Eco-Innovation Gateway for Asia and Europe

Survey on the Status of Eco-Innovation in SMEs in ASEM Member Countries

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Center

# Eco-Innovation Gateway for Asia and Europe

## Survey on the Status of Eco-Innovation in SMEs in ASEM Member Countries

Neo EcoS

YGP Young & Global Partners

Gallup KOREA

The survey has two main focuses, 1) the eco-innovation activities of SMEs, and 2) policy needs for eco-innovation.

The survey was conducted with the participation of 1,180 small and medium sized enterprises from 12 ASEM member countries in Asia and Europe. This is one of the first research projects undertaken to determine the status of eco-innovation in ASEM member countries. Whereas most research since 1993 on the status of eco-innovation has taken place in Germany, the United Kingdom, Australia, the United States, Canada, and other developed countries, this is the first study to consider the status of eco-innovation in developing countries in Asia. Eco-innovation research carried out by the OECD and the European Union focus on those organizations' member states, and this report is able to compare the work that has been done in those countries with data from important developing nations.

- The survey found that there is a high level of awareness of eco-innovation in SMEs, which allows us to clearly identify the needs of SMEs in their pursuit of cleaner business strategies.

- Elements of the eco-innovation research previously completed by the European Union in 2011 were incorporated in comparative analysis between the EU and Asia in this survey. This has allowed us to identify gaps in eco-innovation policies between Asia and Europe from the perspective of ASEM.

# Foreword

This report was prepared by NeoEcos and Young & Global Partners. The research was requested by the ASEM SMEs Eco-Innovation Center (ASEIC).

Research Organizations:
· NeoEcos (South Korea)
· Young & Global Partners (Belgium)
· Gallup Korea (South Korea)

Authors: Daeyoung Park, Dukchan Yoon
ASEIC English Editors : Marshall Brown, Chiden Balmes under the guidance of Sean Kim

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ASEM SMEs Eco Innovation Center (ASEIC)

The ASEM SMEs Eco-Innovation Center (ASEIC) aims to promote eco-innovation for Small and Medium-sized Enterprises (SMEs) in Asia and Europe. Its establishment was endorsed by the leaders of ASEM member countries at the 8th ASEM Summit in Brussels, Belgium. ASEIC seeks to serve as an international platform where growing environmental regulations and eco-innovation practices are shared and new opportunities are created. ASEIC is currently funded by the Small and Medium Business Administration (SMBA) of the Republic of Korea. Its office is located in Seoul.

# *Introduction*

Effective eco-innovation strategies are important for successfully advancing green growth. With eco-innovation, government and industry can reach mutually beneficial goals such as the cost-effective reduction of greenhouse gas emissions (GHGs), stronger competitiveness, and the creation of new market opportunities. Many government leaders have already begun to create effective eco-innovation policies. Recently companies have also started to explore exciting new strategies for structural eco-innovation which include new business models and alternative modes of provision. These cases show that companies with good performance on radical innovation are better at pursuing successful eco-innovation.

The Organisation for Economic Co-operation and Development (OECD) noted that the scope of eco-innovation is rapidly broadening and involves both technological and non-technological innovation, explaining that efforts in industry to reduce environmental impacts have shifted from “end-of-pipe” pollution control to a growing focus on integrated environmental strategies and responsible management practices, which involve significant non-technological changes and innovations (OECD, *Eco-Innovation in Industry*, 2009).

The EU and OECD have also found that eco-innovation has the potential to provide great opportunities for sustainable development through their member states' experiences, which can also contribute to the current economic and climate change crises (OECD, *Enhancing Developing Country Access to Eco-Innovation*, 2009). Indeed, there are active national strategies for eco-innovation in most OECD countries and EU member states. On the other hand, there have been no comprehensive evaluations of eco-innovation in Asian countries , and very little information exists regarding developing Asian nations' eco-innovation activities. We have conducted this survey to get a better idea of the status of eco-innovation in small and medium sized companies in ASEM member countries.

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# *Survey on the Status of Eco-Innovation in SMEs*

# *Methodology*

This survey was conducted via online and offline surveys targeting small and medium sized enterprises (SMEs) in ASEM member countries. The final results also includes input based on extensive interviews with eco-innovation experts from the countries surveyed.

Among ASEM member countries, China, Japan, India, Indonesia, South Korea and Vietnam in Asia and Austria, Denmark, France, Germany, Italy and UK in Europe were selected as countries for this survey. In each country around one hundred SMEs (for a total of 1,180 SMEs) have been surveyed.

Participating employees in the surveyed SMEs included environmental manager, corporate social responsibility (CSR) managers, and business strategy managers. In addition 20 eco-innovation specialists were interviewed from participating member countries as well as other relevant international organizations. The SME employees surveyed were

***Defining "Eco-Innovation"***

| |
|---|
| Eco-innovation is any form of innovation aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment or achieving a more efficient and responsible use of natural resources, including energy.<br>(Source: Competitiveness and Innovation Framework Programme (2007 to 2013), European Commission) |
| Eco-innovation is the creation of novel and competitively priced goods, processes, systems, services, and procedures designed to satisfy human needs and provide a better quality of life for all, with a life-cycle minimal use of natural resources (materials including energy, and surface area) per unit output, and a minimal release of toxic substances.<br>(Source: Europa INNOVA Thematic Workshop, Lead Markets and Innovation, 29-30 June 2006, Munich) |
| Eco-innovation is the introduction of any new or significantly improved product (good or service), process, organizational change or marketing solution that reduces the use of natural resources (including materials, energy, water and land) and decreases the release of harmful substances across the whole life-cycle.<br>(Source: Eco-Innovation Observatory, Methodological Report 2010) |
| Eco-innovation is the production, assimilation or exploitation of a product, production process, service or management or business method that is novel to the organization (developing or adopting it) and which results, throughout its life cycle, in a reduction of environmental risk, pollution and other negative impacts of resources use (including energy use) compared to relevant alternatives.<br>(Source: Rene Kemp and Peter Pearson, Measuring Eco-Innovation, 2007) |
| Eco-innovation defines a new field of techno-social innovations that focuses less on products functions and more on the environment and people. Also, it means techno-social innovations to meet environmental challenges, resource constraints and diversification of values among the people with compatibility between economy and environment.<br>(Source: Japan, Economic and Fiscal Reform 2007 – Basic Policies, 2007) |
| Eco-innovation is the process of developing new products, processes or services which provide customer and business value but significantly decrease environmental impact<br>(Source: Fussler, C. and James, P.(1996) Eco-Innovation: A Breakthrough Discipline for Innovation and Sustainability. Pitman, London) |
| Eco-innovation means the production, assimilation or exploitation of a novelty in products, production processes, and services or in management and business methods, which aims, throughout its life cycle, to prevent or substantially reduce environmental risk, pollution and other negative impacts of resource use (including energy).<br>(Source: European Commission, Environmental Technology Action Plan, 2008) |

contacted via e-mail, by telephone, and in person. Specialists were interviewed in person, by telephone, and by e-mail.

This research was jointly carried out by Neo-Ecos, Young & Global Partners (YGP) and Gallup Korea on the request of the ASEM SMEs Eco-Innovation Center (ASEIC). ASEIC was established in 2011 with the mandate to promote Asia-Europe cooperation on Eco-innovation of SMEs in both regions.

The objective of *"The Status of Eco-Innovation in SMEs of ASEM member countries"* was to investigate the general awareness, methods, application, types, barriers and drivers of eco-innovation in SMEs in ASEM member countries. In particular, the goal was to better understand the different aspects of implementation of eco-innovation between Asia and Europe.

As there are various definitions of Eco-innovation, we have considered the following definition as a working definition of "Eco-innovation."

Taking together the many available definitions of eco-innovation, this project considered the term to be defined as:

*"The innovation of processes and production methods, products (goods or services), organizations or management systems that prevents or effectively reduces environmental impacts across their whole life cycles, including various innovation activities for protecting or improving the environment or the efficient use of natural resources or energy."*

Using this working definition, three categories for this survey emergered:

1. Eco-innovation of Processes and Production Methods (including technology)
2. Eco-innovation of Products and Services
3. Eco-innovation of Organizations and Management Systems

We chose total of twelve countries, including six countries from EU and six countries in Asia in consideration of the below :

- National CO2 emission
- GDP
- Industry structure (focused on manufacture industry)

***10 Surveyed ASEM Countries***

| Region | Country |
|---|---|
| Europe | Austria (AT), Denmark (DK), France (FR), Germany (DE), Italy (IT), United Kingdom (UK) |
| Asia | China (CN), India (IN), Indonesia (ID), Japan (JP), South Korea (KR), Vietnam (VN)* |

* *The great flood in Thailand in 2011 has disrupted the data gathering process of the survey. Therefore, the researchers decided to replace Thailand with Vietnam in November 2011.*

The criteria for selecting companies to survey include:

1. Export-driven
2. Small or medium-sized business
3. Part of the International Standard Industrial Classification's (ISIC) list manufacturing industries (see table below)

***International Standard Industrial Classifications (ISIC) in 23 Manufacturing Industries***

| | |
|---|---|
| Food products and beverages | Basic metals |
| Tobacco products | Fabricated metal products, except machinery and equipment |
| Textiles | Machinery and equipment, n.e.c. |
| Apparel; dressing and dyeing of fur | Office, accounting and computing machinery |
| Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear | Electrical machinery and apparatus n.e.c. |
| Wood and of wood products and cork, except furniture; articles of straw and plaiting materials | Radio, television and communication equipment and apparatus |
| Paper and paper products | Medical, precision and optical instruments, watches and clocks |
| Publishing, printing and reproduction of recorded media | Motor vehicles, trailers and semi-trailers |
| Coke, refined petroleum products and nuclear fuel | Other transport equipment |
| Chemicals and chemical products | Furniture; manufacturing n.e.c. |
| Rubber and plastics products | Recycling |
| Other non-metallic mineral products | |

# *Chapter I*

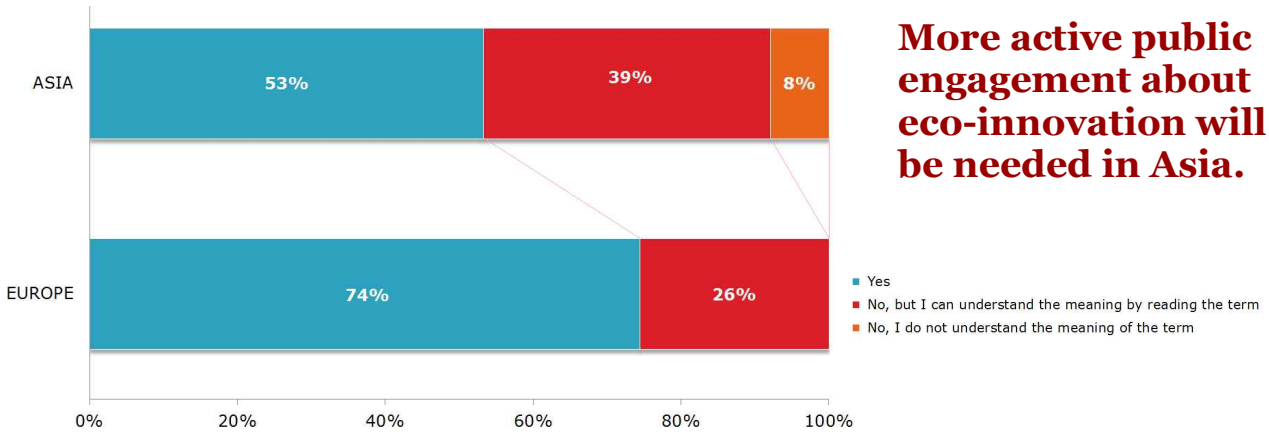
# *1.Eco-Innovation Awareness in SMEs*

# *Eco-Innovation Awareness in Asia—Low*

Nearly 4 out of every 10 Asian managers (39%) have not heard of "eco-innovation" while more than 7 out of 10 (74%) European managers (74%) have some level of awareness about eco-innovation.

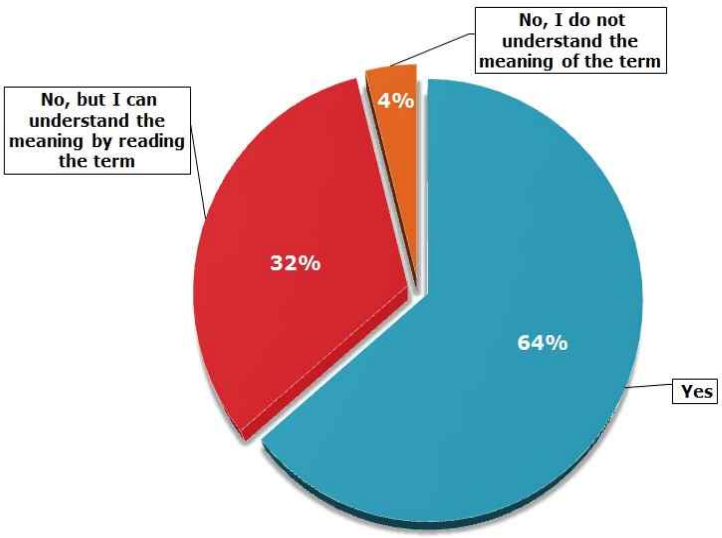
**Figure 1. General awareness of "Eco-Innovation" in Asia and Europe**

*Q: Have you heard of the term "eco-innovation" prior to this survey?*




**More active public engagement about eco-innovation will be needed in Asia.**

**Figure 2. Understanding "Eco-Innovation"**



# *Chapter I*

# *2. Eco-Innovation for Process and Production Methods*

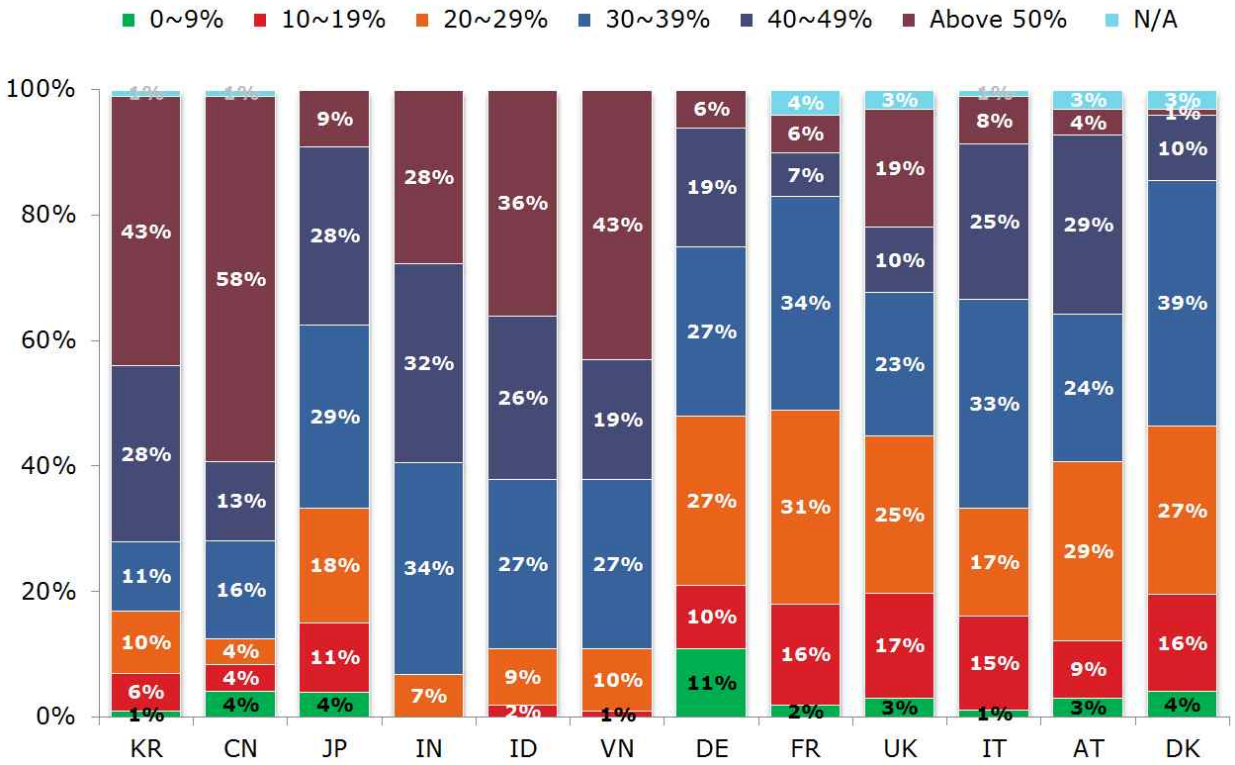
# 10% Better Resource Efficiency in Europe

More than 7 in 10 enterprises (73%) in Asia spent above 40% of their total costs on materials.

