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Sustainability in Building Construction (Commercial Buildings) – Efficiency and Conservation Survey

APEC Sub-Committee on Standards and Conformance

APEC Committee on Trade and Investment

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Executive Summary

This report contains the results of a survey that addressed the "greening" of commercial building in the APEC Economies. Organized into three general categories, it addressed Policies, Standards and Rating Systems, and Trade as they relate to and impact *newly erected* environmentally responsible commercial buildings. *The questions did not apply to the retrofitting of existing buildings or to residential buildings of any kind.* The survey had a high rate of return, featuring 17 participating Economies, or 81% of all APEC Economies.

One of the first, and potentially the most significant findings of the survey related to terminology. Terms such as *standard* and *policy* do not yet have Region-wide consensual definitions, but are used interchangeably with the terms *codes and rating systems*. There is also no one Region-wide overarching standard that defines *green building*. Most Economies have addressed a component of green building, *energy efficiency*, in building codes or other national frameworks and some are undergoing review and revision of codes and regulations to include more "green" criteria. At the same time, it is obvious that green building is progressing in APEC Economies, as 15 of 17 Economies reported having voluntary green or energy efficiency building codes in place.

In the section on Standards and Rating Systems, a pattern emerged among the Economies as most reported taking a voluntary approach to codes, standards, and rating systems, using voluntary standards in the construction of green buildings and in building codes. 12 Economies reported the use of voluntary rating systems. In the Section on Trade, 5 Economies reported having technical regulations in place. 4 additional Economies are anticipating or are in the process of preparing them, signalling an increase in technical regulations. Conformity assessment requirements are set out in the technical regulations that are currently in place, but no data was provided that would indicate commonalities or variances. All 5 did report, however, using combinations of conformity assessment procedures. And finally, 10 Economies reported that they accept foreign certifications for green construction goods.

The survey was an exploration into the era of green construction and trade in green construction goods among APEC Economies at a time when it is still developing. As green policies, regulations, codes, and rating systems emerge and existing ones mature, there will be much room for deeper exploration. With that in mind, the report also suggests areas in building codes, standards, rating systems, conformity assessment, and terminology where further study will add to a growing body of information.

Contents

Introduction

This survey is part of a project that is designed to support several sustainability and conservation priorities and initiatives already established within APEC[1]. Much has been done in the field, including such projects as Comparison of Building Energy Codes in APEC Economies, Energy-Saving Doors and Windows, Survey of Policies and Programs, Cool Roofs in APEC Economies, Best Practices and Potential Benefits, and Harmonization of Standards and Labeling for Compact Fluorescent Lightbulbs to Reduce Trade Barriers.

This survey follows these initiatives by focusing on the "greening" of commercial buildings within the APEC Economies. A green building can be defined as one that, through the use of technology, design, and management, is environmentally responsible. Green building involves many technologies: from the selection of a land site to energy efficient materials, indoor air quality, and the conservation of water; it also involves multiple industries.

The survey is an exploration into the era of green construction and trade in green construction goods among APEC Economies at a time when it is still developing. There is much room for deeper exploration, and this report suggests possible areas in which further study might add to a growing body of information.

As it is, however, the information collected in this survey may still lend a measure of transparency to policy makers and developers of codes and standards within the APEC Economies, and with that, the possibility of preventing or reducing the potential for technical barriers to trade.

[11] APEC Leaders, Ministers Responsible for Trade, APEC Economic Leaders, Energy Working Group (EWG), Environmental Goods and Services Information Exchange (EGSIG).

Scope

Organized into three general categories, the survey addressed: A) Policies, B) Standards, Rating Systems, and C) Trade as they relate to and impact newly erected environmentally responsible commercial buildings. It did not address the retrofitting of existing buildings or residential buildings. The survey combined three types of questions: 1) questions that could be answered yes or no, 2) multiple choice questions, and 3) questions that asked respondents to provide specific information, such as names of rating systems, standards bodies, building codes, etc.

Terminology

The terms *energy efficient, energy renewal, energy conservation, green building, and sustainable building* are used to describe buildings that, through the use of technology, design, and management, are *environmentally responsible*; that is, they support the protection and conservation of natural resources. These terms are sometimes used interchangeably. A universal definition and uniform usage of the term "green" have yet to be established within the APEC Economies. For purposes of the survey, therefore, three definitions were offered for three terms *solely* as a means to set forth terms in the context of the survey:

Green Building (From the United States Environmental Protection Agency)

Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient *throughout a building's life-cycle* from siting to design, construction, operation, maintenance, renovation and deconstruction. This

practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as sustainable or high performance building.

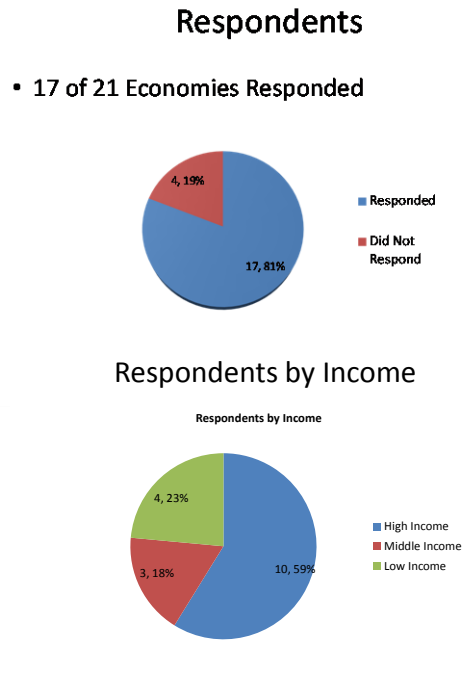
Energy Efficiency (From the World Energy Council)

Energy Efficiency is a component of Green Building. The definition of *energy efficiency improvements* refers to a reduction in the energy used for a given service (heating, lighting, etc.) or level of activity. The reduction in the energy consumption is usually associated with technological changes, but not always since it can also result from better organization and management or improved economic conditions in the sector ("non-technical factors"). A simpler definition offered by the Lawrence Berkeley National Laboratory[2] is the following: Using less energy to provide the same service.

Sustainability is defined by the E2114 ASTM International Standard on Terminology for Sustainability Relative to the Performance of Buildings as follows: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Respondents

The survey had a high rate of return. Seventeen of twenty-one Economies, or 81% of all APEC



[2] Lawrence Berkeley National Laboratory is a U.S. Department of Energy-funded National Laboratory operated by the University of California.

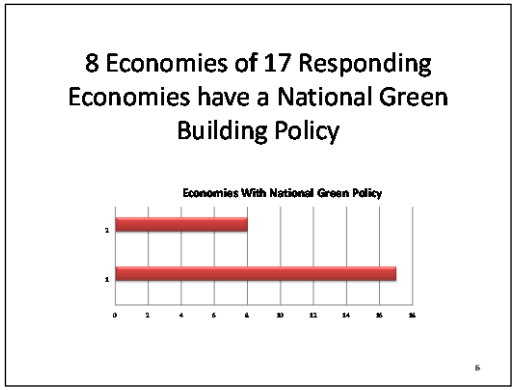
Economies participated. Economies from all income levels participated. 10 were those with high incomes, 3 were middle income Economies, and 4 were low income Economies, indicating *an interest in green building that spread across the economic spectrum*. All but one completed the survey. Economies drew upon the expertise of government agencies, standards developing organizations, and building councils to provide answers that crossed technological, industrial, and regulatory lines. They are listed below.

