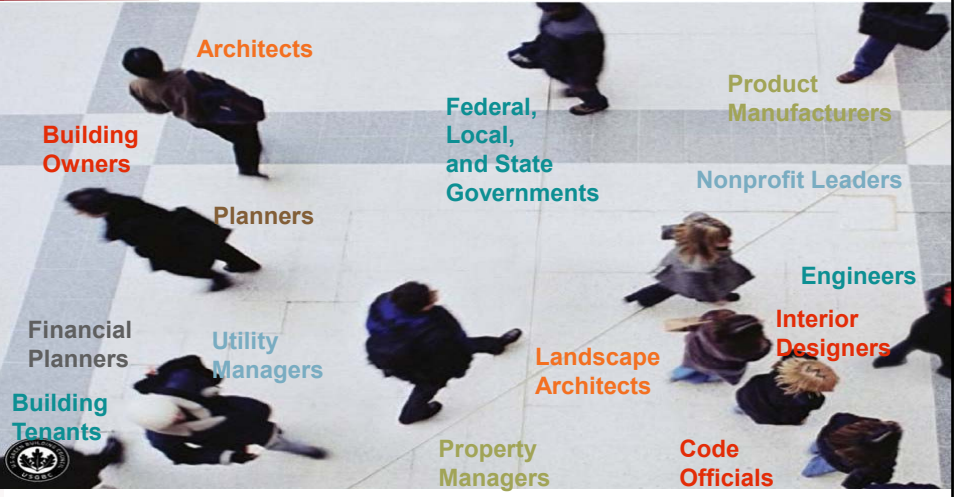


## Leverage from Existing Initiatives

- Canada's Net-Zero Energy Home Coalition**
  - All new home construction meeting a Net-Zero Energy Home Standard by 2030
- Canada Green Building Council**
  - Zero impact from buildings and communities by 2030
- 2030 Challenge**
  - Carbon Neutral by 2030
- US Dept. of Energy – Building Technologies Program**
  - Create technologies and design approaches that lead to marketable zero energy homes by 2020 and zero energy commercial buildings by 2025.
- City of Melbourne: Zero Net Emissions by 2020 Strategy**
  - Reduce energy use in buildings across Melbourne by 50%, with council reducing its own energy consumption by 30% by 2010.
- World Business Council for Sustainable Development**
  - The Energy Efficiency in Buildings Project is mapping the direction to achieve progress towards zero net energy for buildings

## NZE Engages all Stakeholders



Architects

Product Manufacturers

Building Owners

Federal, Local, and State Governments

Nonprofit Leaders

Planners

Engineers

Financial Planners

Utility Managers


Interior Designers

Building Tenants

Landscape Architects

Property Managers


Code Officials



## Synergies with other Task Forces


Opportunity to engage with Renewable Energy and Distributed Generation Task Force to maximize on-site renewable energy production

- Wind energy
- Hydrogen fuel cells
- Ground source Heat Pump
- Biomass
- Community CHP
- Solar thermal
- Solar PV