However, over half of the enterprises in Europe (54%) spent from 20% to 39% of total costs on materials in 2010.

**Figure 3. Materials cost as a percentage of total cost (2010)**

*Q: What was the percentage of materials cost in the total cost of your company in 2010?*




'Materials cost' refers to the total amount a company spends on raw inputs to manufacture products during the year. 'Total cost' refers to the total amount of direct and indirect costs that a company must incur to continue manufacturing activities during the year.

Asian companies used an average of 44% of their total cost (gross production value) as a materials cost, while European respondents said that the cost of materials represented almost 30% of all costs in 2007. SMEs in developing countries in Asia, particularly in China, Vietnam and Indonesia, were more likely to use more raw material inputs.

**Figure 4.**
**Materials costs as a percentage of total costs (2010)**

*Q: What was the percentage of materials cost in the total cost of your company in 2010?*

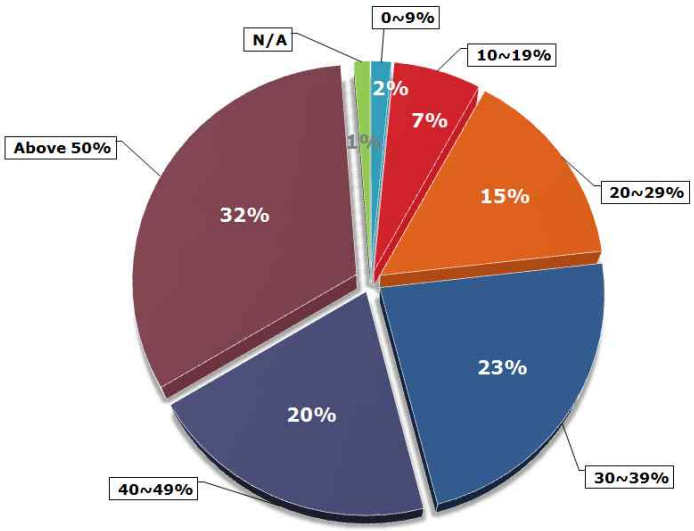



Figure 4 shows that the distribution of materials cost as a percentage of a companies' total cost in 2010 consisted of "materials costs" in Asia and Europe.

Asian companies used 49% of their total cost (gross production value) as materials cost, while in European companies it represented 33% of the total costs.

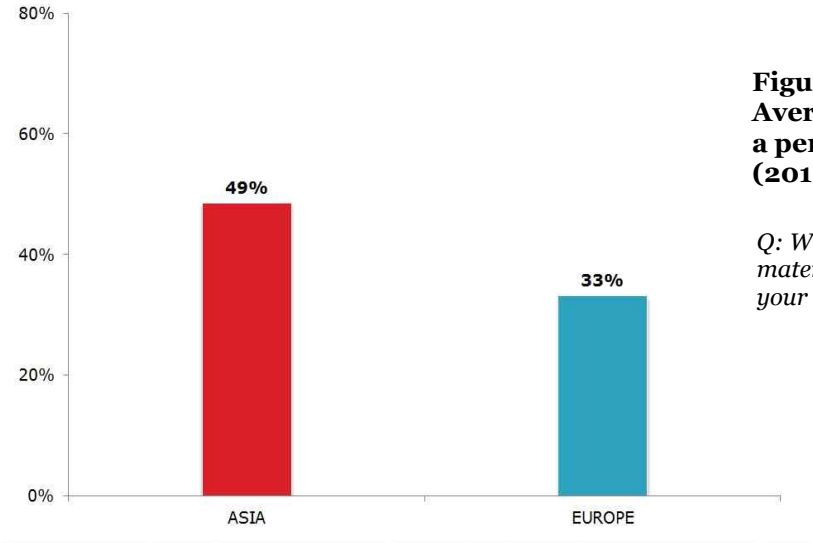
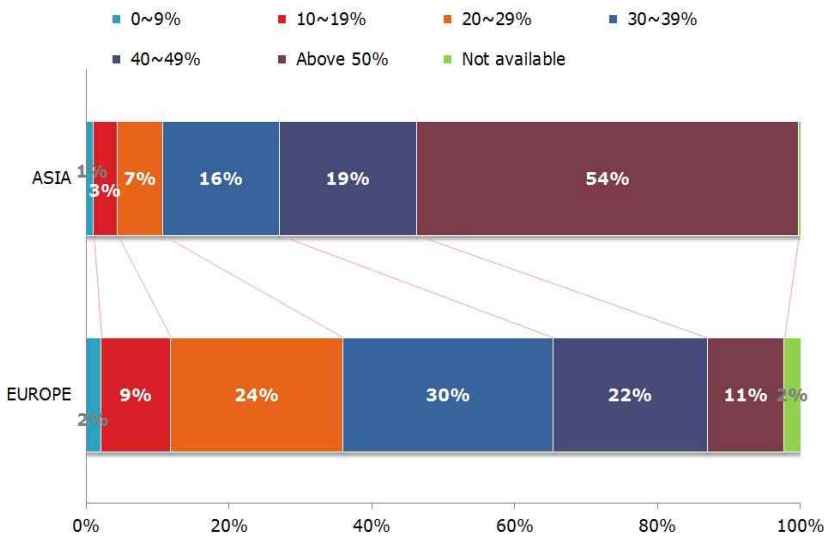



**Figure 5.**
**Average materials costs as a percentage of total costs (2010) - by region**

*Q: What was the percentage of materials cost in the total cost of your company in 2010?*

**Figure 6.**
**Materials costs as a percentage of total costs (2010) - by region**

*Q: What was the percentage of materials cost in the total cost of your company in 2010?*



# *Eco-Innovation Action by SMEs : 30% in Asia, 57% in Europe*

In the past 3 years, most European SMEs have taken measures for supply chain improvement (79%), introduced or developed more efficient technologies (78%), begun recycling materials (raw or pre-manufactured) (68%)and introduced or replaced old equipment with highly efficiency equipment or devices (64%).

**Figure 7. Eco-innovation activities taken by SMEs to reduce input costs (2007-2010)**

*Q: Were there any eco-innovation activities to reduce materials cost in the past 3 years?*

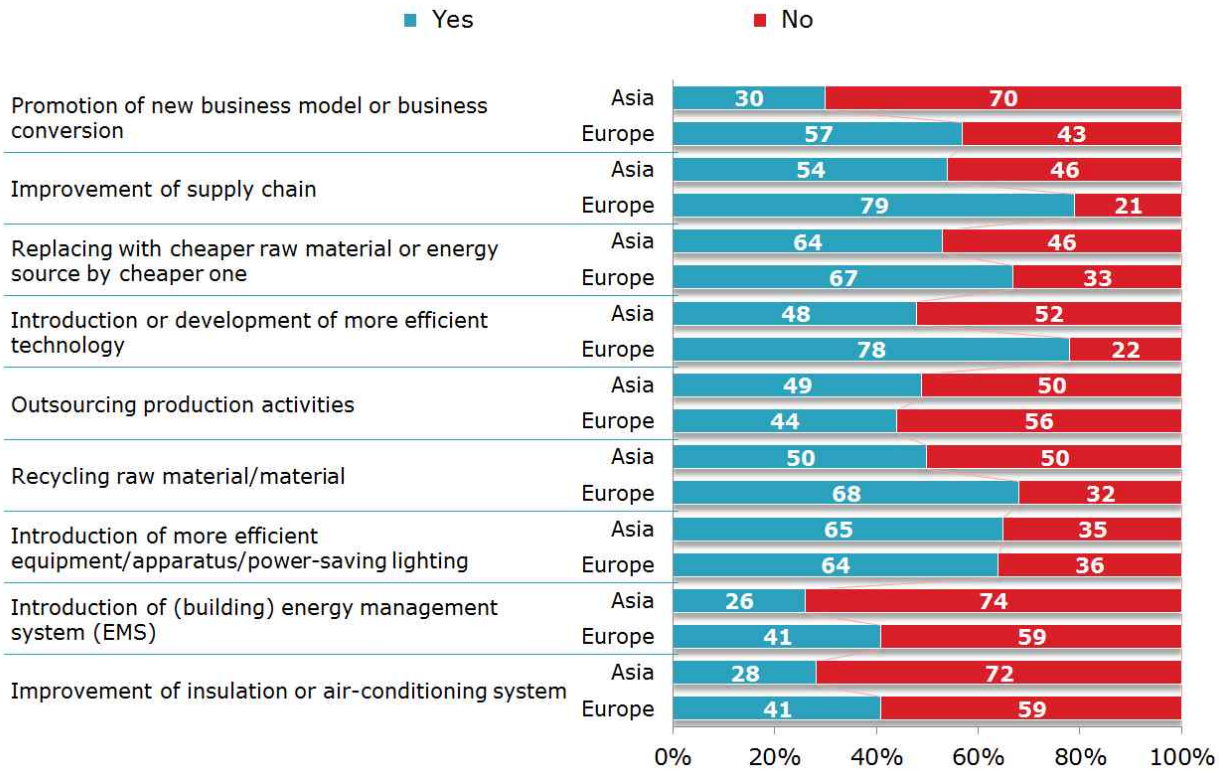
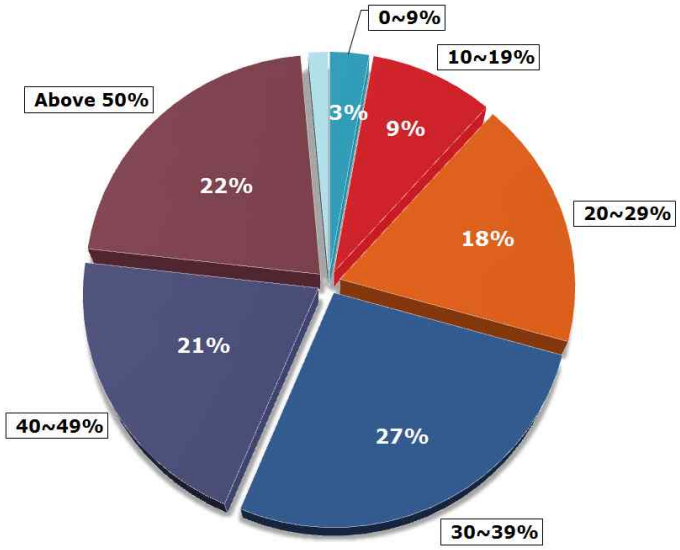


**Figure 8. Materials cost as a percentage of a companies' total cost (2007)**

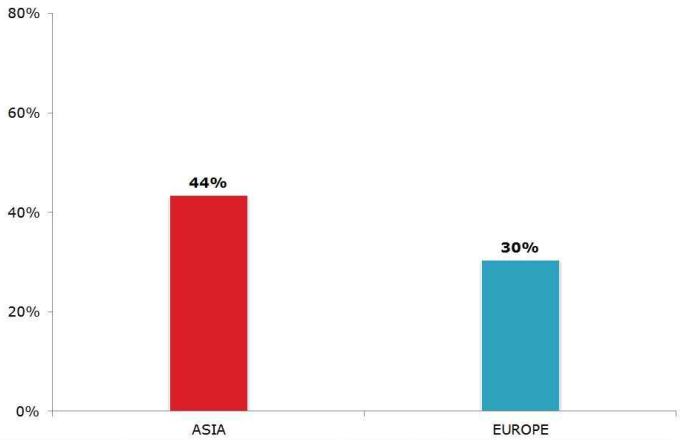



*Q: What was the percentage of materials cost in the total cost of your company in 2007?*

Figure 8 shows the distribution of materials cost as a percentage of a company's total cost in 2007. This survey item investigates the actual status of the percentage of raw materials cost in the total cost of a company. Materials costs as a percentage of total cost means [materials cost / total cost × 100].

On average, Asian companies used 44% of their total cost (gross production value) as a materials cost, while European respondents said that the cost of materials represented almost 30% of all costs in 2007. Many SMEs from developing countries in Asia, especially China, Vietnam and Indonesia, were more likely to require higher input of raw materials.

**Figure 9. Average materials cost as a percentage of a companies' total cost (2007) - by region**



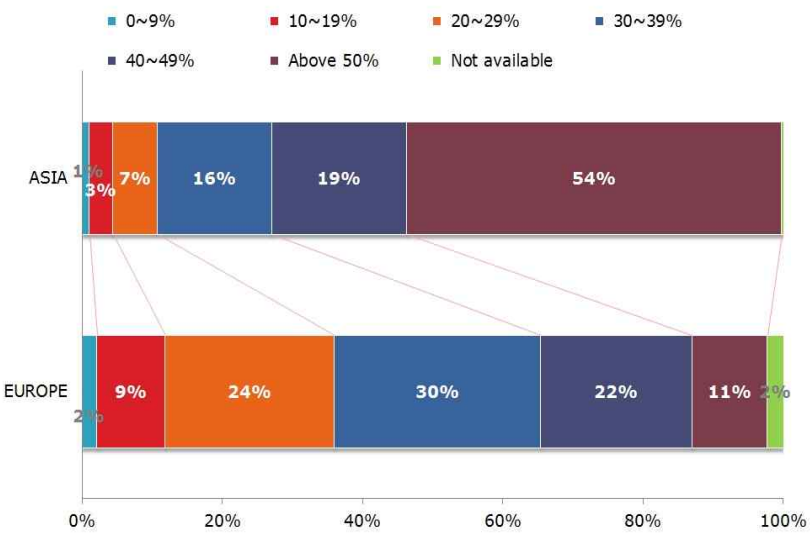
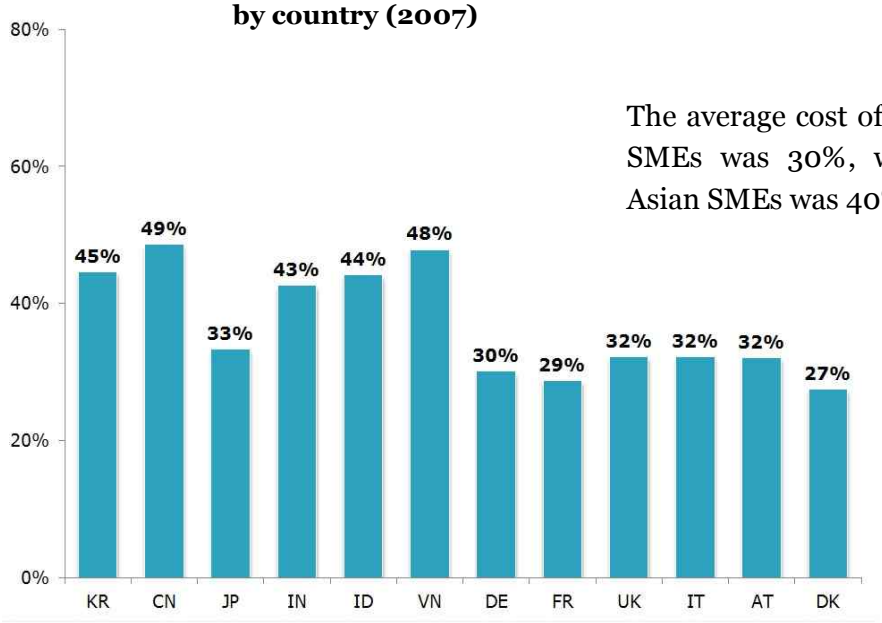