Table 1. Respondents

Economy	**Contributing Respondents**
Australia	Australia (Department of Innovation, Industry Science and Resources), Building Code of Australia
Brunei Darussalam	Brunei Darussalam Authority for Building Control and Construction Industry (ABCi), Ministry of Development
Canada	Federal Government: Natural Resources Canada, Public Works and Government Services Canada and the National Research Council. Canadian Standards Association, Foreign Affairs and International Trade Canada.
Hong Kong, China	Innovation and Technology Commission, The Government of the Hong Kong Special Administrative Region, Government departments
Indonesia	BSN Standardization
Japan	Ministry of Land, Infrastructure, Transport and Tourism (MLIT)
Malaysia	Energy Commission
Mexico	CEMEX, Secretaria de EconomÃ-a MEXICO,
New Zealand	Energy Efficiency & Conservation Authority (EECA), Energy and Housing Departments
Papua New Guinea	Commerce or Industry Department, PNG NISIT
Peru	Peruvian Ministry of Energy and Mines
The Republic of the Philippines	DTI-CIAP-Philippine Domestic Construction Board, Trade, Commerce or Industry Department
Singapore	Building & Construction Authority
Chinese Taipei	National Economic Policy: Council of Economic Plan Development; Bureau of Standards, Metrology and Inspection, MOEA
Thailand	N/A
The United States	U.S. Environmental Protection Agency, Office of Sustainable Communities
Viet Nam	N/A

Survey: Section A: Policies

Eight (8) Economies reported having a national green building policy. The term "policy" was interpreted by some to mean building codes. To others, "policy" meant regulations. One Economy listed its national green building policy as a Master Plan, one listed it as a Presidential Decree, one as a national energy efficiency strategy, and one as a compendium of design and technique directions for different types of commercial buildings. One Economy listed a "Law Concerning the Rational Use of Energy", and although one Economy replied "Yes" to this question which referred to a national green building policy, it clarified its response by stating that it did not have a national policy, but that there were various green building approaches among provincial and municipal jurisdictions. *There were, therefore, variants in the answers provided. Still, the answers indicate that there are 8 Economies with Economy-wide recognition and installation of green policies or applied principles.*



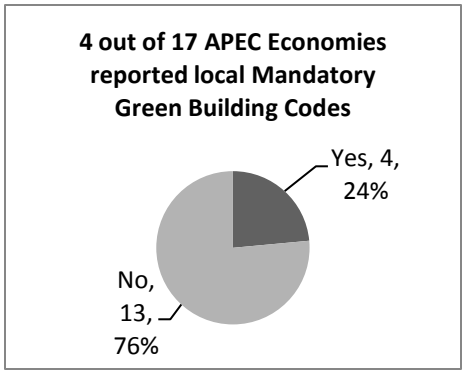
Respondents were asked to check a list of criteria that were included in their Economy's green building policy (the list was comprised of the following: Energy Efficiency, Indoor Environmental Quality, Materials, Transport, Waste Reduction, Water Conservation, Carbon Dioxide Reduction, Land Use, Pollution, Ecology, Innovation, and Management, and Other). In light of other APEC studies, it follows that all *Eight Economies listed energy efficiency as a component of their Green Building Policies*. The next two criteria most commonly listed were materials and innovation. Next, 5 out of 8 listed waste reduction, water conservation, CO2

reduction, and pollution. (The full list can be seen in Annex I, Question 2.) *No one Economy listed all 12 criteria.* Of Nine (9) Economies who reported no green building policy, 2 reported policies in preparation and 4 reported regulations in preparation. .

Table 2. Policies, Building Codes, and Regulations (Please See Questions 3A, 3B, 3C that referred to policies, mandatory building codes, and regulations in Annex I.)

Green Policy Yes	Green Policy No	Policy in Preparation	Existing Mandatory Building Codes	Existing Regulations	Regulations in Preparation
Australia					
	Brunei Darussalam	1	1	1	1
Canada			1		
Hong Kong China					
	Indonesia				
Japan					
	Malaysia				
	Mexico				
	New Zealand				
	Papua New Guinea				
	Peru				1
RP					
Singapore			1		1
Chinese Taipei					
Thailand			1	1	1
	The USA				
	Viet Nam	1	1		
	Totals	**2**	**5**	**2**	**4**

Green Building Codes



Six questions and three sub-questions were allotted to green building codes. The clear patterns that emerged from the survey were (1) *The preponderance (15 of 17) of Economies reported having green building codes or regulatory frameworks of some kind.* At the same time, some of these Economies identified these as Energy Efficiency Building Codes. (Papua New Guinea and Peru did not report having a green building code, although Peru reported the preparation of a standard on Bioclimatic Building with Energy Efficiency.) (2) *The preponderance (13 of 17) of Economies reported having voluntary green building codes for commercial buildings. Seven Economies reported having both mandatory and voluntary energy efficient/green building codes. Four reported local mandatory green building codes. Four reported voluntary codes only, and two reported mandatory codes only* (See Table 3, below.).

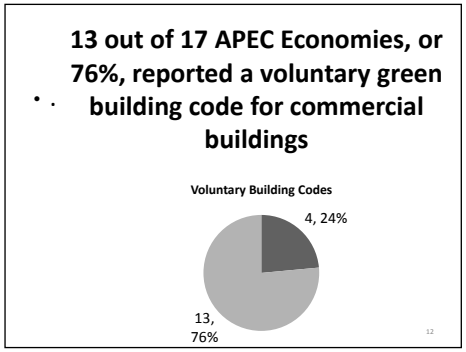


Table 3. Building Codes (Consolidating Questions 3, 3A, 3B, 3C, 4, 5, 6, 7, 8, See Annex I) Blue=Mandatory and Voluntary; Red=Voluntary Only; Green=Voluntary, Mandatory in Preparation; Gray=Mandatory Only

Economy	Mandatory Green Building Codes	Mandatory Local Green Building Codes	Mandatory Green Building Codes for Government Buildings	Mandatory Green Building Codes (or other regulatory frameworks) in Preparation	Voluntary Green Building Codes	Law that requires local jurisdictions to adopt a mandatory code
Australia			1		1	
BD				1	1	
Canada	1 (Q3B) Listed as national energy code, plumbing codes to be updated	1	1	1	1	
HK China			1		1	
Indonesia				1	1	1
Japan		1			1	
Malaysia					1	
Mexico					1	
NZ					1	
PNG						
Peru				1		
RP					1	
Singapore	1		1			
CT		1			1	1
Thailand	1 Listed as system performance requirements for building envelope, lighting, AC, heating, whole building energy compliance	1			1	1
The USA			1	1	1	
Viet Nam	1 (Q3B) Listed as Energy Efficiency Code			1		

Three Possible Areas for Case Studies on Green Building Codes

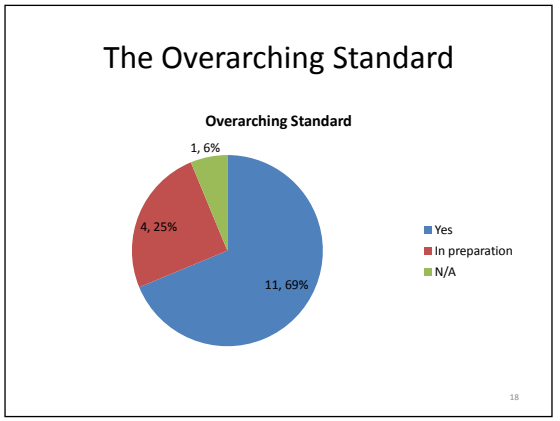
At this point in time, green building codes in APEC Economies are fluid, developing and emerging. Codes in the Region are mandatory, voluntary, national, and local (and varying subsections of local, i.e., state, province, municipality and sub-sections thereof). These variations might be organized vertically or horizontally to present clearer views of green building codes. For example, besides their status as mandatory, voluntary, national, or local, codes can also be energy efficiency codes or green codes, and in some cases, the terms may be used interchangeably. *A case study of one or two Economies might show how these variations occur, i.e., the study would construct a map of codes, showing jurisdictions, mandatory or voluntary status, with energy efficient or green criteria.* Questions 3 and 6 ask, respectively, if mandatory national and local building codes or regulatory frameworks are in preparation. 4 Economies answered yes to national, and 3 answered yes to local codes or regulatory frameworks in preparation. *A case study might discover whether or not (1) emerging mandatory codes are comprehensive enough to be called "green", and (2) if these mandatory codes will exist alongside voluntary codes, and in what kinds of jurisdictions.*

And finally, a case study might compare mandatory green building codes with existing or emerging technical regulations that govern the buying and selling of green materials and products, thus linking codes, standards, conformity assessment requirements, and regulatory goals with potential trade restrictions.

Section B: Standards and Rating Systems[3]

Standards

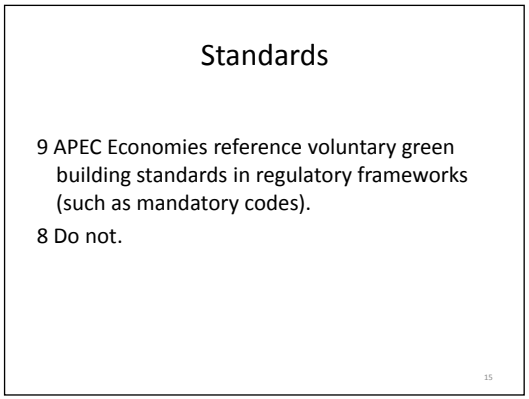
The survey offered the definition of "Standard" from Annex I of the WTO Agreement on Technical Barriers to Trade, as a "document approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory." Throughout the APEC Region and indeed throughout the world, the definition of "standard" remains flexible. In this section, some Economies offered rating systems as standards, especially when the survey referred to an "overarching standard" that defines green building (See Section 2 Question 5 in Annex I). In fact, of 11 APEC Economies reporting the existence of such an overarching voluntary or mandatory standard in their portfolios, 5 reported that standard as a rating system. Two (2) reported it as a marking or certification program, 1 reported it as a code of practice, 1 reported it as a national strategy, 1 reported it as a national standard, and 1 reported it as an ISO standard.



