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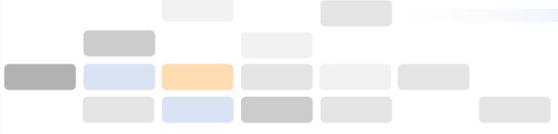
**APEC**  
Asia-Pacific  
Economic Cooperation

Nov 11<sup>th</sup> 2013, Bangkok Thailand  
42<sup>nd</sup> Meeting of APEC-EGEE&C 42  
Queen Sirikit National Convention Centre

## EWG 03-2013A

### Building Code Harmonization in Energy Smart Community Program

**Project Overseer: Prof. XU WEI**  
**Project Contact: Mr ZHANG Shicong**  
**Institute of Building Environment and Energy**  
**China Academy of Building Research**

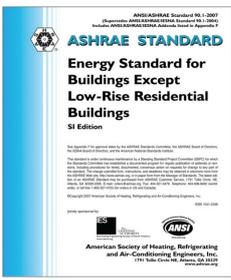





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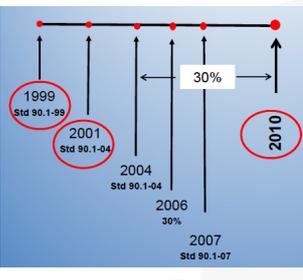
## APEC Program--Building Code Harmonization in Energy Smart Community

### Project Background

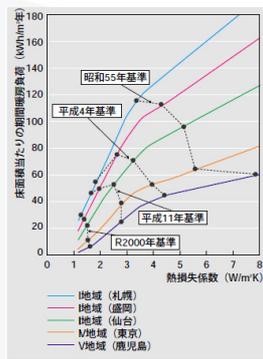


**ASHRAE STANDARD**  
**Energy Standard for Buildings Except Low-Rise Residential Buildings**  
SI Edition

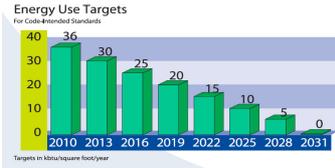
American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.  
119 17th Street, New York, NY 10036



Timeline showing ASHRAE 90.1 standards: 1999 (Std 90.1-99), 2001 (Std 90.1-04), 2004 (Std 90.1-04), 2006 (Std 90.1-04), 2007 (Std 90.1-07), and 2010. A 30% improvement target is indicated between 2004 and 2010.



Line graph showing energy use targets (W/m<sup>2</sup>) for various regions: 昭和三十五年基準 (Shawwa 35th year), 平成四年基準 (Heisei 4th year), 平成十一年基準 (Heisei 11th year), and R2000年基準 (R2000 year). Regions include 札幌 (Sapporo), 福岡 (Fukuoka), 仙台 (Sendai), 東京 (Tokyo), and 鹿児島 (Kagoshima).



**Energy Use Targets**  
For Code-Extended Standards

Year	Target (W/m <sup>2</sup> )
2010	36
2013	30
2016	25
2019	20
2022	15
2025	10
2028	5
2031	0

Tarjens in kWh/m<sup>2</sup>/year

**Mandatory building codes has a huge impact in building energy saving.**

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## APEC Program--Building Code Harmonization in Energy Smart Community

### Project Background


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It might be easier to have a cluster of buildings that achieve nearly zero energy than just one single building when the district has **energy smart production, transfer, storage and utilization.**

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## Previous International Collaboration in APEC



March 6<sup>th</sup> 2013 Miraflores Hilton Hotel Lima, Peru  
 A Joint APEC-ASEAN Workshop  
 Sharing Experiences in the Design and Implementation  
 of Green Building Codes



- Factors for success of Code Development
- lessons learned of Code Implementation
- Approaches to compliance of Code Enforcement
- Monitoring and Review Methodology
- Green Elements vs. Green Code
- Existing approaches of Green Measurement

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APEC Program--Building Code Harmonization in Energy Smart Community  
APEC- EWG – EGEEC - 41 XC



11-12 April 2013  
North Star Continental Grand Hotel  
Beijing, China

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APEC Program--Building Code Harmonization in Energy Smart Community

**Proposing APEC economy: China**

**Co-sponsoring economies: Hong Kong-China, Singapore, Canada,  
Japan ,Thailand, New Zealand, USA.**

**Start date: July 2013**

**Completion date: December 2014**

**Total Budget: 204,400 USD. APEC funding:120,000USD, Self-funding:84,400**

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## APEC Program--Building Code Harmonization in Energy Smart Community

Focus Area:

- Net Zero Energy Definition, technology roadmap and pilot projects among APEC economies.
- Building Energy Codes upgrading Potential in the future.
- Technology Integration in Energy Smart Community.
- Building energy codes harmonization in energy smart community.

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## APEC-Building Code Program Introduction

### APEC Program--Building Code Harmonization in Energy Smart Community

Outcome:

Two information and experience sharing workshops:

1. APEC-Net Zero Energy Building workshop (Oct 2013 Beijing, China)
2. APEC-Smart Energy Community workshop (to be determined, Best be joint with next EGEE meeting in China)

Reports:

1. Experience sharing of Building Energy Codes upgrading among APEC economies
2. Balancing single building and community towards net zero energy
- 3. Building Codes Harmonization in Energy Smart Community**

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APEC Program--Building Code Harmonization in Energy Smart Community



APEC-Net Zero Energy  
 Building Workshop  
 Beijing, China.  
 30-31, Oct, 2013

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APEC Program--Building Code Harmonization in Energy Smart Community

Section 1: Policy & Overview    Section 2: Codes & Standard

- China
- IEA-SHC-Task40
- US
- Canada

- Japan
- Indonesia
- China

Participating economies:

- Chile
- HK-China
- Indonesia
- Malaysia
- Mexico
- Peru
- Thailand

Section 3: Technology Roadmap & Pilot project

- US
- Canada
- Korea
- China

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APEC Program--Building Code Harmonization in Energy Smart Community

Future Work

- APEC-Smart Energy Community workshop (to be determined, Best be joint with next EGEEEC meeting in China)
- Building Codes Harmonization in Energy Smart Community

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**Thank you**

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