**Figure 10. Materials cost as a percentage of a companies' total cost (2007) - by region**

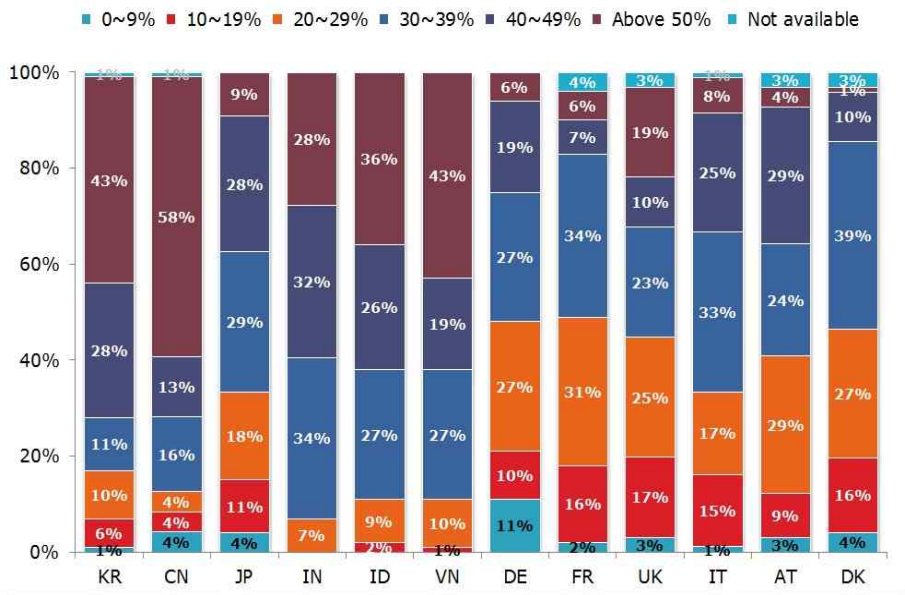
**Figure 11. Materials cost as a percentage of a companies' total cost, - by country (2007)**




The average cost of raw materials in European SMEs was 30%, while the average cost for Asian SMEs was 40% (excluding Japan).

*Q: What was the percentage of materials cost in the total cost of your company in 2007?*

**Figure 12. Materials cost as a percentage of a companies' total cost - by country (2007)**




Regarding the changes in materials cost, there was a 3% increase (from 30% in 2007 to 33% in 2010) in Europe, and a 5% increase (from 44% in 2007 to 49% in 2010) in Asia. Materials costs have increased more significantly in Asia.

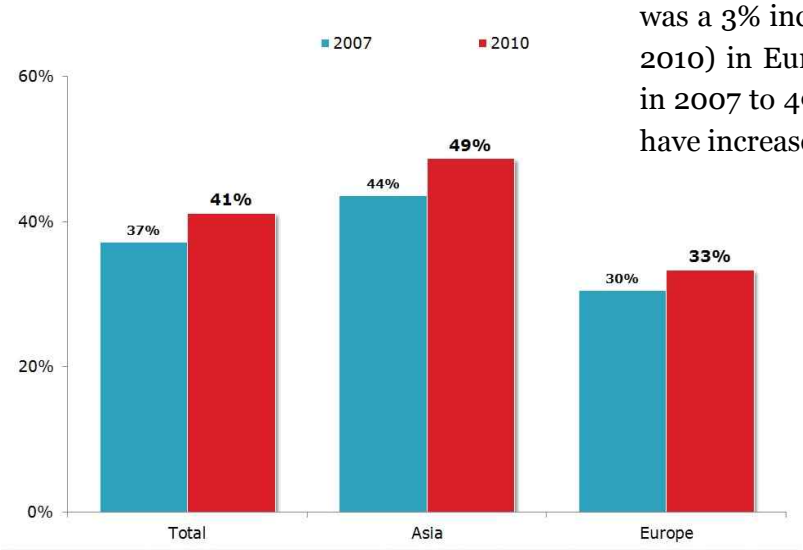
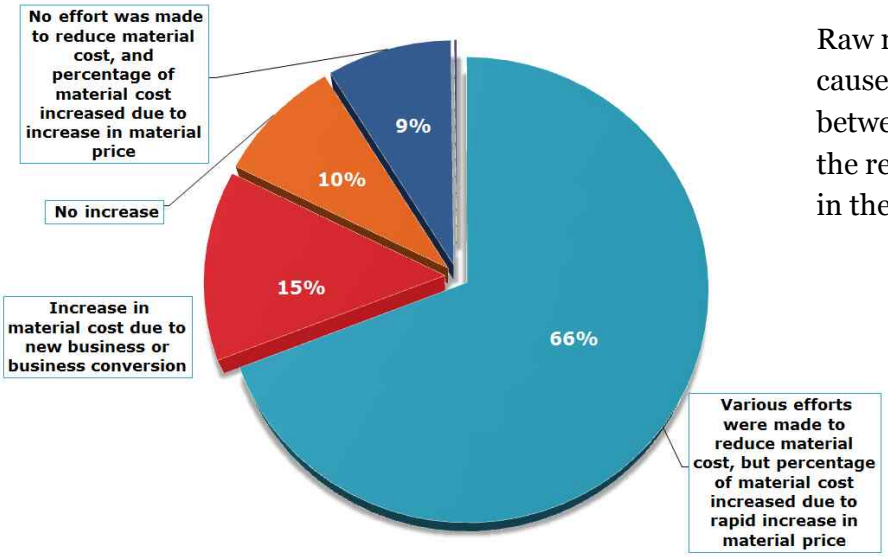



**Figure 13. Changes in materials cost between 2007 and 2010**

*Q: What was the percentage of materials cost in the total cost of your company in 2007 and 2010?*

**Figure 14. Cause of higher materials cost**

*Q: If the percentage of the materials cost of your company increased, what was the cause for the increase?*




Raw materials cost was a main cause of the total cost difference between 2007 and 2010. 66% of the respondents indicated this in the survey.

**Figure 15. Cause of increase in materials cost - by region**

*Q: If the percentage of materials cost of your company increased, what is the cause for the increase?*

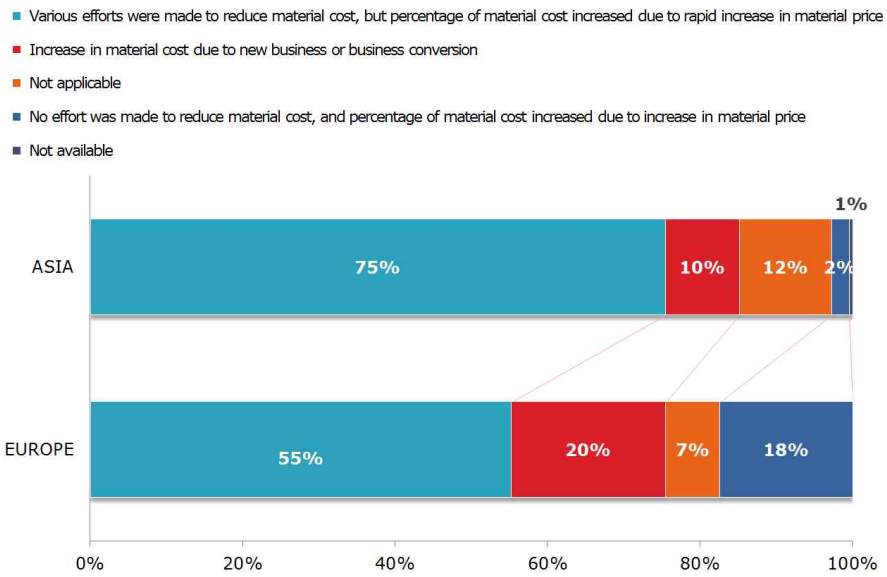
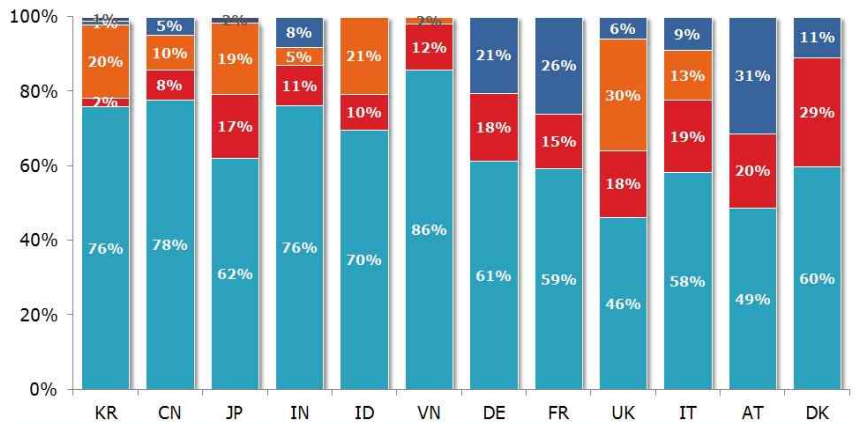


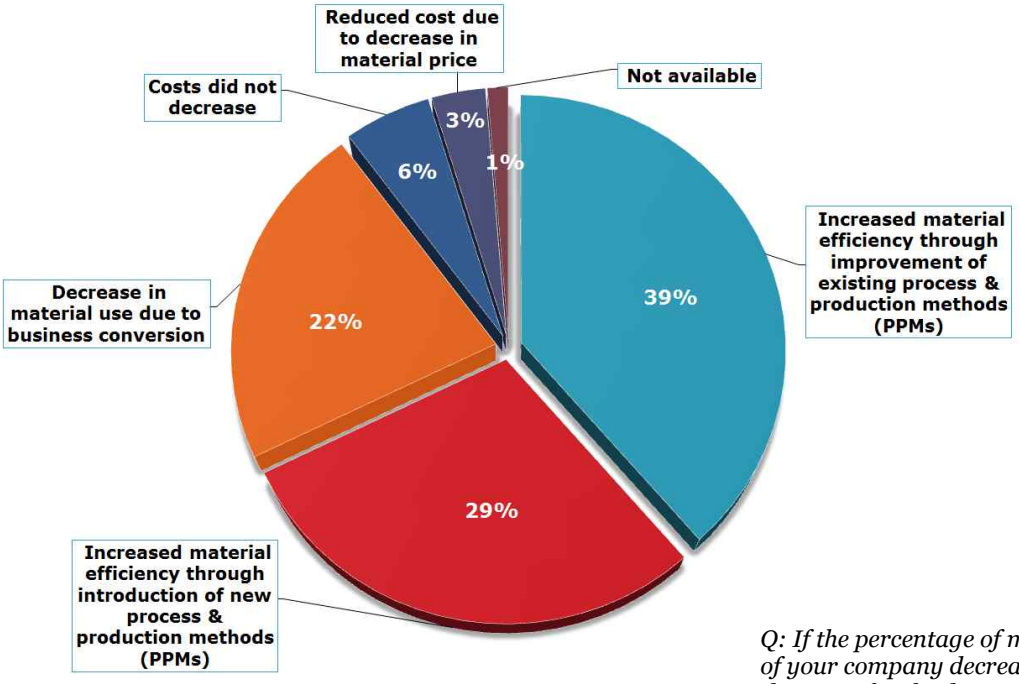

**Figure 16. Cause of increase in materials cost - by country**




Seventy-five percent (75%) of Asian SMEs attributed the rise in overall materials cost to raw material price increases, whereas 20% of European SMEs indicated new business as the main reason for increasing materials cost.

Sixty-eight percent (68%) of the respondents indicated that they have reduced materials cost by increasing efficiency through an improvement or innovation via strategic business management.

**Figure 17. Cause of decrease in materials cost**




*Q: If the percentage of materials cost of your company decreased, what is the cause for the decrease?*

On the other hand, roughly a third of Asian (34%) and a quarter of European (25%) companies answered that improvement introduction of new process and production methods (PPMs) to increase efficiency. Regarding business conversion, Europe accounted for 30% and Asia for 14%.

**Figure 18. Cause of decrease in materials cost - by region**

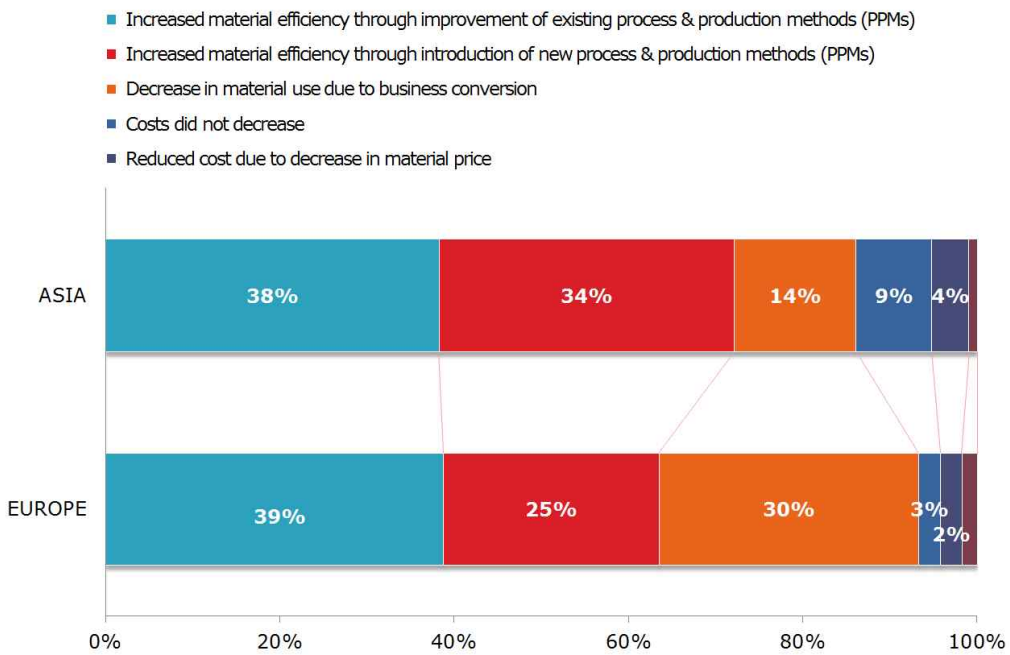
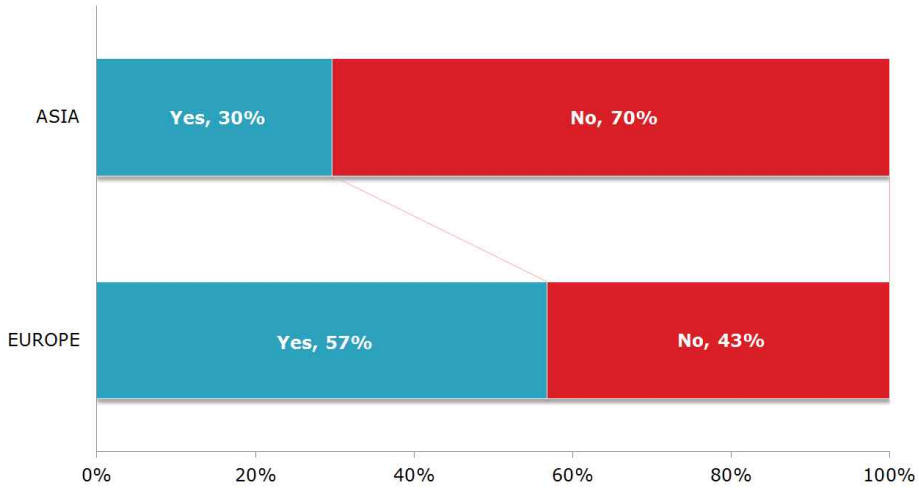


**Figure 19. Promotion of new business model or business conversion - by region**




*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Promotion of new business model or business conversion)*

Regarding efforts to reduce raw materials cost and energy cost, 44% of the respondents indicated there have been ongoing activities. Among them, Denmark was the highest with 72%, the UK with 65%, and Austria with 57%.