Five Economies reported no such standard, but 4 of those reported that one is in preparation in their Economies. The survey also asked if respondents knew of such a standard that existed or was in preparation in another Economy. One, Papua New Guinea, reported Yes and identified Standards Australia and Standards New Zealand.

[3] From this point on, the number of respondents is 16. One Economy, View Nam, did not complete the survey.

Voluntary and Mandatory Standards in Building Codes or Regulatory Frameworks



Nine APEC Economies (See Section 2, Question 1, Annex I) answered Yes when asked if they referenced voluntary green building standards in regulatory frameworks (such as mandatory codes). Eight answered No.

The survey asked Economies to list what percentage of their Economy's green building standards was mandatory and what percentage was voluntary. (See Section 2, Questions 3 and 4, Annex I). Seven Economies (Brunei Darussalam, Hong Kong, China, Indonesia, Malaysia, Mexico, New Zealand, and the United States) reported that 100% of their standards were voluntary. No Economy reported 100% mandatory standards, but four reported a mixture of voluntary and mandatory standards. The United States noted that "all standards are voluntary unless adopted by local governments". Two Economies reported rating systems as voluntary standards, two reported their codes as mandatory standards, and one reported its Building Act as mandatory standards. Five Economies did not answer this question.

Voluntary and Mandatory Standards in Construction

Most Economies (14 of 16) reported using voluntary standards for materials in the construction of green building. Most (13 of 16) reported using voluntary standards for construction products in the construction of green buildings. The survey also asked Economies to identify the bodies responsible for developing these standards (See Section 2, Questions 8 and 9, Annex I). *In all cases, the bodies listed were based in the Economies; they were classified as government agencies, standards bodies, and building councils.*

Four APEC Economies (Indonesia, Malaysia, The Philippines, and Singapore) maintain a database of green standards.

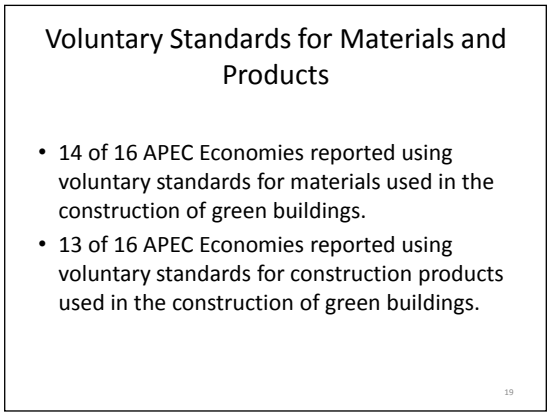


Table 4. Green Building Standards in Codes and in Construction (Section 2, Questions 1, 8, and 9, Annex I) Red= Voluntary

Economy	Voluntary in Codes	Mandatory for Materials in Construction	Voluntary For Materials in Construction	Mandatory for Products in Construction	Voluntary For Products in Construction
Australia	Yes		1		1
BD	Yes		1		1
Canada	Yes		1		1
HKC	No	1		1	
Indonesia	No	1		1	
Japan	No		1		1
Malaysia	No		1		1
Mexico	No		1		1
NZ	Yes		1		1
PNG	No Building Code		1		1
Peru	No Building Code		1	1	
RP	Yes		1		1
Singapore	Yes		1		1
CT	Yes		1		1
Thailand	Yes		1		1
The USA	Yes		1		1

Three Economies (Japan, Malaysia, and Mexico) reported no voluntary standards in codes, but reported using voluntary standards in construction for materials and products (Please see questions posed in Possible Case Study, below). Two Economies,

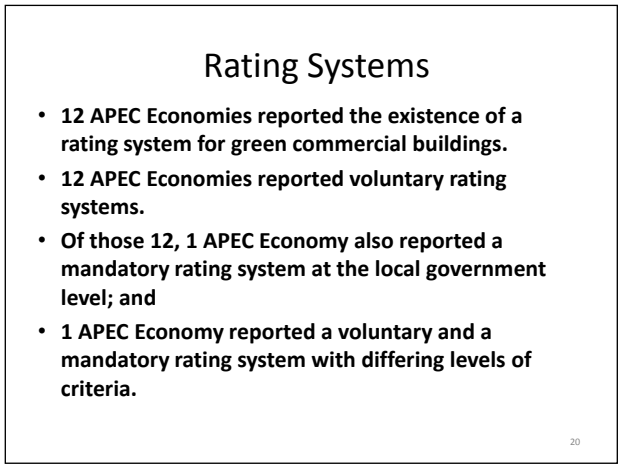
Hong Kong, China and Indonesia, reported no voluntary standards in codes, and mandatory standards for materials and products in construction.

Two Possible Case Studies on Standards.

The terms "voluntary" and "mandatory" pose interesting questions. Are voluntary standards still voluntary when they are in mandatory frameworks? Or do voluntary standards become mandatory when they are referenced in mandatory building codes? Do they become mandatory when they are *adopted* by governments? (See the U.S. Answer above) What is the difference between the terms "reference" and "adopt"? *A case study on terminology among APEC Economies might identify areas of common understanding. Such a case study might substantiate the figures in this survey or change them*. Materials and Construction Standards were reported as emanating from domestically domiciled standards developing organizations, government agencies, and building councils. What is still unknown is the origins of these standards, which, if identified, might offer an insight as to whether or not commonly used standards are used within the Region. *A possible case study might seek to identify commonly used standards by determining whether or not selected standards for materials or products are developed elsewhere and transferred to national portfolios, either modified or in their original form, or whether the bodies named are the original developers of the standards.*

Rating Systems (Section 2, Questions 10, 10A)

Twelve Economies reported the existence of a rating system for green commercial buildings. Twelve reported voluntary rating systems. Of those 12, 1 Economy reported a mandatory rating system at the local government level, and 1 reported a voluntary and a mandatory rating system with differing levels of criteria (Singapore). Four Economies listed more than 1 rating system. While 2 Economies listed LEED, and 2 listed the Green Star rating tool, there was no single rating system that appeared with any frequently among the Economies.



Possible Case Study on Rating Systems

The Pacific Northwest National (PNNL) Laboratory, a U.S. Department of Energy Government Research Laboratory, defines a "rating system" as a "system of classifying to quality or merit or amount, a voluntary system of classifying building design and/or performance according to the defined metrics of sustainability." The PNNL is contemplating changing its terminology to "certification systems". LEED, an internationally known rating system developed by the U.S. Green Building Council, is referred to as "an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO_2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their

impacts." *A case study might seek to determine what criteria in several of the most frequently used rating systems have in common, and why some Economies refer to rating systems as standards.*

Section C. Trade

Regulations (Survey Section 3, Questions 1 and 2, Annex I.)

To the question "Are there technical regulations governing building materials and products that affect the purchase of those materials for use in green building?" Five Economies, Brunei Darussalam, New Zealand, The Philippines, Chinese Taipei and Thailand answered Yes. Four others, Canada, Indonesia, Japan, and the United States, reported that regulations were anticipated or in preparation. These regulations do not include the energy-saving aspects of appliances or equipment, such as copying machines, but do include materials and products or prefabricated structural components used in the construction of commercial buildings.

Technical Regulations

- **5 APEC Economies reported the existence of technical regulations governing the use of building materials and products that affect the purchase of those materials:**
  - **Brunei Darussalam**
  - **New Zealand**
  - **The Philippines**
  - **Chinese Taipei**
  - **Thailand**
- **4 reported that there were regulations anticipated or in preparation:**
  - **Canada – Japan - The United States and**
  - **Indonesia**

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Standards in Regulation

Of the 5 Economies with technical regulations in place, 3 reported that they employ national, international, and modified international standards in their technical requirements. The other 2 use national and international standards. The same 5 Economies, have set out conformity assessment requirements in their regulations, but no identifiable pattern emerged.

Possible Case Study on Conformity Assessment Requirements in Technical Regulations.

The number of Economies with existing technical regulations is still relatively low, but *a case study could identify the kinds of conformity assessment requirements that are appearing in technical regulations and emerging technical regulations*. This is an area in which lies the potential for diversity and duplication of conformity assessment procedures for exporters.

Certifications

To the final question "Are foreign green building materials or construction product certifications recognized by your Economy?" Ten Economies said Yes: Australia, Brunei Darussalam, Canada, Indonesia, Japan, New Zealand, The Philippines, Singapore, Thailand, and the United States. The conditions for acceptance are unique in every reporting Economy.