Riverdale - Alberta

40% passive solar,  
21% active solar, 11%  
solar PV



Avalon Discovery III - Alberta

Roof-integrated PV tiles,  
passive solar, solar  
collectors

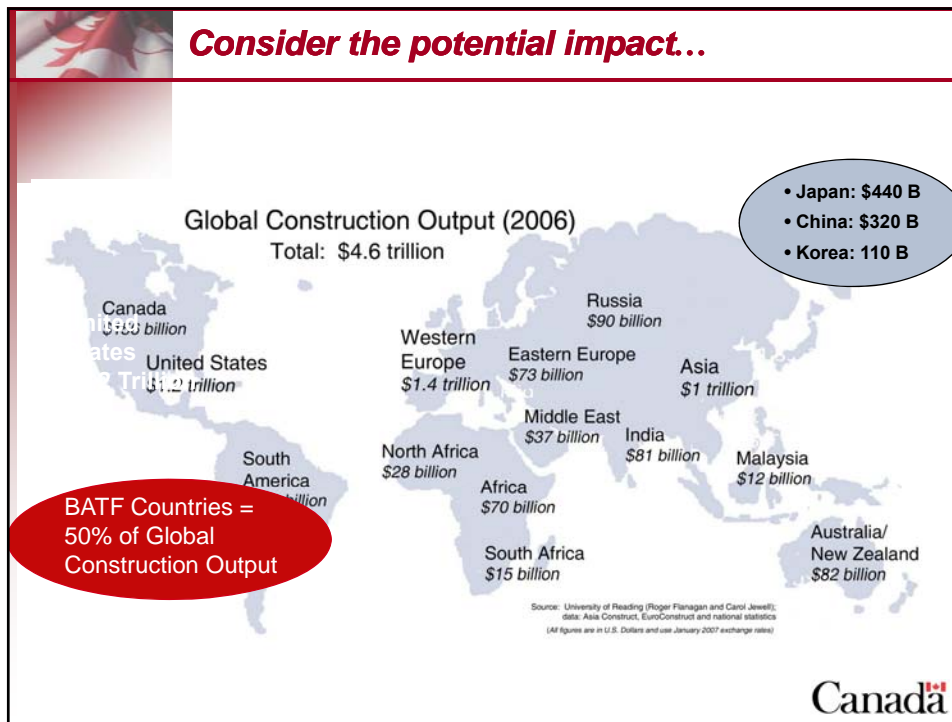
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## Synergies with existing BATF projects

- NZE is a key pillar of a broader sustainable buildings goal
- NZE offers a platform of mutual interest among public and private sector stakeholders
- Cost-effective building performance optimization requires holistic analysis of interdependencies and a whole building design strategy
- Collaboration will accelerate the identification of optimal solutions and improve conditions for innovation

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## Consider the potential impact...



## Path to Canada's NZE Project

- GLOBE 2008 - Canadian Industry Consultation identified NZE as the focus for Canada's participation in the BATF
- In September 2008, Canada successfully hosted a Net Zero Energy Dialogue as part the 6th meeting of the BATF.
- November 2008 – Gordon Shields/NZEH Coalition and Ken Mentzer/NAIMA presented on behalf of BATF industry delegates at the Vancouver PIC meeting
- Canada's NZEH Coalition, Minto, BASF EC, NRCan and DFAIT participated in a workshop in Brisbane in March 2009 to assist the Department of Resources, Energy and Tourism to scope industry's interest in establishing an Australian Net Zero Energy Home (NZEH) Coalition.
- April 2009 – Canada in collaboration with the US, tabled the NZE International Dialogue Project. Project was endorsed by the BATF
- May 2009 – Project endorsed by PIC and given Flagship Status

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## ***NZE International Dialogue Project***

- Lead: Canada
- Co-chair: US Public and private sector
- Establish a collaborative international partnership focused on net zero housing that will:
  - accelerate the identification of optimal solutions
  - Enhance networking, technology transfer and international branding of net zero energy home
  - improve conditions for innovation; and
  - transform the market.
- Project Deliverables
  - Establishment of an industry driven International Dialogue
  - NZE Workshops/Technology transfer
  - Design Charettes for new promising projects
  - Roadmap Report
  - International NZEH Awards (consideration)
- Platform for bi-lateral and multilateral demonstration projects
- Scale will be important – solicit projects that involve clusters




## ***Project Deliverables Timeline***

**Canada – US Collaboration**

- Washington Workshop, Design Charrette, GLOBE

**REEEP Webinars**


- Oct. 29 - Onsite integration of renewable energy and energy efficiency
- Dec. 10 - How stakeholders can contribute and recognize the value of NZEH

**Development of NZEH Roadmap**

**International NZEH Workshops / Design Charrettes**

- Korea, Japan, China

**Demonstration Projects**





## **Next Steps**

- Establish nodal point contacts in each country
- Develop topics and format structure for the Roadmap
- Identify case studies and expertise
- Engage stakeholders from sectors missing from the dialogue
- Canada – US Industry MOU
- Identify International demonstration project opportunities

**DEFINITION ▪ SCALE ▪ MEASUREMENT**

**COMMUNICATION**

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