**Figure 20. Promotion of new business model or business conversion - by country**

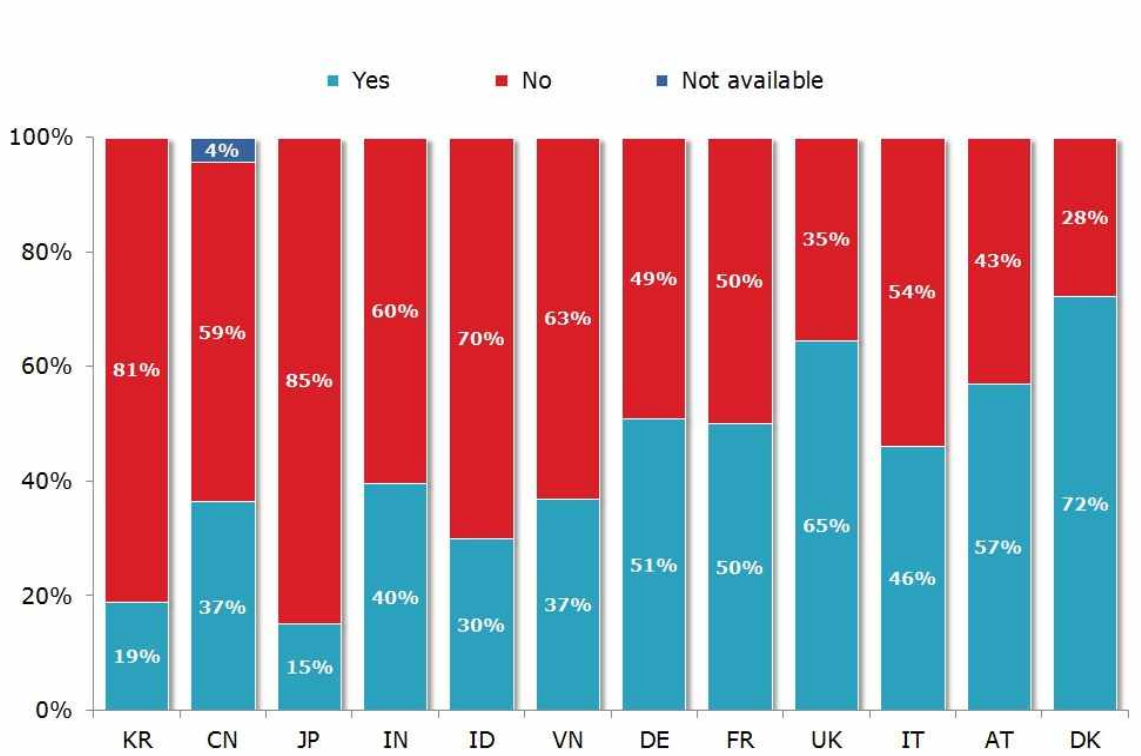
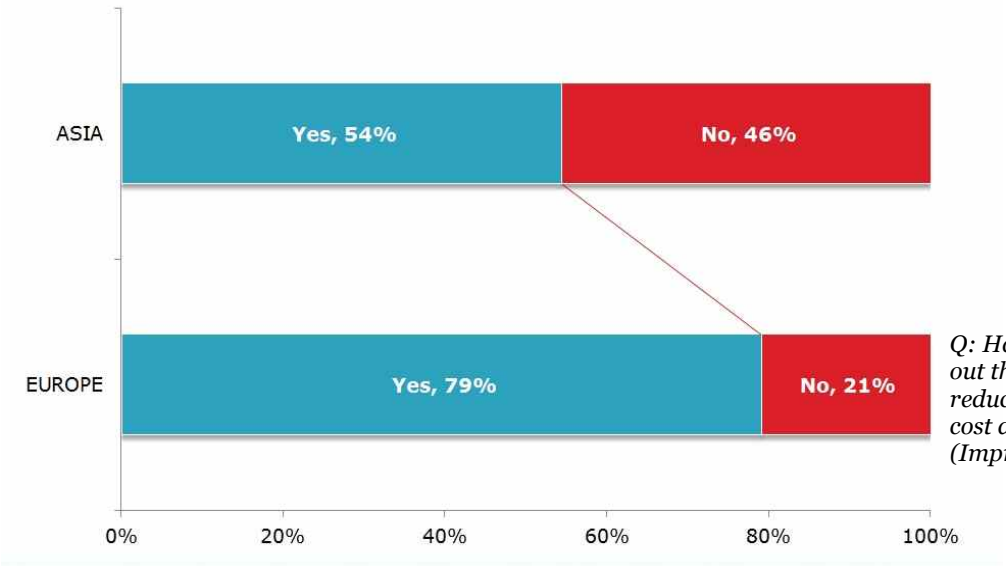


**Figure 21. Improvement of supply chain - by region**




*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Improvement of supply chain)*

Another common avenue for eco-innovation is through improvements to a company's supply chain, or by changing subcontractors or vendors in order to decrease raw materials and energy costs. Of those surveyed, 67% indicated that they had pursued one or more of these methods of eco-innovation.

This was more common in Europe than Asia; 79% of businesses in Europe responded affirmatively, with only 54% of Asian respondents doing the same. In both South Korea and Vietnam, only 40% of the respondents had carried out improvements in their supply chain. This may indicate that it is relatively difficult for SMEs to change subcontractors or vendor in those countries.

**Figure 22. Improvement of supply chain - by country**

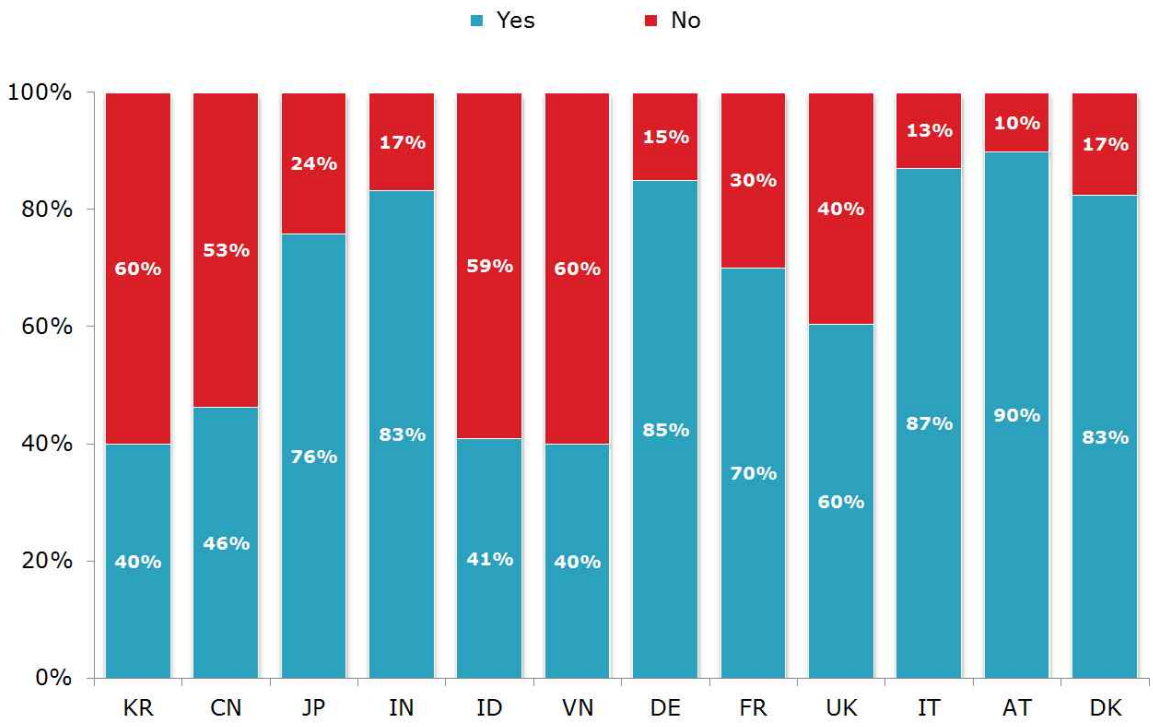
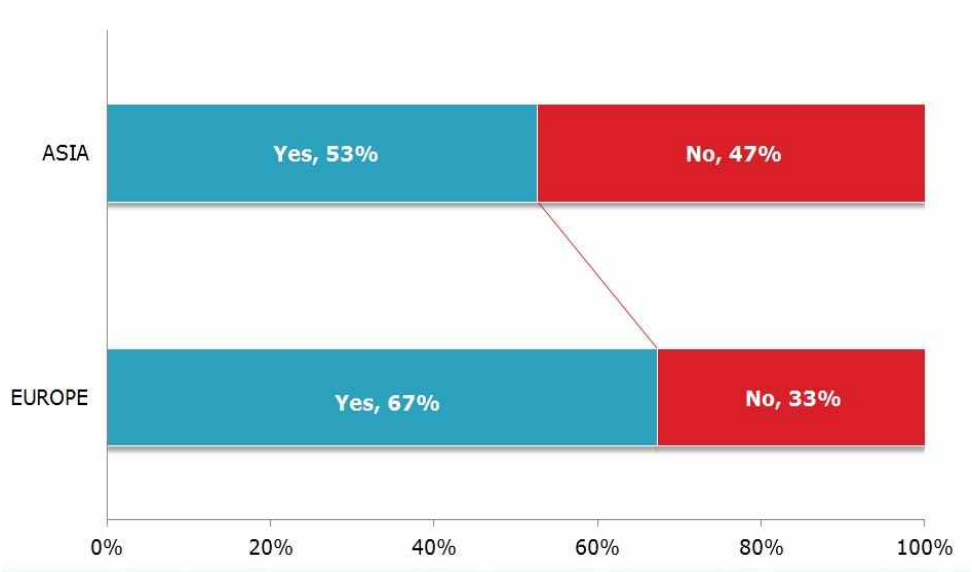


**Figure 23. Replacing expensive raw material or energy source with cheaper one - by region**

*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Replacing one raw material or energy source for a cheaper one.)*




The cost of using raw materials for production of goods or provision of energy can be burdensome. When surveyed, 60% of European managers and 53% of Asian managers at SMEs responded that they had replaced their more expensive raw materials with a cheaper material, or alternative energy source. This difference may be attributed to the difference in supply of natural resources in Europe versus Asia; Asian SMEs have relatively easier and cheaper access to raw materials than their European counterparts.

**Figure 24. Firms replacing expensive raw materials or energy sources with cheaper ones - by country**

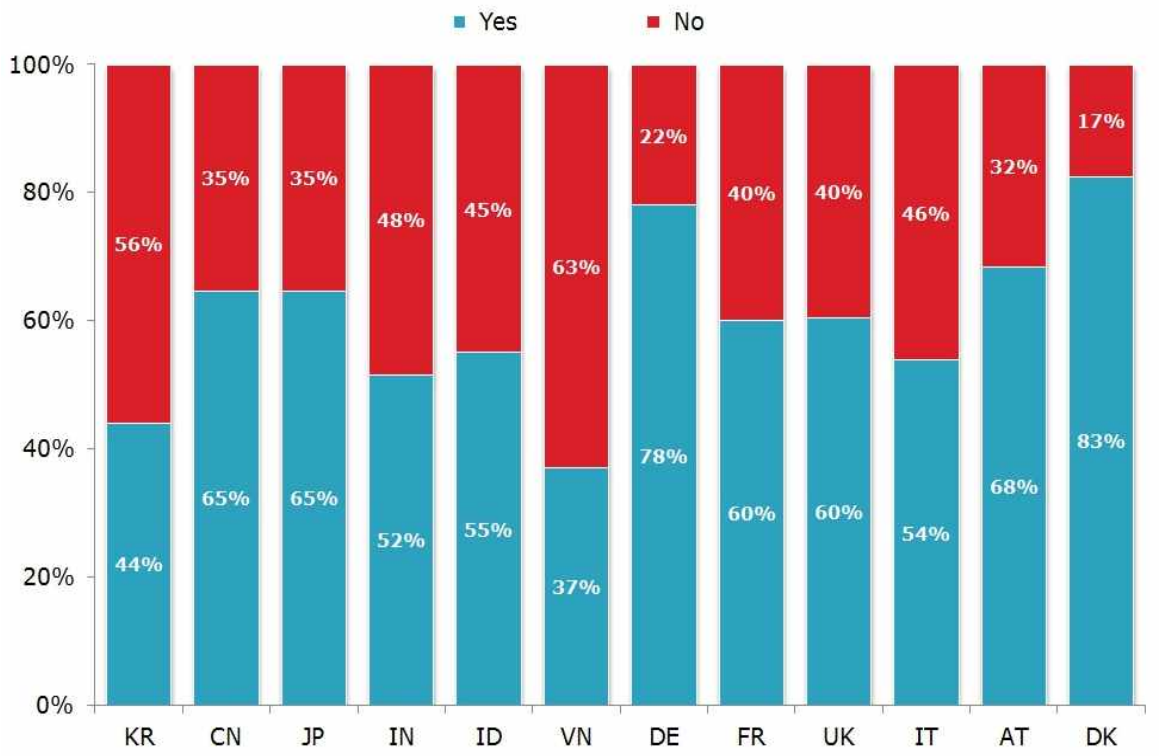
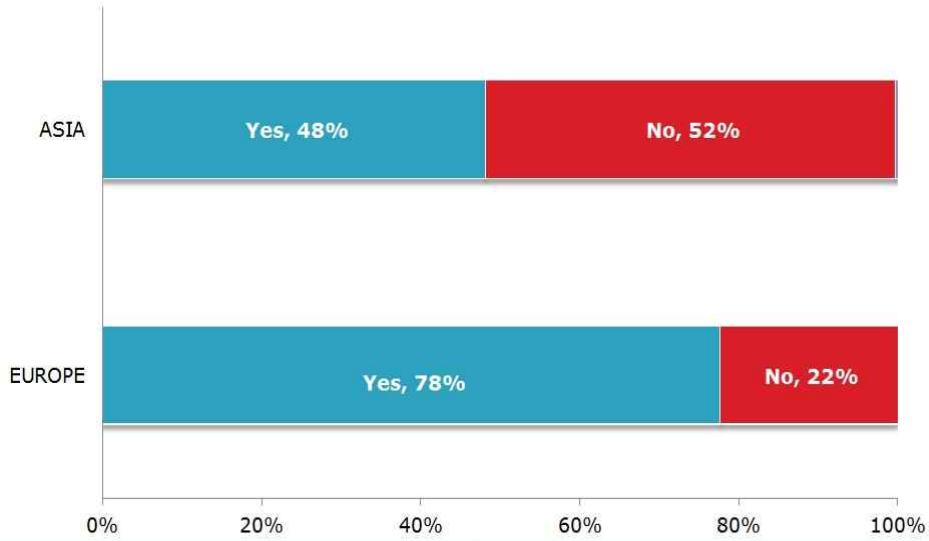


**Figure 25. Introduction or development of more efficient technologies - by region**




*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Introduction or development of more efficient technology)*

When asked if they had introduced or developed efficient technology in order to decrease raw material and energy cost, 63% of the respondents indicated "Yes."