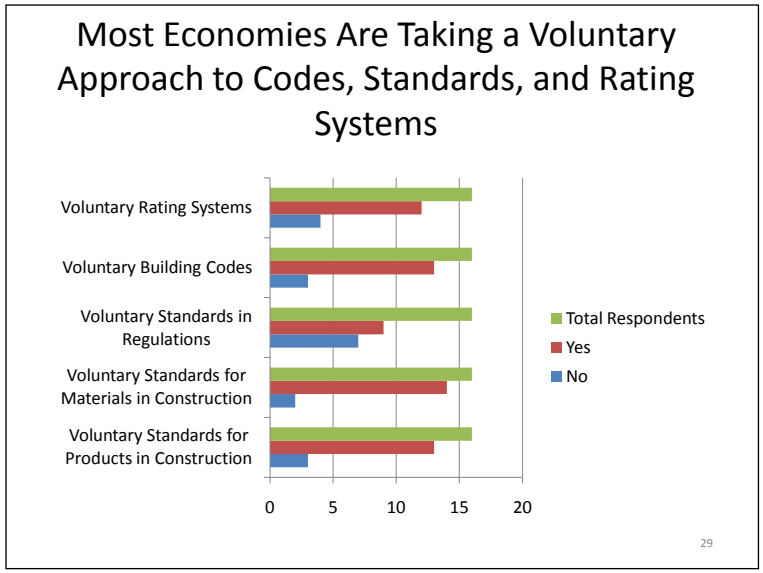
Possible Case Study on the Acceptance of Foreign Certifications

The survey is limited in its ability to capture the details of the requirements for acceptance of foreign certifications for building materials and construction products. It would appear, however, that as in the area of conformity assessment, there is diversity among Economies as to the conditions for acceptance of foreign certifications. *A case study could detail these requirements*.

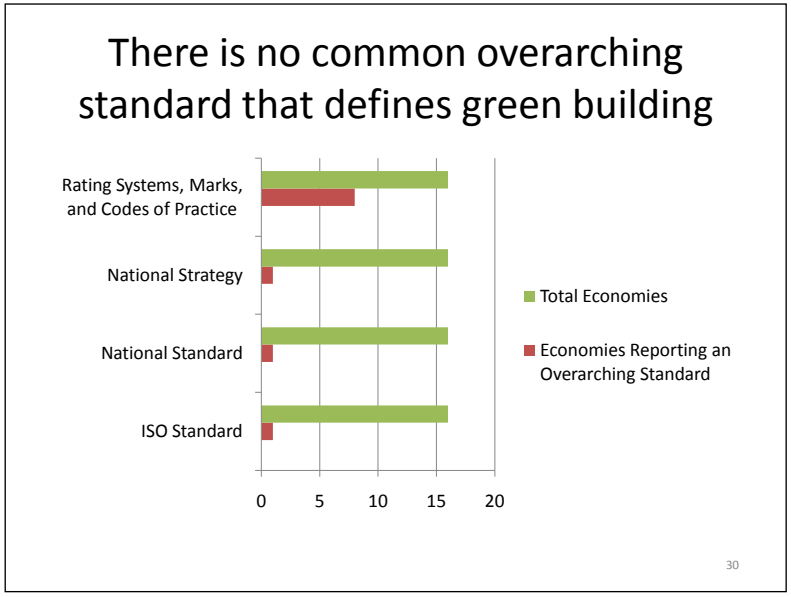
Section D: Findings

1. *More definitions will yield better data.* While language did not appear to be an obstacle, commonly used terms, such as *policy, standard, voluntary standard, mandatory standard, and rating systems* are understood and used differently throughout the Region. These differences are most certainly reflected in the data, giving rise to additional questions regarding the use of voluntary and mandatory standards in internal codes and regulations.
2. *APEC Economies are moving toward green building*. Thirteen Economies, almost two-thirds of all 21 Economies, reported having voluntary green building codes. Energy efficiency is already addressed in all APEC Economies; and 17, or 81% of APEC Economies, took part in this survey.

3. *At this moment in time, most Economies are taking a voluntary approach to codes, standards, and rating systems.*

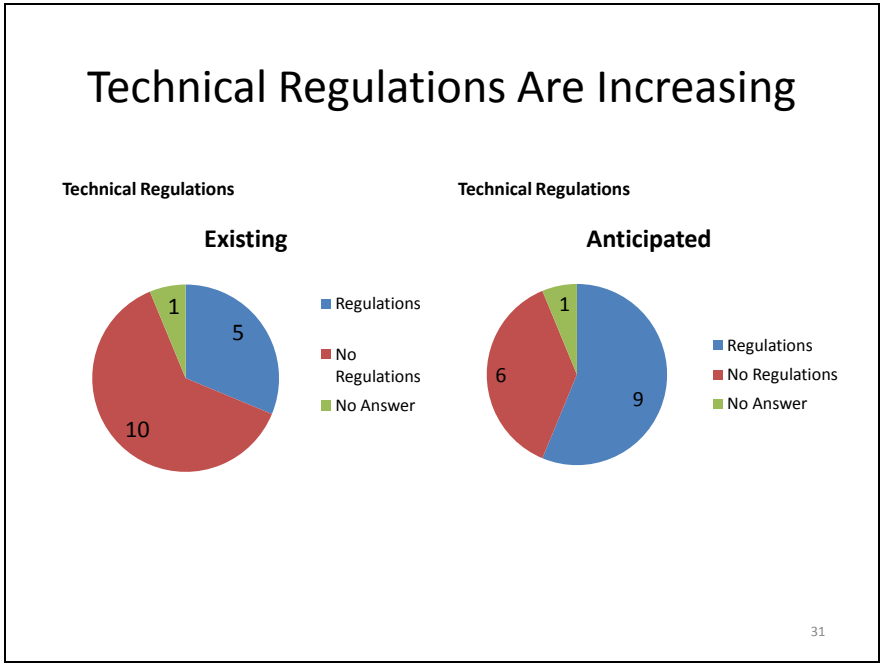


4. *There is no common overarching standard that defines green building.*



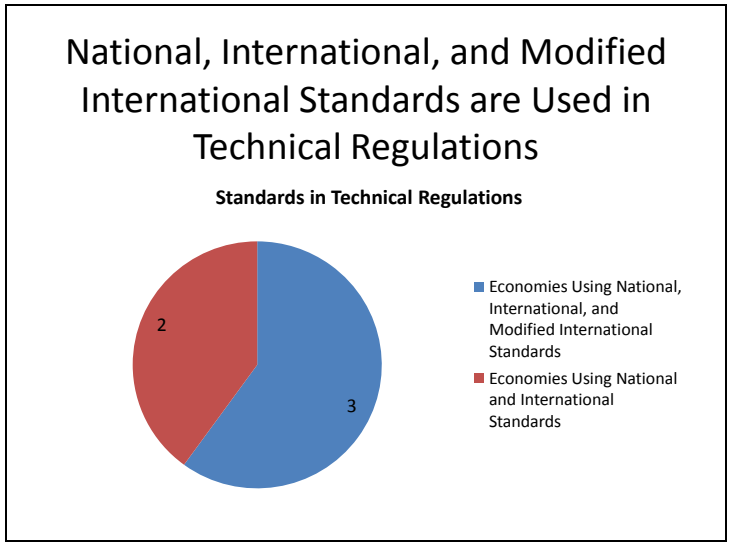
The survey revealed that Economies rely on rating systems, marks, codes of practice, a strategy and two standards, one national, one an ISO standard, as guides to what constitutes a green building. Complicating the issue is the absence of the definition of "standard", putting greater distance between any collection of criteria and a common standard accepted by all Economies.

5. *Technical Regulations Are Increasing*.