In Europe, 78% of the SMEs had already introduced and developed efficient technology whereas only 48% of SMEs in Asia had done similarly.

**Figure 26. Introduction or development of more efficient technologies - by country**

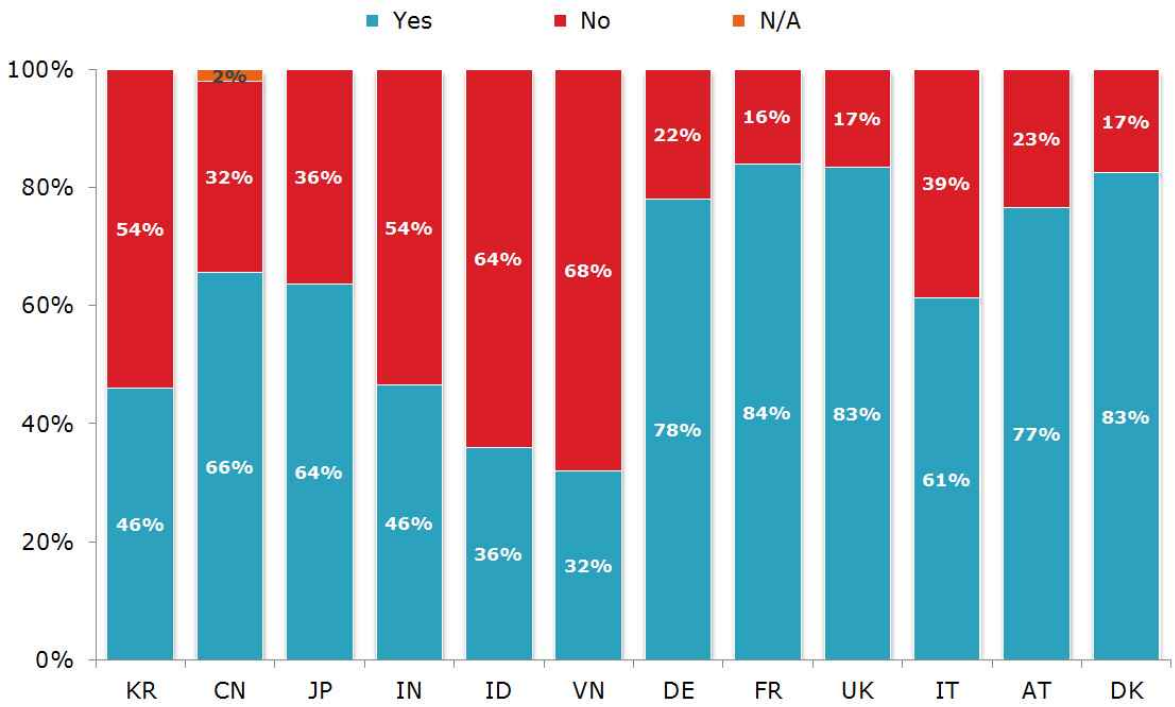
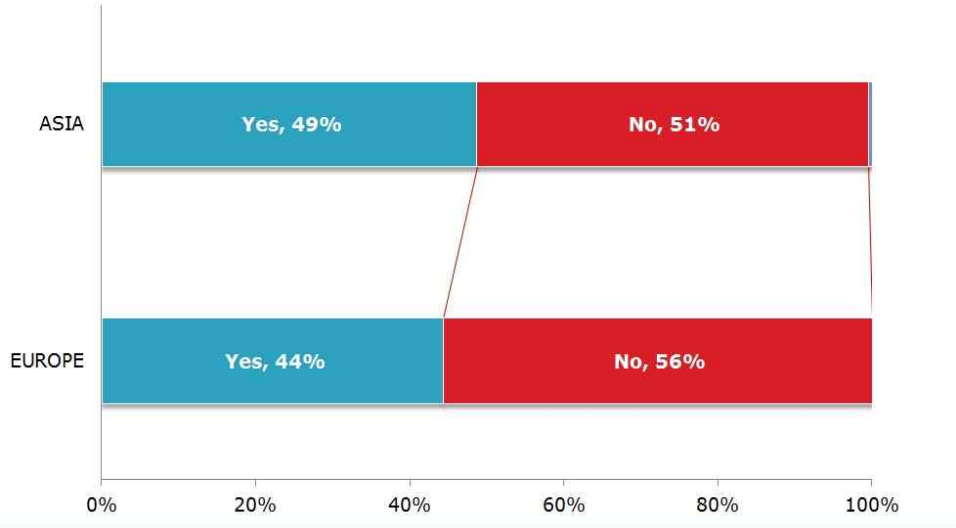


**Figure 27. Outsourcing production activities - by region**

*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Outsourcing production activities)*




Regarding outsourcing parts of production in order to decrease raw materials and energy cost, when asked if they had done so 47% of the respondents indicated "Yes."

By region, there was little difference between Asia and Europe.

When surveyed, 59% of the respondents indicated "Yes." By region, Europe reported 68% and Asia 50%.

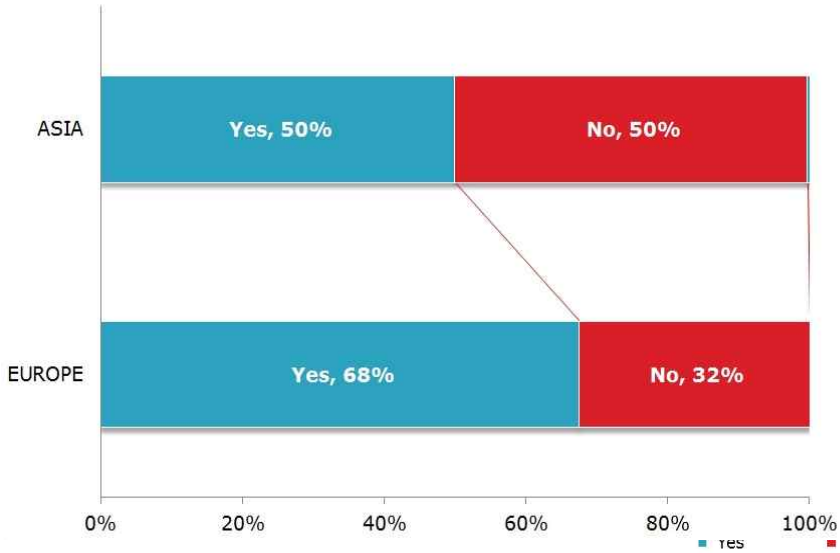



**Figure 28. Recycling of raw materials - by region**

*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Recycling raw material)*

**Figure 29. Recycling of raw materials - by country**

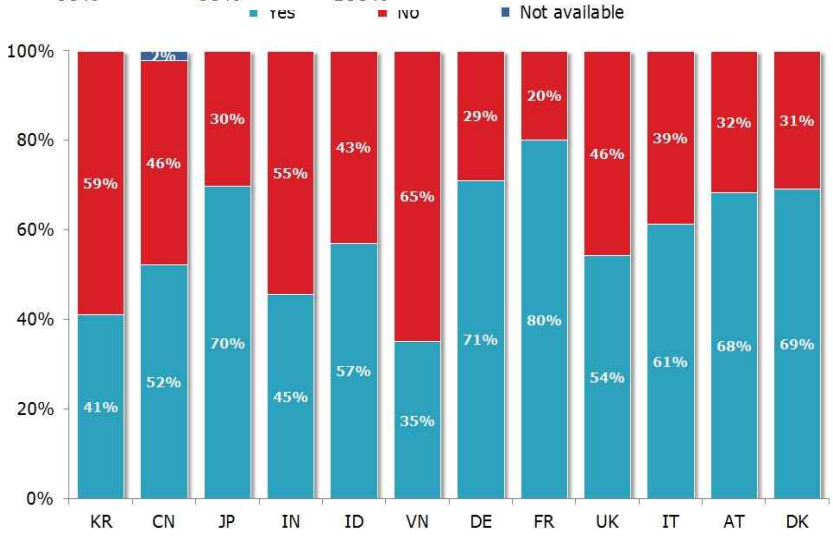
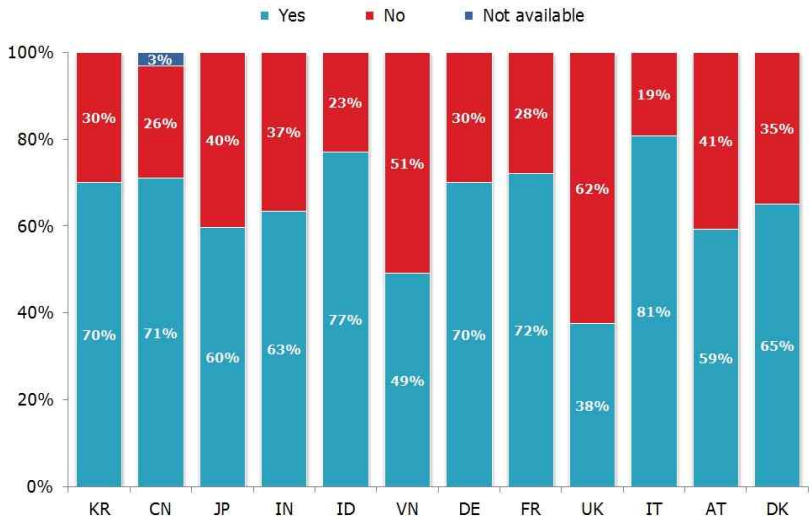



**Figure 30. Introduction of more efficient equipment / apparatus / lighting - by region**

*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Introduction more efficient equipment/apparatus/power-saving lighting)*

64% of respondents in the survey indicated that they had introduced highly-efficient equipment and/or apparatuses, or power-saving lighting in order to decrease energy costs. By region, there was little difference between Asia (65%) and Europe (64%).

**Figure 31. Introduction of more efficient equipment / apparatus / lighting - by country**



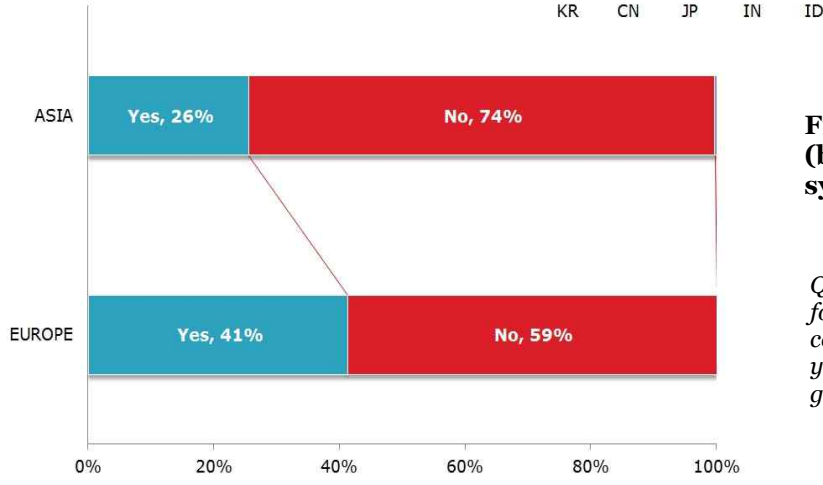
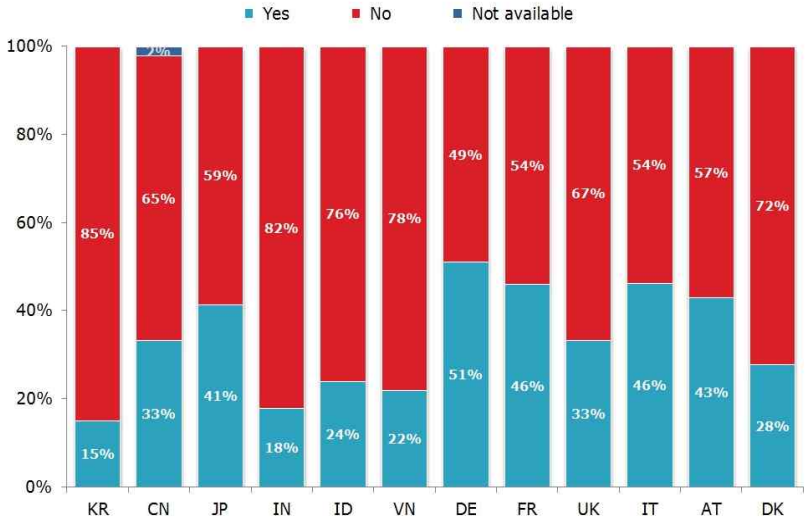




**Figure 32. Introduction of (building) energy management system (EMS) - by region**

*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Introduction of (building) energy management system (EMS))*

Energy costs can also be controlled by updating inefficient buildings. Overall, 34% of surveyed managers reported that they had developed a building energy management system to reduce raw materials input costs. By region, Europe (41%) was more attentive than Asia (26%) to making an effective building energy management system.

**Figure 33. Introduction (building) energy management system (EMS) - by country**




In addition to poorly-insulated or otherwise unkempt buildings, improper air-conditioning systems can be expensive and wasteful. Only 34% of SMEs surveyed responded that they had improved their systems to reduce costs.

Although there was a significant difference regionally, still only 41% of European firms reported using this strategy, compared to Asia's 28%.

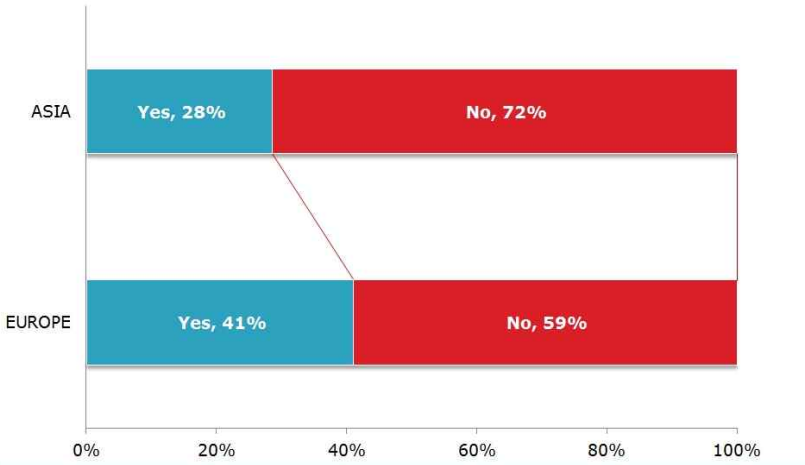
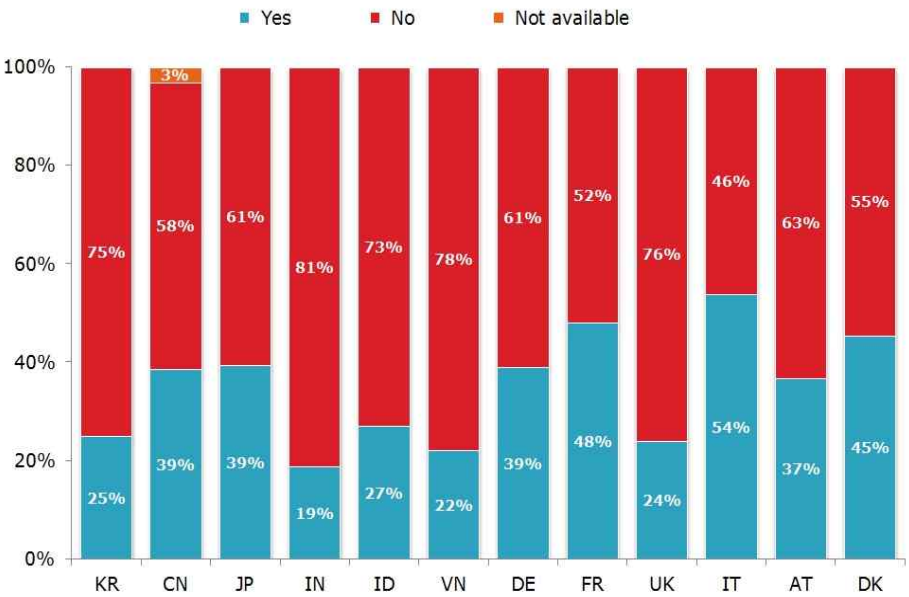



**Figure 34. Improvement of insulation or air-conditioning system - by region**

*Q: Has your company carried out the following activities to reduce materials cost or energy cost during the past 3 years? (Improvement of insulation or air-conditioning system)*

**Figure 35. Improvement of insulation or air-conditioning system - by region**



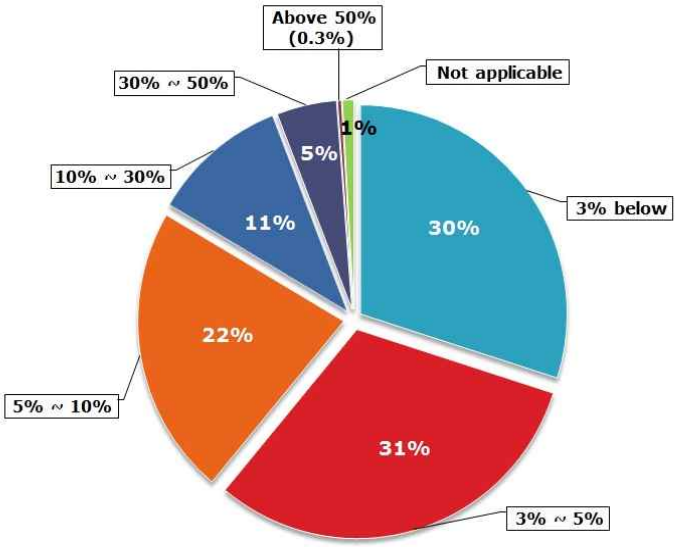


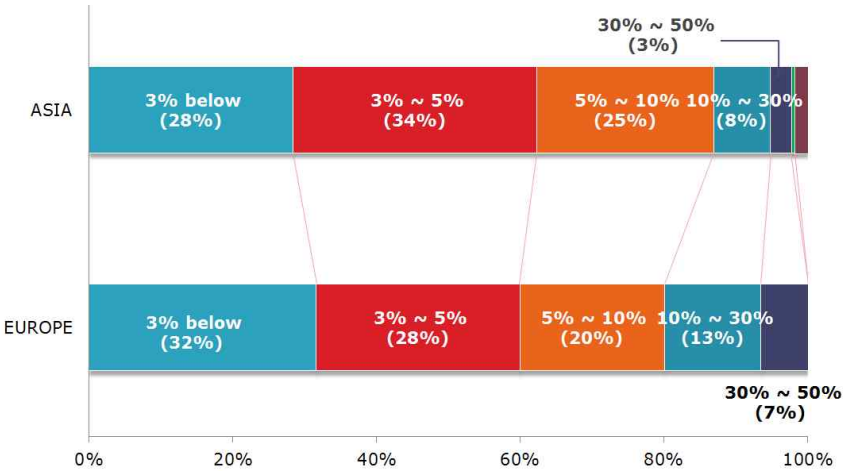

**Figure 36.**
**Share of investment related to eco-innovation**

*Q: What percentage of total investment cost was used for reduction of materials cost and energy cost during the past 3 years?*

On average Asian and European SMEs reported having spent only 5% of their total investment cost on eco-innovation projects and strategies.

28% of Asian SMEs and 32% of the European SMEs have made less than 3% of their total investments in eco-innovation.

**Figure 37.**
**Share of investment related to eco-innovation - by region**



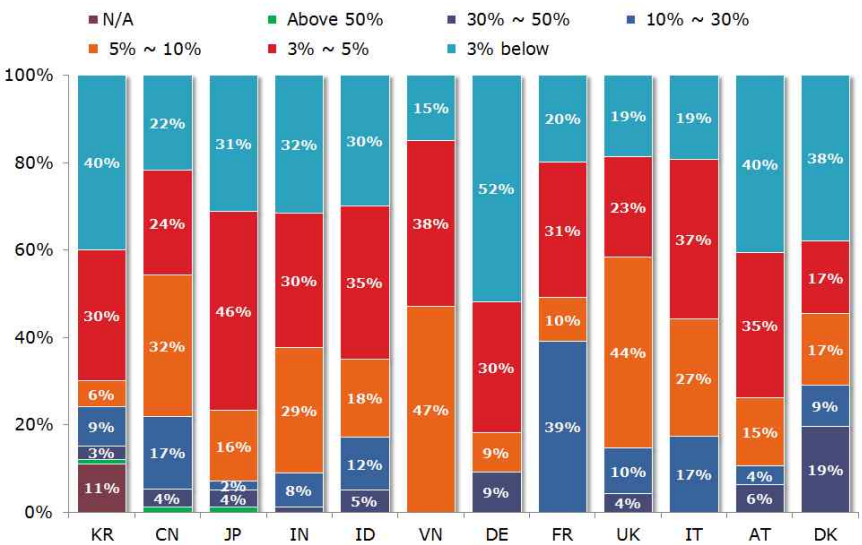
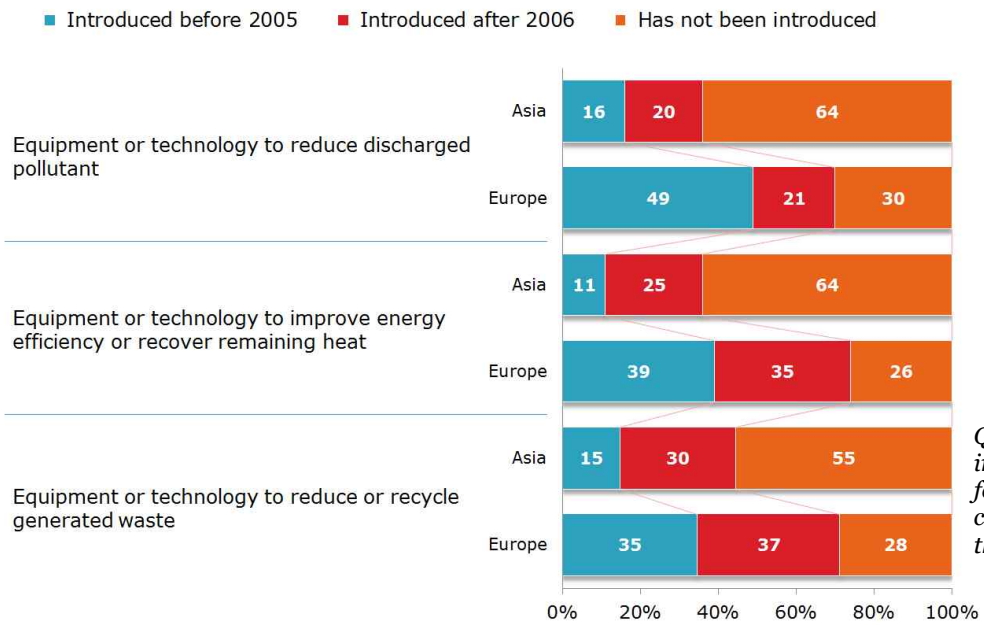




**Figure 38.**
**Share of investment related to Eco-Innovation - by country**

# *Vast Improvement Potential in Asia on Clean Technology*

Compared to European SMEs which have widely introduced environmentally friendly technologies or equipment in their production processes, Asian companies have a much lower level of use of clean technologies. While European SMEs have introduced equipment or technology for the reduction of pollutant discharge (70%), for the improvement of energy efficiency or heat recovery (74%), and for the reduction or recycling of waste (72%), Asian companies indicated only 36%, 36%, and 35% respectively.

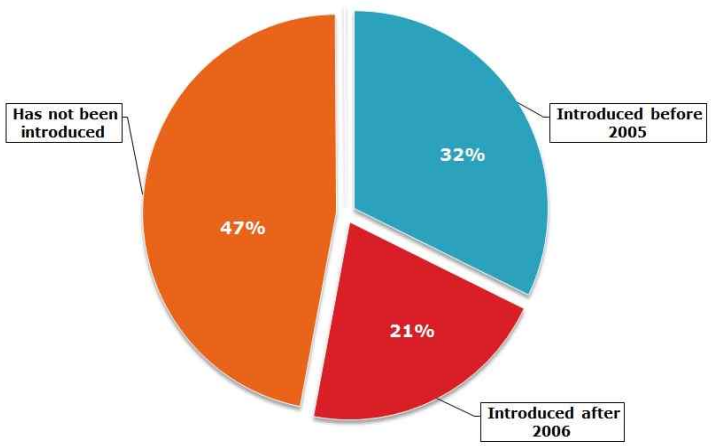
**Figure 39. Introduction of eco-friendly equipment or clean production technology in the past 5 years**




*Q: What percentage of total investment cost was used for reduction of materials cost and energy cost during the past 5 years?*

**Figure 40. Introduction of eco-friendly equipment or clean production technology**

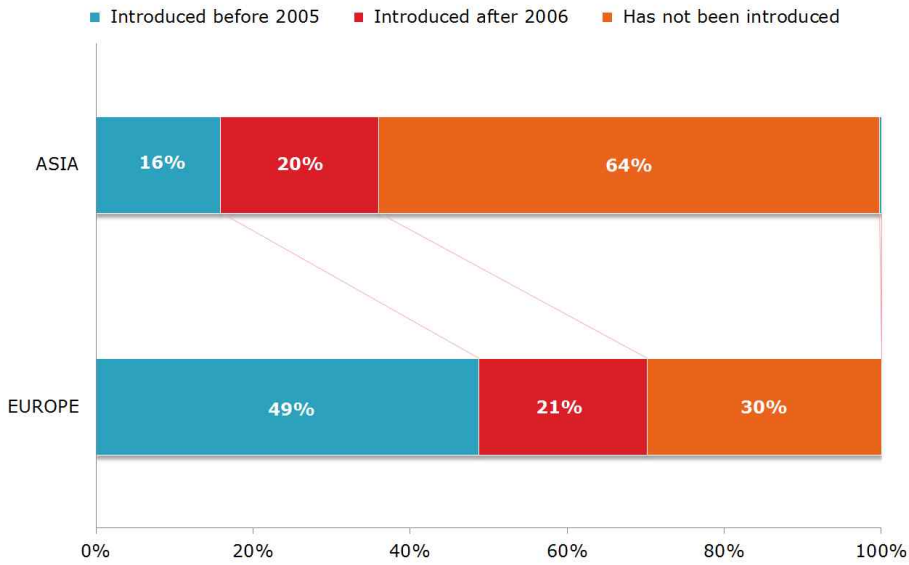
*Q: Has your company introduced the following equipment or technology for improving the environmentally-friendliness of its manufacturing or processing in the past? (Equipment or technology for reducing discharged pollutants)*



Companies in Europe who were surveyed had introduced significantly more eco-friendly equipment and/or clean production technology than their counterparts in Asia, with 70% of European companies compared to 36% of Asian companies doing so.

Almost half of the European SMEs (49%) and roughly one in five Asian SMEs (21%) indicated that they had introduced environmentally friendly equipment for reducing discharged pollutants in their company before 2005.

**Figure 41. Introduction of eco-friendly equipment or clean production technology - by region**




*Q: Has your company introduced the following equipment or technology for improving the environmentally-friendliness of its manufacturing or processing in the past? (Equipment or technology to reduce discharged pollutant)*

**Figure 42. Introduction of eco-friendly equipment or clean production technology - by country**

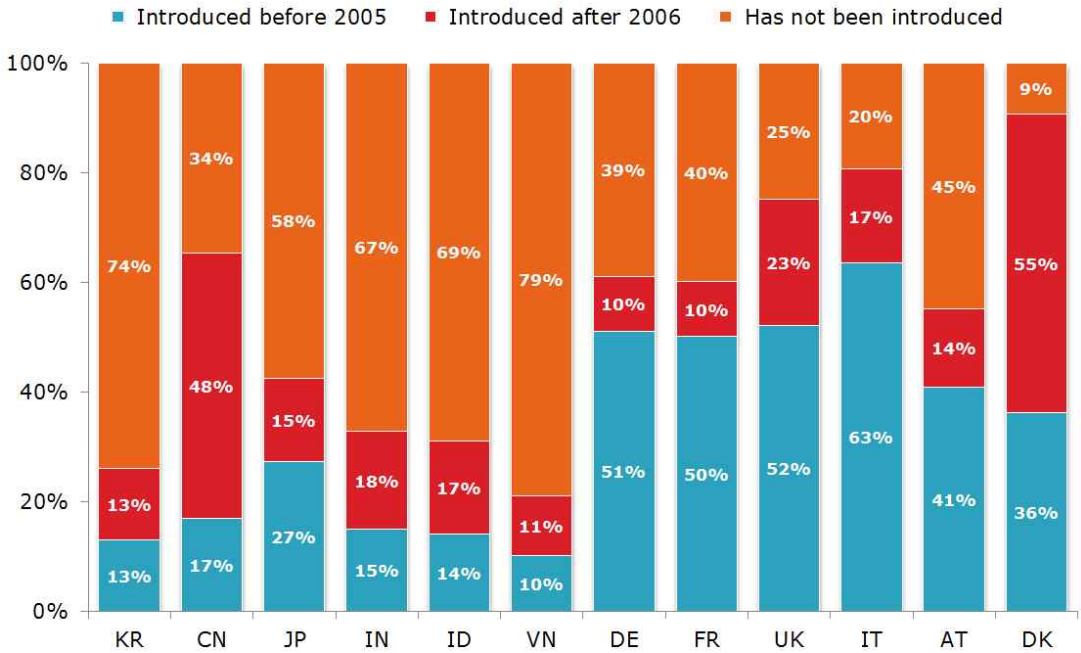
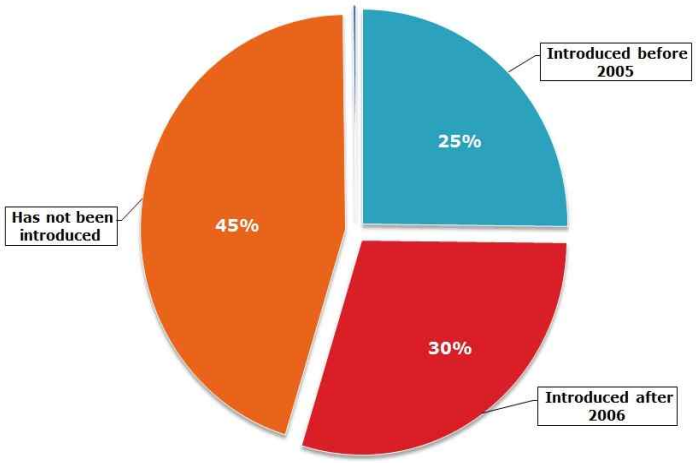


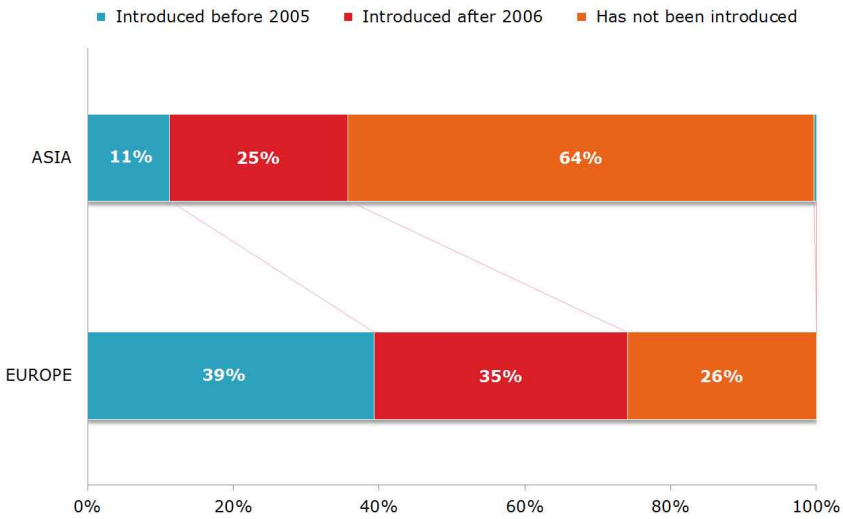
**Figure 43. Equipment or technology for energy efficiency or remaining heat recovery**

*Q: Has your company introduced the following equipment or technology for improving the environmentally-friendliness of its manufacturing or processing in the past? (Equipment or technology for improvement of energy efficiency or collection of remaining heat recovery)*




Fifty-five percent (55%) of respondents indicated that they have introduced equipment or technologies to improve energy efficiency or collect remaining heat. The results showed a positive trend of cooperation on energy efficiency and/or heat collection since 2006 (from 25% to 30%).