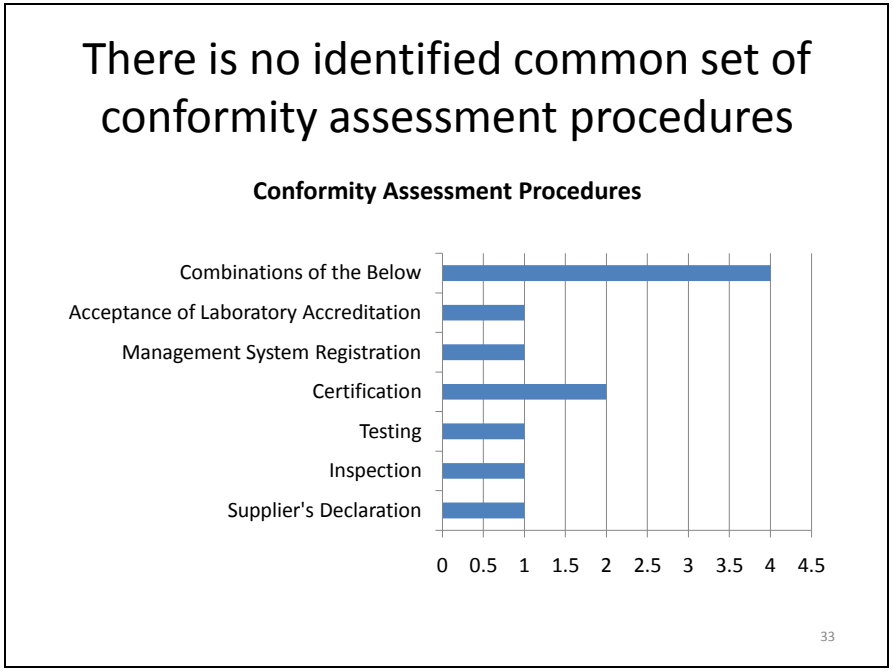
At this point in time, 5 of 16 reporting Economies have green building technical regulations in place. When reported regulations in preparation are completed, 9 of 16 reporting Economies, or more than half of the reporting Economies, will have green building technical regulations in place.

6. *National, International, and Modified International Standards are Referenced in Technical Regulations governing the purchase of green materials and products*. See Section 3, Question 3, Annex I.



No Economy reported using national standards only.

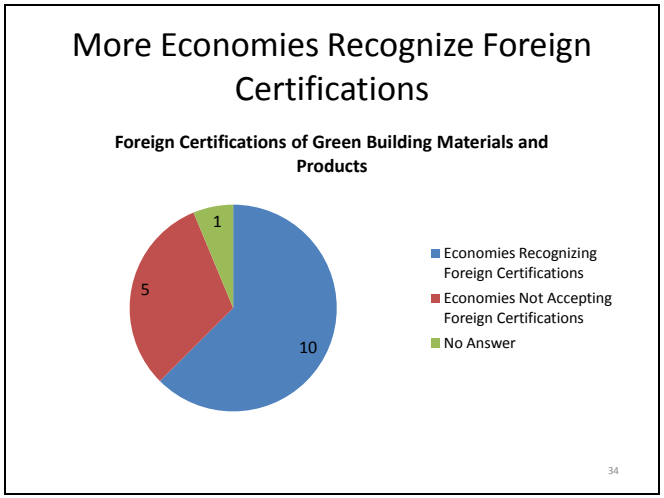
7. *All Economies reporting existing technical regulations also reported setting out conformity assessment requirements in those regulations, but there is no identifiable common set of conformity assessment procedures.* See Section 3, Question 4, Annex I.



The question was "If the answer to question #1 is yes (Are there technical regulations?) Do the technical regulations set out conformity assessment requirements for (methods listed: supplier's declaration, inspection, testing, certification, management system registration, acceptance of laboratory accreditation, combinations of the above), Four Economies replied "combinations of the above",

but did not specify what those combinations were. One Economy, The Philippines, did, checking all methods, and "combinations of the above. Chinese Taipei listed certification only.

8. *More Economies Recognize Foreign Certifications for green building materials or construction products.*



The realities of conditions of acceptance are also diverse and subjective among Economies, as some requirements are more liberal than others. Still, 10 Economies said yes to this question.

Table 5. Greatest Areas of Commonality

Economy	Voluntary Standards for Materials in Construction	Voluntary Green Building Codes	Voluntary Standards for Products in Construction	Voluntary Rating Systems	Accept Foreign Certifications
Australia	1	1	1	1	1
BD	1	1	1		1
Canada	1	1	1	1	1
HKC		1		1	
Indonesia		1			1
Japan	1	1	1	1	1
Malaysia	1	1	1	1	
Mexico	1	1	1	1	
NZ	1	1	1	1	1
PNG	1		1		
Peru	1				
RP	1	1	1	1	1
Singapore	1		1	1	1
CT	1	1	1	1	
Thailand	1	1	1	1	1
The USA	1	1	1	1	1
Viet Nam					
Total	**14**	**13**	**13**	**12**	**10**

Seven Economies, Australia, Canada, Japan, New Zealand, Republic of the Philippines, Thailand, and the United States have reported all the above areas in common.

Annex I: Survey Questions and Answers

Section One: Policies

1) Does your Economy have a National Green Building Policy or Policies that include a provision(s) on commercial buildings? (The policy may include a provision(s) on residential buildings as well, but must include commercial buildings.)

		Yes	No	If yes, please list
		0	0	
Australia		1	0	Building Code of Australia , National Strategy on Energy Efficiency Mandatory Diclosure of Energy Efficiency, Green Leases
Brunei Darussalam		0	1	
Canada		1	0	Not national, but various green building approaches amongst Provincial and Municipal jurisdictions.
Hong Kong, China		1	0	Building (Energy Efficiency) Regulation (Cap.123M) Buildings Energy Efficiency Ordinance (Cap.610)
Indonesia		0	1	
Japan		1	0	Law Concerning the Rational Use of Energy
Malaysia		0	1	
Mexico		0	1	
New Zealand		0	1	
Papua New Guinea		0	1	
Peru		0	1	
The Philippines		1	0	The National Building Code of the Philippines or Presidential Decree 1096
Singapore		1	0	BCA Green Building Masterplan (singapore) BCA Green Mark Scheme

Chinese Taipei		1	0	Building Act and related Design and Technique Direction 1. Chapter17: Green Building Standards 2. Design and Technique Directions (1) Design and Technique Directions for Energy Saving of Building on Hotel and Restaurant (2) Design and Technique Directions for Energy Saving of Building on Department Store (3) Design and Technique Directions for Energy Saving of Building on School, Large-scale Space and Others (4) Design and Technique Directions for Energy Saving of Building on Office (5) Design and Technique Directions for Energy Saving of Building on Hospital (6) Design and Technique Directions for Energy Saving of Building on Residence (7) Rainwater Storage Utility Design Directions and Commentary of Buildings (8) Daily Wastewater Recycling Design Directions and Commentary of Buildings (9) Design and Technique Specifications for Greenery of Site (10) Design and Technique Specifications for Soil Water Content (11) Design and Technique Specifications for Green Building Materials, Policy: Eco-City and Green Building Promotion Program; Provisions: the Building Code and related Design and Technique Directions.
Thailand		1	0	Building Energy Codes, Designated Building Regulations, Building Labeling Certification, S&L for appliances and construction material guide books and awareness
The United States		0	1	
Viet Nam		0	1	
Totals		**8**	**9**	

	2) If the answer to Question #1 (above) is Yes: Which of the following criteria are included as components of your Economy's green building policy or policies? The following list is not exhaustive. It is offered for this survey only. Please choose all that apply.												
Name of Economy	Energy Efficiency	Indoor Environ-mental Quality	Materials	Transport	Waste Reduction	Water Conser-vation	CO2 Reduction	Land Use	Pollution	Ecol.	Innovation	Mgmt	Other
Australia	1	0	0	0	0	0	1	0	0	0	1	0	
BD	0	0	0	0	0	0	0	0	0	0	0	0	
Canada	1	0	0	0	1	1	0	0	1	0	0	0	
HK, China	1	0	1	0	0	0	0	0	0	0	0	0	
Indonesian	0	0	0	0	0	0	0	0	0	0	0	0	
Japan	1	0	0	0	0	0	0	0	0	0	1	1	Condensation, etc.
Malaysia	0	0	0	0	0	0	0	0	0	0	0	0	
Mexico	0	0	0	0	0	0	0	0	0	0	0	0	
NZ	0	0	0	0	0	0	0	0	0	0	0	0	
PNG	0	0	0	0	0	0	0	0	0	0	0	0	
Peru	0	0	0	0	0	0	0	0	0	0	0	0	
RP	1	1	1	1	1	1	1	1	1	1	1	1	
Singapore	1	1	1	1	1	1	1	0	1	1	1	1	Use of Renewable Energy
CT	1	1	1	0	1	1	1	0	1	1	1	0	Energy Saving of Building Envelope, Biodiviersity, Soil Water Content
Thailand	1	1	1	1	1	1	1		1		1	1	
The USA	0	0	0	0	0	0	0	0	0	0	0	0	
Viet Nam													
Totals	8	4	5	3	5	5	5	1	5	3	6	4	