**Figure 44. Equipment or technology for energy efficiency or remaining heat recovery - by region**



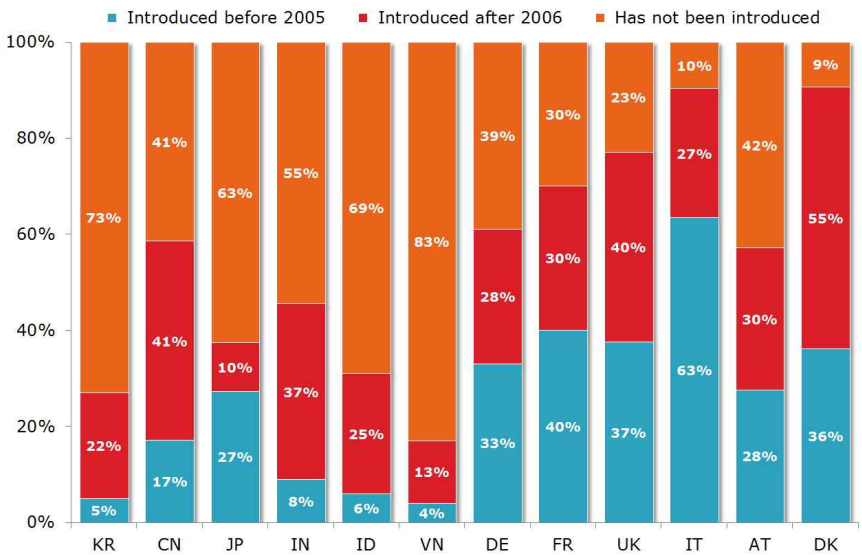




**Figure 45. Equipment or technology for energy efficiency or remaining heat recovery - by country**

Regarding the introduction of equipment or technologies for reducing or recycling waste, 58% of the respondents indicated that they had done so.

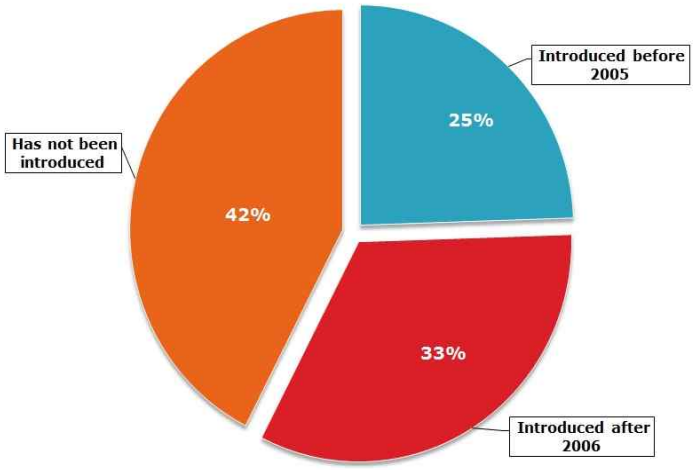



**Figure 45.**
**Equipment or technology for reduction or recycling of generated waste**

*Q: Has your company introduced the following equipment or technology for improving environmentally-friendliness of its manufacturing or processing in the past?*
*(Equipment or technology to reduce or recycle generated waste)*

By region, European SMEs (72%) were significantly more active than Asian SMEs (45%) on the introduction of equipment or technologies for reducing or recycling waste.

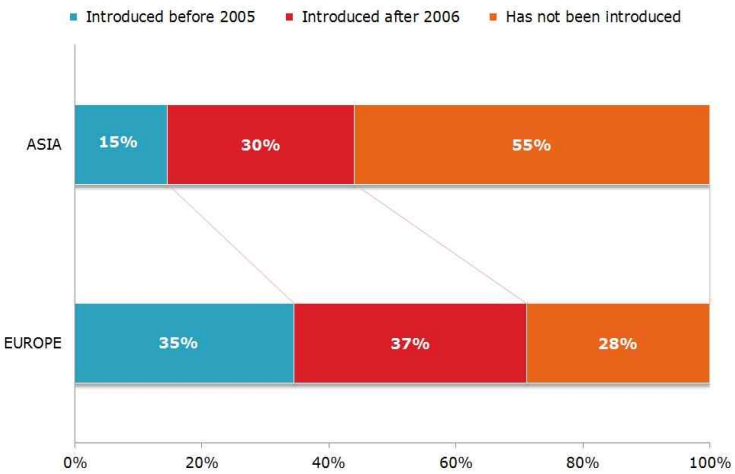



**Figure 46.**
**Equipment or technology for reduction or recycling of generated waste**
**- by region**

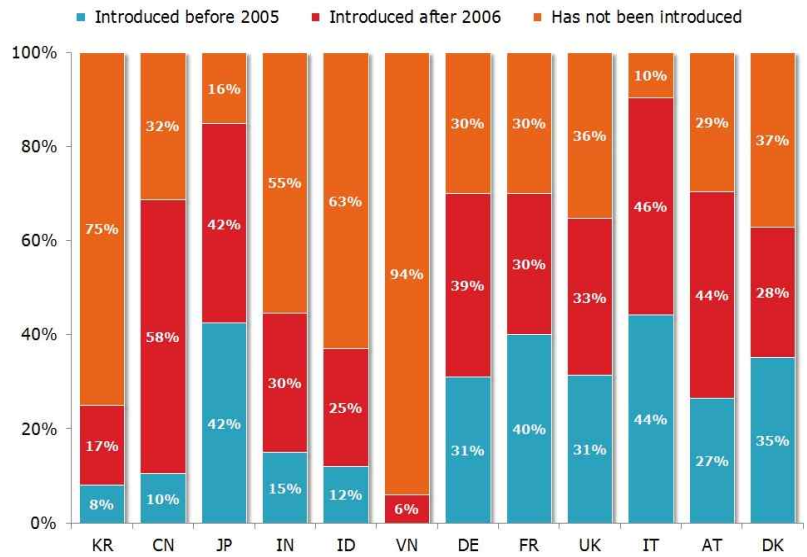



**Figure 47.**
**Equipment or technology for reduction or recycling of generated waste**
**- by region**

# *Chapter I*

# *3. Eco-Innovation for Products and Services*

# *Status of Eco-Innovation for Products and Services*

In general, eco-design is better established, and therefore much more advanced in European SMEs compared to Asian SMEs. However, 35% of Asian companies surveyed signaled that they had planned to introduce eco-design to their products in the near future. As these plans become implemented, the gap between Asian and European SMEs is expected to gradually narrow.

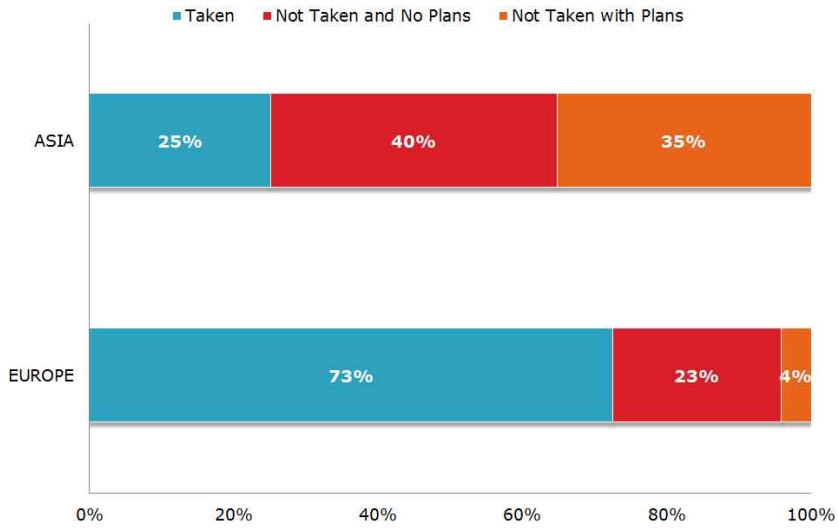



**Figure 48. Introduction of eco-design - by region**

*Has your company taken eco-innovation actions for products and/or services since 2007? (introduced some type of eco-design)*

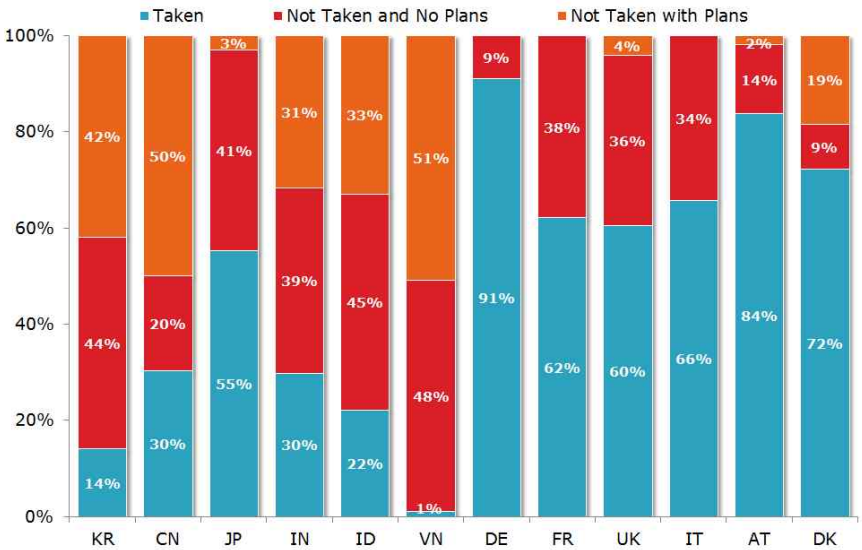



**Figure 49. Introduction of eco-design - by country**

Regarding eco-innovation on products and services, European SMEs have introduced measures on eco-design (73%), the reduction of product packaging (67%) and the certification of environmentally-friendly products (66%).

Asian companies have a much lower level of implementation on products and services. However, Asian SMEs have taken comparatively higher measures on the reduction of product packaging (30%), and energy saving or pollutant emission reduction during product use (28%).

**Figure 50. Eco-innovation actions taken for products and services by SMEs in Asia and Europe (2007-2010)**

*Q: Has your company introduced any of the following activities to manufacture products since 2007?*

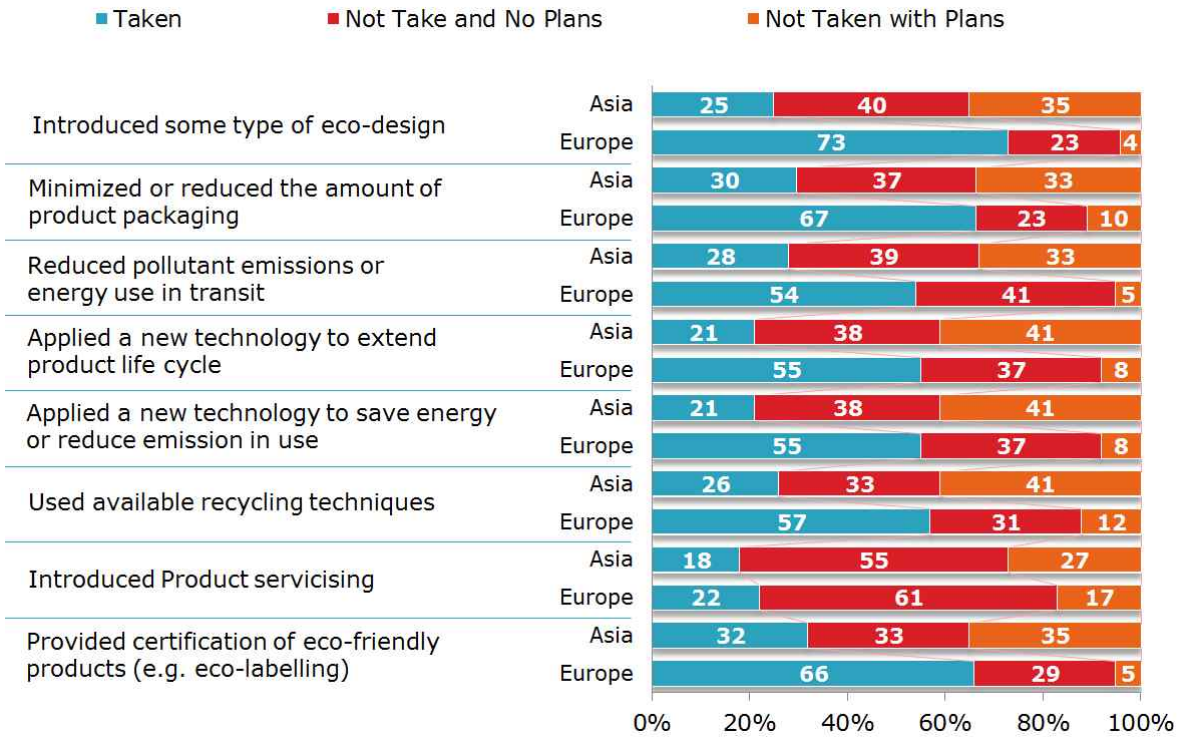
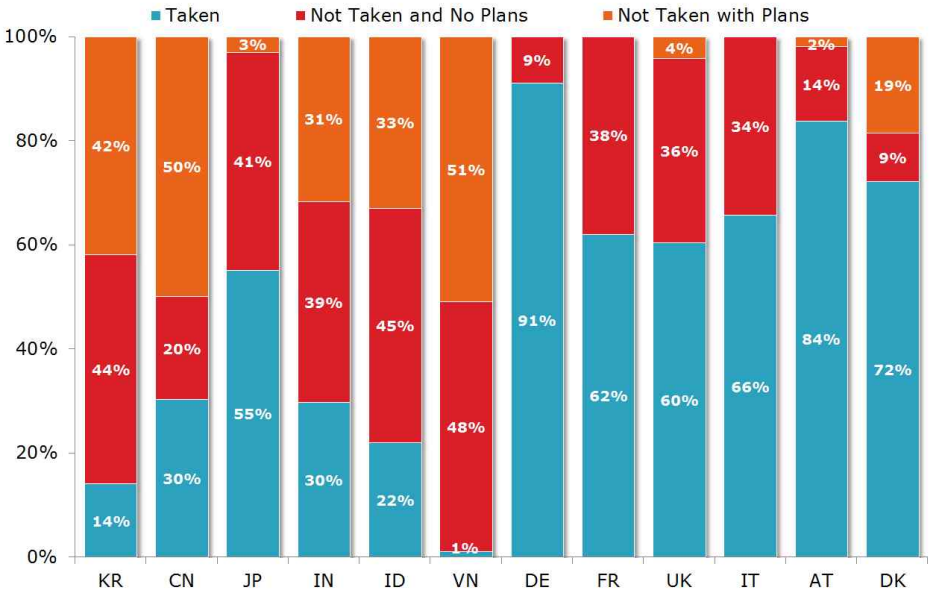



**Figure 51. Introduction of eco-design - by country**

*Q: Has your company taken eco-innovation actions for products and/ or services since 2007? (introduced some type of eco-design)*



Over 48% of respondents had taken actions to minimize product packaging, while 30% of the respondents had no plans to take an eco-friendly approach.