Name of Economy	**3) If the answer to Question #1 (above) was No: Are national green policies/mandatory building codes/regulatory frameworks for commercial buildings currently in preparation?**		
		Yes	No
Australia		0	0
Brunei Darussalam		1	0
Canada		1	0
Hong Kong, China		0	0
Indonesia		0	1
Japan		0	0
Malaysia		0	1
Mexico		0	1
New Zealand		0	1
Papua New Guinea		0	1
The Philippines		0	0
Peru		1	0
Singapore		0	0
Chinese Taipei		0	0
Thailand		0	0
The United States		0	1
Viet Nam		1	0
Totals		**4**	**6**

Name of Economy	3A) If you answered Yes regarding green policies to question 3 above, please list the green policies	3B) If you answered Yes regarding mandatory building codes to question 3 above, please list the building codes	3C) If you answered Yes regarding regulations to question 3 above, please list the regulations
Australia			
Brunei Darussalam	Green Policies are under discussion.	PBD12:2008 Building Guidelines and Requirements is under review to include sustainable building elements	Building Control Order and Regulations are under draft
Canada	Energy Efficiency Water Use Efficiency	National Energy Code for Buildings, National Building Code of Canada and National Plumbing Code of Canada. (all will soon contain provisions that contribute to 'greener' construction). National Energy Code to be updated in 2011 - new code will be 25% more energy efficient than previous version (1997).	
Hong Kong, China			
Indonesia			
Japan			
Malaysia			
Mexico			
New Zealand			
Papua New Guinea			
The Philippines			

Peru			In preparation: Standard on Bioclimatic Building with Energy Efficiency
Singapore	Pls refer to the attached BCA green building Masterplan for details on green polices	Code for Environmental Sustainability for Buildings	Building Control (Environmental Sustainability) Regulations 2008
Chinese Taipei			
Thailand	Building Energy Codes, Designated Building Regulations, Building labeling Certification, S&L for appliances and construction material	System performance requirements for Building envelope, Lighting, A/C system, heating, whole building Energy compliance	Designated Building Regulations
The United States			
Viet Nam	Vietnam Green Building Committee (VGBC) has been established	Energy Efficiency Building Code was issued in 2005. This building code is mandatory. Green building standard is under preparation.	

Annex I. Table A. Questions 1, 3, 3A, 3B, 3C,

Green Policy Yes	Green Policy No	Policy in Preparation	Existing Mandatory Building Codes	Existing Regulations	Regulations in Preparation
Australia					
	Brunei Darussalam	1	1	1	1
Canada			1		
Hong Kong China					
	Indonesia				
Japan					
	Malaysia				
	Mexico				
	New Zealand				
	Papua New Guinea				
	Peru				1
RP					
Singapore			1		1
CT					
Thailand			1	1	1
	The USA				
	Viet Nam	1	1		
	Totals	**2**	**5**	**2**	**4**

Name of Economy	4) Does your Economy have a mandatory national green building code(s) that applies only to government buildings?			
		Yes	**No**	**If yes, please list:**
Australia		1	0	Green Leases
Brunei Darussalam		0	1	
Canada		1	0	Building codes in Canada apply to all buildings, not just government ones. However, the Government of Canada has additional 'green' policies that apply only to its buildings (for example, the Federal Sustainable Development Strategy).
Hong Kong, China		1	0	Development Bureau Technical Circular No. 5/2009 and Environment Bureau Circular Memorandum No. 2/2009 : Green Government Buildings
Indonesia		0	1	
Japan		0	1	
Malaysia		0	1	
Mexico		0	1	
New Zealand		0	1	
Papua New Guinea		0	1	
Peru		0	1	
The Philippines		0	1	
Singapore		1	0	1) Minimum Green Mark Platinum Award for new buildings with air-conditioned area > 5000square metres. 2) Minimum Green Mark Gold Plus for existing buildings with air-conditioned area >10,000 square metres
Chinese Taipei		0	1	
Thailand		0	1	All designated buildings (including government buildings) have to be complied by regulations.
The United States		1	0	Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" sets out guidelines for federal building siting, construction, and use
Viet Nam			1	
Totals		**5**	**12**	

Name of Economy	**5) Does your Economy have mandatory green building codes that are relegated to local (provincial/state/municipal/village) jurisdictions?**		
		Yes	No
Australia		0	1
Brunei Darussalam		0	1
Canada		1	0
Hong Kong, China		0	1
Indonesia		0	1
Japan		1	0
Malaysia		0	1
Mexico		0	1
New Zealand		0	1
Papua New Guinea		0	1
Peru		0	1
The Philippines		0	1
Singapore		0	1
Chinese Taipei		1	0
Thailand		1	0
The United States		0	1
Viet Nam		0	1
Totals		**4**	**13**

Name of Economy	**6) If the answer to Question #5 (above) was No: Are green policies/mandatory building codes/regulatory frameworks for commercial buildings on local levels currently in preparation?**		
		Yes	No
Australia (No)		0	1
Brunei Darussalam (No)		1	0
Canada		0	0 No Answer
Hong Kong, China (No)		0	1
Indonesia (No)		1	0
Japan		0	0
Malaysia (No)		0	1
Mexico (No)		0	1
New Zealand (No)		0	1
Papua New Guinea (No)		0	1
Peru (No)		0	0 No Answer
The Philippines (No)		0	1
Singapore (No)		0	1
Chinese Taipei		0	0 No Answer
Thailand		0	0 No Answer
The United States (No)		1	0
Viet Nam (No)		0	1
Totals		**3**	**9**

Name of Economy	**7) Does your Economy have a national law that requires local jurisdictions to adopt a mandatory green building code?**		
		Yes	No
Australia		0	1
Brunei Darussalam		0	1
Canada		0	1
Hong Kong, China		0	1
Indonesia		1	0
Japan		0	1
Malaysia		0	1
New Zealand		0	1
Papua New Guinea		0	1
Peru		0	1
The Philippines		0	1
Mexico		0	1
Singapore		0	1
Chinese Taipei		1	0
Thailand		1	0
The United States		0	1
Viet Nam		0	1
Totals		**3**	**14**

Name of Economy	**8) Does your Economy have a voluntary green building code(s) for commercial buildings?**		
		Yes	No
Australia		1	0
Brunei Darussalam		1	0
Canada		1	0
Hong Kong, China		1	0
Indonesia		1	0
Japan		1	0
Malaysia		1	0
Mexico		1	0
New Zealand		1	0
Papua New Guinea		0	1
Peru		0	1
The Philippines		1	0
Singapore		0	1
Thailand		1	0
Chinese Taipei		1	0
The United States		1	0
Viet Nam		0	1
Totals		**13**	**4**

Section Two: Standards and Rating Systems

Name of Economy	**1) Does your Economy reference voluntary green building standards in regulatory frameworks (such as mandatory codes) for commercial building?**		
		Yes	No
Australia		1	0
Brunei Darussalam		1	0
Canada		1	0
Hong Kong, China		0	1
Indonesia		0	1
Japan		0	1
Malaysia		0	1
Mexico		0	1
New Zealand		1	0
Papua New Guinea		0	1
Peru		0	1
The Philippines		1	0
Singapore		1	0
Chinese Taipei		1	0
Thailand		1	0
The United States		1	0
Viet Nam		0	1
Totals		**9**	**8**

Name of Economy	**2) Does your Economy maintain a database(s) of green standards?**			
		Yes	No	If yes, please provide link(s):
Australia		0	1	
Brunei Darussalam		0	1	
Canada		0	1	
Hong Kong, China		0	1	
Indonesia		1	0	www.bsn.go.id, www.pu.go.id
Japan		0	1	
Malaysia		1	0	http://www.standardsmalaysia.gov.my/standards.php
Mexico		0	1	
New Zealand		0	1	
Papua New Guinea		0	1	
Peru		0	1	
The Philippines		1	0	The Department of Trade and Industry (DTI) - Bureau of Product Standards (BPS)
Singapore		1	0	http://bca.gov.sg/greenmark/green_mark_criteria.html
Chinese Taipei		0	1	
Thailand		0	1	
The United States		0	1	
Viet Nam		0	0	No Answer
Totals		4	12	

	3) What percentage (%) of your Economy's green building standards is mandatory?	**4) What percentage (%) of your Economy's green building standards is voluntary?**
Australia	All new commercial buildings must comply with the Building Code of Australia	Voluntary rating schemes such as Green Star and NABERS have reasonable market acceptance.
Brunei Darussalam	0%	100%
Canada	n/a	n/a
Chinese Taipei	Mandatory requirements: Chapter17 of Building Act	Voluntary mark: Green Building Mark; Green Building Material Mark; Green Mark
Hong Kong, China	0%	100%
Indonesia	0	100
Japan	N/A	N/A
Malaysia	None	All
Mexico	0%	100%
New Zealand	None.	All.
Papua New Guinea	NIL	LESS THAN 5%
Peru	0%	0%
The Philippines	approximately ten percent (10%)	approximately thirty percent (30%)
Singapore	approximately 50% based on points, in addition there are prerequisites to comply to	50%
Thailand	Cannot specify	Cannot Specify
The United States		100% -- all standards are voluntary (unless adopted by local governments. In 2010, only 384 local jurisdictions had adopted initiatives to increase green building and/or energy efficiency.)
Viet Nam	N/A	N/A

Name of Economy	**5) In the national portfolio or in the collection of national and international standards in your Economy, is there one overarching voluntary or mandatory standard that defines green building in commercial buildings, or one that identifies attributes that promote green building?**			
		Yes	No	If yes, please identify:
Australia		1	0	The National Strategy on Energy Efficiency
Brunei Darussalam		1	0	ISO 15392:2008 Sustainability in Building Construction - General Principles
Canada		0	1	
Hong Kong China		1	0	Building Environmental Assessment Method
Indonesia		0	1	
Japan		1	0	CASBEE System
Malaysia		1	0	MS1525: Code of practice on Energy Efficiency and Use of Renewable Energy for Non Residential Buildings
Mexico		1		PCES (Sustainable Edification Certification Program) for Mexico
New Zealand		1	0	The New Zealand Green Building Council Green Star rating tool
Papua NG		0	1	
Peru		0	1	
The Philippines		1	0	The Philippine Green Building Council (PhilGBC)' project Building Ecologically Responsive Design for Excellence (BERDE) is presently developing the green building rating system for the Philippines.
Singapore		1	0	BCA Green Mark
Chinese Taipei		1	0	LEED-CI, BREEAM Retail
Thailand		1	0	LEED
The United States		0	1	
Viet Nam		0	0	
Totals		**11**	**5**	

Name of Economy	**6) If the answer to Question #5 (above) is No: Is this standard, or kind of standard, currently in development in a government agency, the national standards body, or in a domestically-based standards body in your economy?**				
		Yes	No	N/A	If yes, please identify the Agency or Body
Australia		0	0	0	
BD		0	0	0	
Canada		1	0	0	Canadian Standards Association
Hong Kong, China		0	0	0	
Indonesia		1	0	0	BSN (national Standardization agency of Indonesia) Technical committee 91-01 (secretariat of TC 91-01 at Ministry of public work)
Japan		0	0	0	
Malaysia		0	0	0	
Mexico		0	0	0	
New Zealand		0	0	1	
Papua New Guinea		1	0	0	PNG NATIONAL INSTITUTE OF STANDARS & INDUSTRIAL TECHNOLOGY (NISIT)
Peru		1	0	0	Promoter: Peruvian Ministry of Housing, Construction and Sanitation - Leading area: National Direction of Construction
The Philippines		0	0	1	
Singapore		0	0	0	
Chinese Taipei		0	0	0	
Thailand					
The United States		0	1	0	
Viet Nam		N/A	N/A		
Totals		**4**	**1**		

Name of Economy	**7) If the answer to Question #5 (above) is No: To your knowledge, does this standard, or kind of standard, exist or is it currently in development in a standards body domiciled in another APEC Economy?**				
		Yes	No	N/A	If yes, please identify Standards Body
		0	0	0	
Australia		0	0	0	
Brunei Darussalam		0	0	0	
Canada		0	1	0	
Hong Kong, China		0	0	0	
Indonesia		0	0	1	
Japan					
Malaysia		0	0	0	
Mexico		0	0	0	
New Zealand		0	0	1	
Papua New Guinea		1	0	0	STANDARDS AUSTRALIA STANDARDS NEW ZEALAND PNG NISIT
Peru		0	0	1	
The Philippines		0	0	1	
Singapore		0	0	0	
Chinese Taipei		0	0	0	
Thailand				1	
The United States		0	0	1	
Viet Nam					

Economy	8) Are voluntary standards for materials used in the construction of green buildings?			
		Yes,	No	If yes, please identify the standards body(ies) responsible for developing these standards.
Australia		1	0	Green Star, administered by the Green Building Council of Australia A range of Australian Standards administered by Standards Australia
Brunei Darussalam		1	0	Authority of Building Control and Construction Industry (ABCi)
Canada		1	0	There are a number of standards including Canadian Standards Association, Canadian General Standards Board, the Canadian Standards Association Sustainable Forest Management Standard, the Forest Stewardship Council (FSC)Canada scheme and the Sustainable Forestry Initiative (SFI) scheme and their respective chains of custody are certifications used in the construction industry in Canada as means of proof of the sustainability of the management of forests from which wood building products have been sourced. FSC and SFI are not technically standards, as defined be the ISO, hence they are referred to as "schemes".
Hong Kong, China		0	1	
Indonesia		0	1	
Japan		1		Japanese Industrial Standards Committee (JISC) and other industrial associations.
Malaysia		1	0	Department of Standards Malaysia
Mexico		1	0	NOM-018 Thermal insulation for buildings - Enrgy Agency and National Agency for Standardization and Certification of Building and Construction.
New Zealand		1	0	The Green Star rating tool is administered by the New Zealand Green Building Council. (The Green Star rating tool considers materials and products used in construction to some extent.) The Building Code Act is administered by the Department of Building and Housing. (The Act has resource and materials efficiency principles for all new constructions but these principles are not reflected in the Building Code compliance documents.)
Papua New Guinea		1	0	STANDARDS AUSTRALIA STANDARDS NEW ZEALAND PNG NISIT

Peru		1	0	INDECOPI - National Institute for the Defense of Competition and Protection of Intellectual Property
The Philippines		1	0	The DTI-Bureau of Product Standards (BPS), as the National Standards Body of the Philippines develops, implements & promulgates standards & conformity assessment activities that are at par with international standards to enhance the competitive advantage of the local industries, and more importantly to protect the interests of consumers.
Singapore		1	0	BCA Singapore Green Building Council (SGBC) Singapore Enviromental Council (SEC)
Chinese Taipei		1	0	National standards(CNS): The Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs
Thailand		1		HEPS and EE label from Ministry of Energy, GREEN Label from Thailan Environment Institute (TEI)
The United States		1	0	U.S. Environmental Protection Agency (ENERGY STAR, WaterSense), U.S. Department of Agriculture (BioPreferred), ASTM International, NSF International, GreenGuard, Forest Stewardship Council, Scientific Certification Systems, EcoLogo/Terrachoice, GreenSeal, and a number of new building product sustainability standards are under development by UL-Environment. This is not an exhaustive list of all voluntary standards used in green buildings, but these organizations represent the most widely recognized and utilized standards.
Viet Nam				N/A
Totals		**14**	**2**	

Name of Economy	9) Are voluntary standards for construction products used in the construction of green buildings?			
		Yes	No	If yes, please identify the standards body(ies) responsible for developing these standards
		0	0	
Australia		1	0	Standards Australia administer a suite of National Standards
Brunei Darussalam		1	0	Authority of Building Control and Construction Industry (ABCi)
Canada		1	0	Canadian Standards Association, Canadian General Standards Board
Hong Kong, China		0	1	
Indonesia		0	1	
Japan		1		Japanese Industrial Standards Committee (JISC) and other industrial associations.
Malaysia		1	0	Department of Standards Malaysia
Mexico		1	0	NOM-C-018 Thermal insulation for buildings
New Zealand		1	0	The Green Star rating tool is administered by the New Zealand Green Building Council
Papua New Guinea		1	0	STANDARDS AUSTRALIA STANDARDS NEW ZEALAND PNG NISIT
Peru		0	1	
The Philippines		1	0	The DTI-Bureau of Product Standards (BPS)
Singapore		1	0	BCA, SGBC, SEC
Chinese Taipei		1	0	National standards(CNS): The Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs

Thailand		1		HEPS an EE Label from Ministry of Energy, GREEN Label from Thailand Environment Institute (TEI)
The United States		1	0	U.S. Environmental Protection Agency (ENERGY STAR, WaterSense), U.S. Department of Agriculture (BioPreferred), ASTM International, NSF International, GreenGuard, Forest Stewardship Council, Scientific Certification Systems, EcoLogo/Terrachoice, GreenSeal, and a number of new building product sustainability standards are under development by UL-Environment. This is not an exhaustive list of all voluntary standards used in green buildings, but these organizations represent the most widely recognized and utilized standards.
Viet Nam		N/A	N/A	
Totals		**13**	**3**	

Name of Economy	10) Does a rating system exist in your economy for green commercial buildings?			
		Yes	No	If yes, please identify the rating system
Australia		1	0	Green Star is a design based rating tool NABERS is a performance based rating tool
BD		0	1	
Canada		1	0	LEED, BOMA, BREAM BEST
Hong Kong, China		1	0	Building Environmental Assessment Method
Indonesia		0	1	
Japan		1		CASBEE
Malaysia		1	0	Green Building Index (GBI)
Mexico		1	0	PCES Certification Program Sustainable Buildings for Mexico City
New Zealand		1	0	the New Zealand Green Building Council 'Green Star' rating tool
PNG		0	1	NA
Peru		0	1	
The Philippines		1	0	The Philippines Green Building Rating System
Singapore		1	0	BCA Green Mark
Chinese Taipei		1	0	
Thailand		1	0	Building Labeling from Ministry of Energy, Green leaf for hotel from Green Leaf Foundation Green Building from Thai Green Building Institute
The United States		1	0	LEED, GreenGlobes, others
Viet Nam		N/A	N/A	
Totals		**12**	**4**	

Name of Economy	10A) If you answered Yes to question #10 above, is the rating system mandatory?			
		Yes	No	If yes, please identify the rating system
Australia		0	1	
Brunei Darussalam		0	0	
Canada		0	1	
Hong Kong, China		0	1	
Indonesia		0	0	
Japan		1		CASBEE (Obligates ratings at local government level)
Malaysia		0	1	
Mexico		0	1	
New Zealand		0	1	
Papua New Guinea		0	0	
Peru		0	0	
The Philippines		0	1	
Singapore		1	0	BCA Green Mark for Non-Residential new buildings (Minimum certified levels)
Chinese Taipei		0	1	
Thailand		0	1	
The United States		0	1	
Viet Nam		N/A	N/A	
Totals		**2**	**10**	

Name of Economy	10B) If you answered Yes to question #10 above, is the rating system voluntary?			
		Yes,	No	If yes, please identify the rating system
Australia		1	0	Green Star is a design based rating tool NABERS is a performance based rating tool
Brunei Darussalam		0	0	
Canada		1	0	LEED, BOMA, BREAM BEST
Hong Kong, China		1	0	Building Environmental Assessment Method
Indonesia		0	0	
Japan		1		CASBEE (local governments beyond the obligated area are voluntary)
Malaysia		1	0	Rating System includes Energy Efficiency, Indoor Environmental Quality, Sustainable Site Planning and Management, Materials and Resources, Water Efficiency, and Innovation
Mexico		1	0	PCES Certification Program Sustainable Buildings for Mexico City
New Zealand		1	0	Refer question 10
Papua New Guinea		0	0	
Peru		0	0	
The Philippines		1	0	The Green Adaptation Measures-Energy Efficiency & Environmental Assessment Method for Buildings (GAM-3EAM) is a total effort of the Philippine Green Building Initiative, Inc. (PGBI), a national non-profit organization whose members are professional organizations from different field of expertise. The GAN-3EAM is a Green Building Rating System that provides a voluntary, consensus-based, market-responsive set of criteria to evaluate buildings. The GAM-3EAM working raft of the PGBI was initially developed by the technical committees of the United Architects of the Philippines (UAP), Philippine Society of Ventilating Air-Conditioning and refrigerating Engineers (PSVARE) and the American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE) Philippine Chapter.
Singapore		1	0	BCA Green Mark for Existing Buildings
Chinese Taipei		1	0	EEWH-BC

Thailand		1	0	Building Labeling from Ministry of Energy, Green Leaf for hotel from Green Leaf Foundation Green building from Thai Green Building Institute
The United States		1	0	LEED, GreenGlobes, others
Viet Nam		N/A	N/A	
Totals		**12**	**0**	

Section Three: Trade

Name of Economy	**1) Are there technical regulations governing building materials and products that affect the purchase of those materials for use in green building?**		
		Yes	No
Australia		0	1
Brunei Darussalam		1	0
Canada		0	1
Hong Kong, China		0	1
Indonesia		0	1
Japan		0	1
Malaysia		0	1
Mexico		0	1
New Zealand		1	0
Papua New Guinea		0	0
Peru		0	1
The Philippines		1	0
Singapore		0	1
Chinese Taipei		1	0
Thailand		1	0
The United States		0	1
Viet Nam		N/A	N/A
Totals		**5**	**10**

(PLEASE DO NOT include regulations governing the energy-saving aspects of appliances or equipment such as copying machines. PLEASE DO include materials and products or prefabricated structural components used in the construction of commercial buildings.)

Name of Economy	**2) If the answer to Question #1 is No: Are technical regulations governing the use of materials and products in green buildings anticipated or in preparation?**		
		Yes	No
Australia		0	1
Brunei Darussalam		0	0
Canada		1	0
Hong Kong, China		0	1
Indonesia		1	0
Japan		1	0
Malaysia		0	1
Mexico		0	1
New Zealand		0	0
Papua New Guinea		0	0
Peru		0	1
The Philippines		0	0
Singapore		0	1
Chinese Taipei		0	0
Thailand		0	0
The United States		1	0
Viet Nam		0	0
Totals		**4**	**6**

Name of Economy	**3) If the answer to Question #1 is Yes: Technical requirements governing green building materials or products reference the following kinds of standards (Please check all that apply):**				
		national standard	international standard	modified international standard	Other
Australia		0	0	0	
Brunei Darussalam		1	1	1	
Canada		0	0	0	
Hong Kong, China		0	0	0	
Indonesia (ans.No to #1)		1	0	1	
Japan		0	0	0	
Malaysia		0	0	0	
Mexico		0	0	0	
New Zealand		1	1	0	
Papua New Guinea		0	0	0	
Peru		0	0	0	
The Philippines		1	1	0	
Singapore		0	0	0	
Chinese Taipei		1	1	1	Green Building Material Mark; Green Mark
Thailand		1	1	1	Combinations of the above
The United States		0	0	0	Check US site
Viet Nam		N/A	N/A		
Totals		**6**	**4**	**3**	

Name of Economy	**4) If the answer to Question #1 is Yes: Do the technical regulations set out conformity assessment requirements for: (Please check all that apply.)**							
		Supplier's Declaration	Inspection	Testing	Certification	Management System Registration	Acceptance of Laboratory Accreditation	Combinations of the above
Australia		0	0	0	0	0	0	0
Brunei Darussalam		0	0	0	0	0	0	1
Canada		0	0	0	0	0	0	0
Hong Kong, China		0	0	0	0	0	0	0
Indonesia		0	0	0	0	0	0	0
Japan		0	0	0	0	0	0	0
Malaysia		0	0	0	0	0	0	0
Mexico		0	0	0	0	0	0	0
New Zealand		0	0	0	0	0	0	1
Papua NG		0	0	0	0	0	0	0
Peru		0	0	0	0	0	0	0
The Philippines		1	1	1	1	1	1	1
Singapore		0	0	0	0	0	0	0
Chinese Taipei		0	0	0	1	0	0	0
Thailand		0	0	0	0	0	0	1
The United States		0	0	0	0	0	0	0
Viet Nam		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals		**1**	**1**	**1**	**2**	**1**	**1**	**4**

Name of Economy	**5) Are foreign green building materials or construction product certifications recognized by your economy?**			
		Yes	No	If yes, please identify
Australia		1	0	International standards equivalent to the relevant Australian standard
Brunei Darussalam		1	0	Certification Reports issued by Third-Party Accredited Laboratories / Certification Bodies
Canada		1	0	Forest Stewardship Council, Green Seal Certification
Hong Kong, China		0	1	
Indonesia		1	0	SNI sertification product , such as: for cement
Japan		1		It is recognized practically if the test operation, etc. are in common.
Malaysia		0	1	
Mexico		0	1	
New Zealand		1	0	There is nothing in the Building Code to preclude foreign standards/certification. Local councils decide, on the merits of an application, whether the materials/design are acceptable. However, most foreign certifications will be classed as 'alternative solutions', which are generally harder to get approved than the 'standard' NZ certifications.
Papua New Guinea		0	0	
Peru		0	1	
The Philippines		1	0	The Department of Trade and Industry (DTI), through its Bureau of Product Standards (BPS) operates the Product Certification Scheme to regulate the sale of critical construction materials to level the playing field of the industry sectors and to protect the interests of the buying public. Under the Import Commodity Clearance (ICC) Certification Scheme, all importers of products declared under mandatory certification are required to have their products tested and inspected at the BPS Testing Center or DTI-accredited testing laboratories, prior to their product distribution and sale in the Philippine market.
Singapore		1	0	Foreign Certification is commonly accepted
Chinese Taipei		0	1	
Thailand		1		LEED
The United States		1	0	While they may not be formally recognized at this time, procurement officials will often look to foreign certifications as a secondary source of information to inform purchasing decisions. These include EU Flower and the Canadian EcoLogo.
Totals		**10**	**5**	