Seventy percent of respondents indicated that they had either already implemented a strategy to reduce product packaging or had planned to in the next two years.

**Figure 52. Packaging reduction**

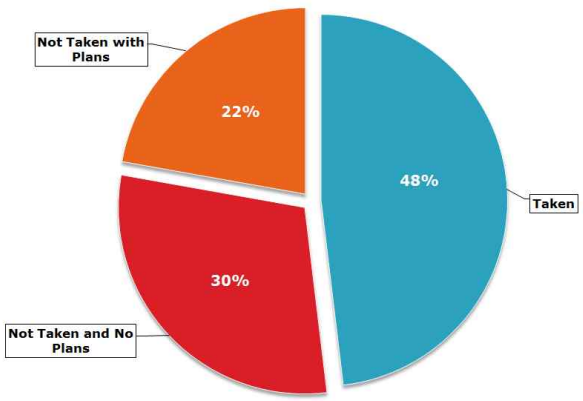
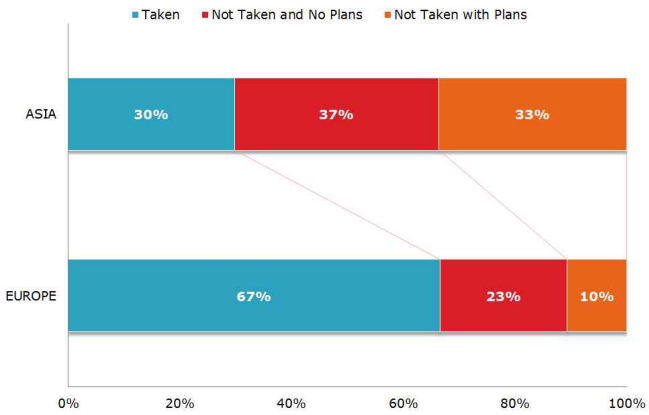
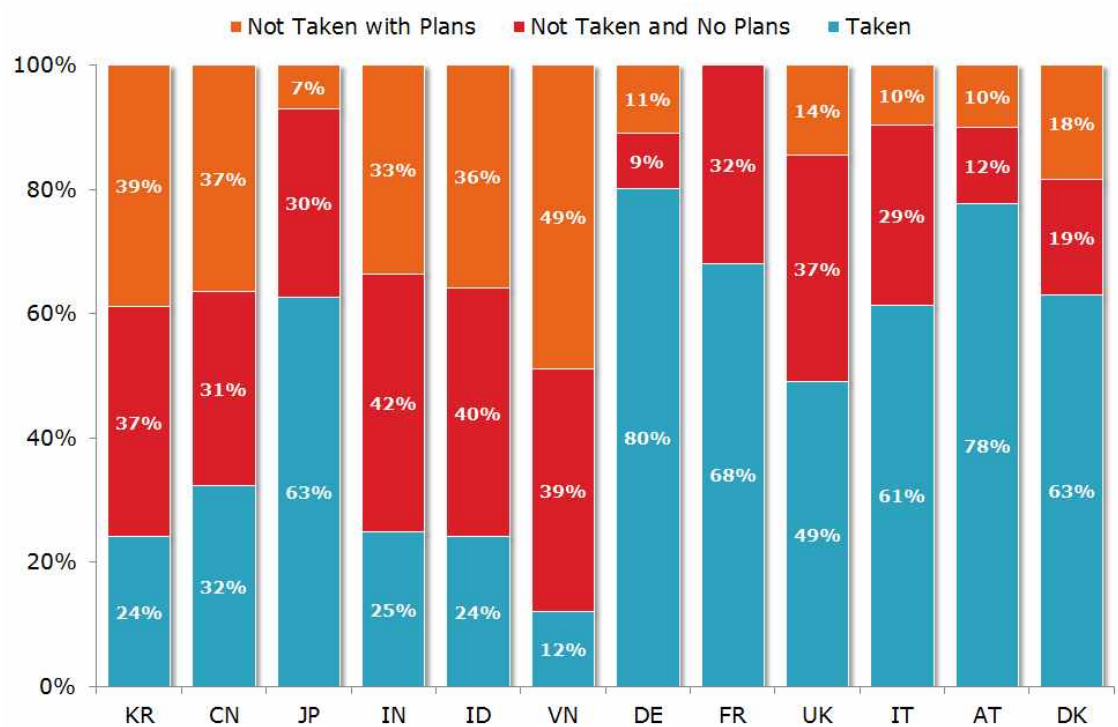



**Figure 53. Packaging reduction - by region**




*Q: Has your company taken eco-innovation actions for products and/or services since 2007? (Minimized or reduced the amount of product packaging)*

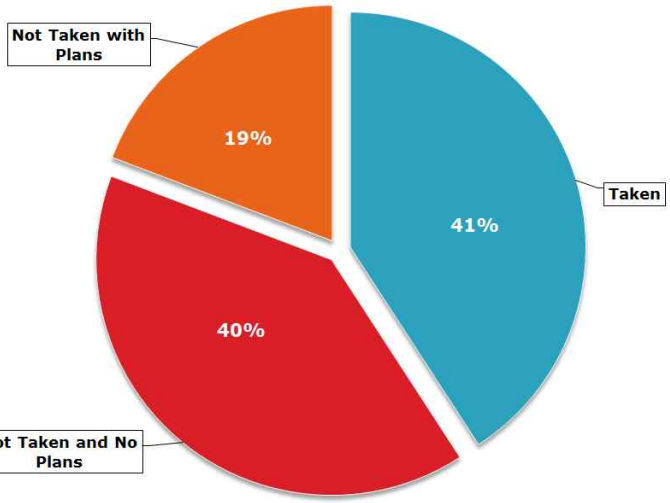
**Figure 54. Packaging reduction - by country**



With regard to the reduction of emitted pollutants or energy consumed during the products transport process, 41% of the respondents indicated that they had plans to improve their transportation methods. Relatively few companies were aware of strategies to improve the eco-friendly transportation of their products or services.

**Figure 55. Emission reduction of transportation**

*Q: Has your company taken eco-innovation actions for products and/or services since 2007? (Reduced pollutant emission or energy use in transit)*



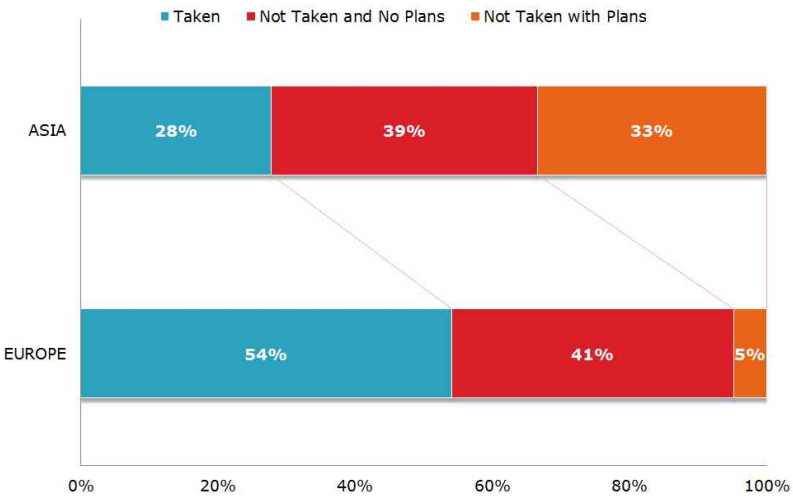
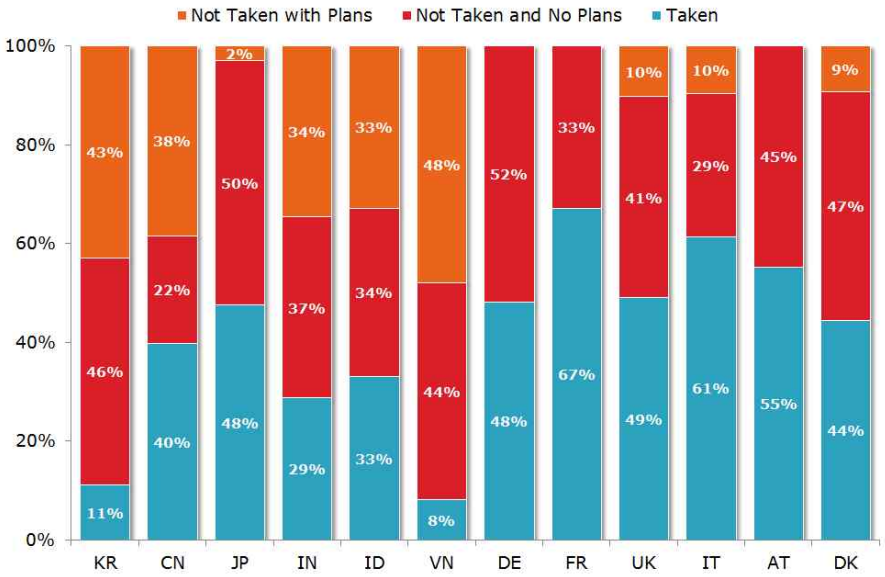



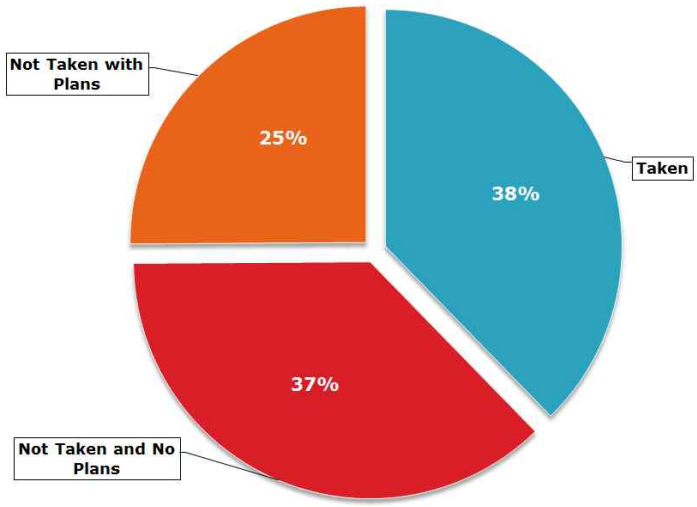

**Figure 56. Emission reduction of transportation - by region**

**Figure 57. Emission reduction of transportation - by country**



# *Extension of Product Life Cycle*

**Figure 58. Technology to extend product life-cycle**

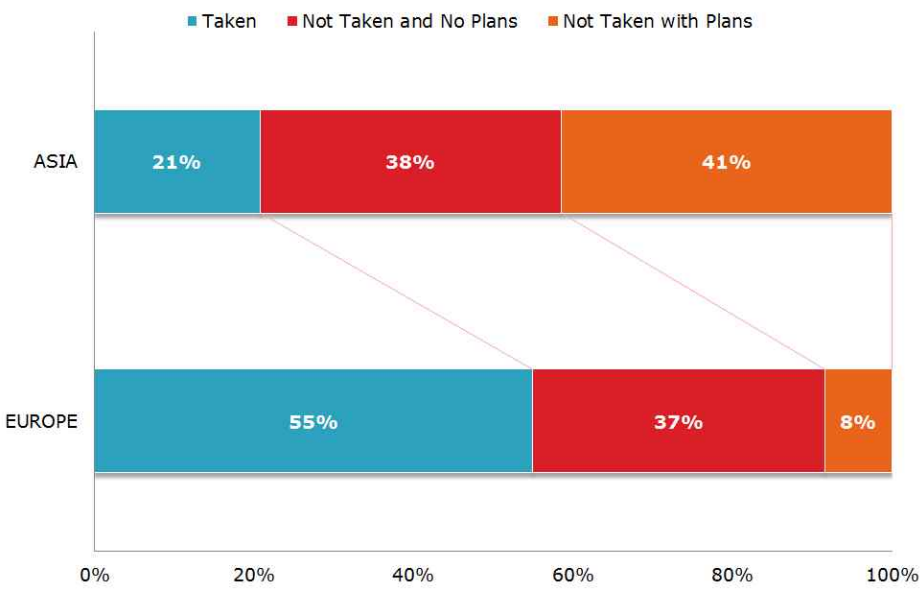



*Q: Has your company taken eco-innovation actions for products and/or services since 2007? (Applied a new technology to extend a product's life cycle)*

38% of SMEs in Europe amd Asia have used technology to extend the life cycle of products, while 37% of them have currently no plans for it.

**Real technological application using eco-innovation in product and service is low.**

**Figure 59. Technology to extend product life-cycle - by region**

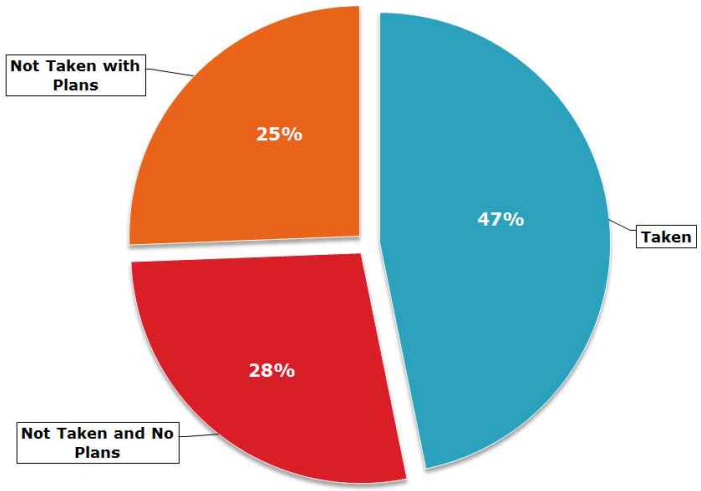


Of those surveyed, 47% reported having introduced plans to reduce pollution or energy consumption.

The survey also showed that, while plans to make their companies more eco-friendly have not yet been fully implemented, there is growing attention being paid to this issue in Asian SMEs.

**Figure 60. Technology of energy saving or emission reduction in use**

*Q: Has your company taken eco-innovation actions for products and/or services since 2007? (Applied a new technology to save energy or pollutant emissions in use)*



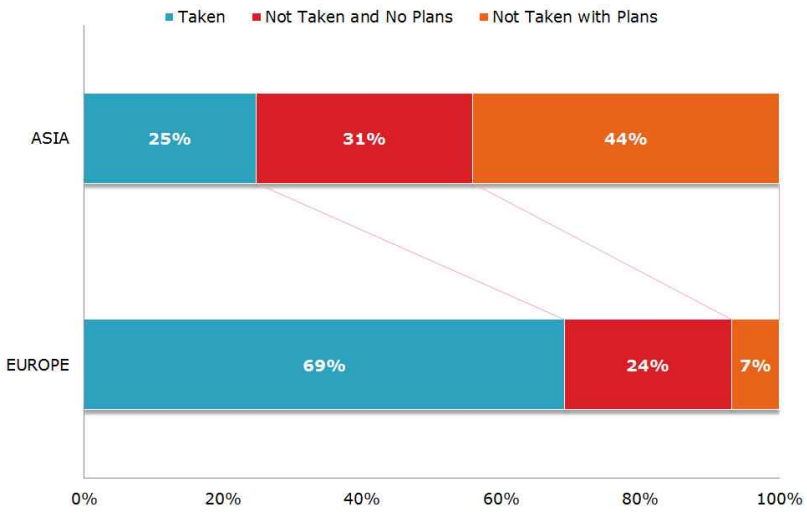
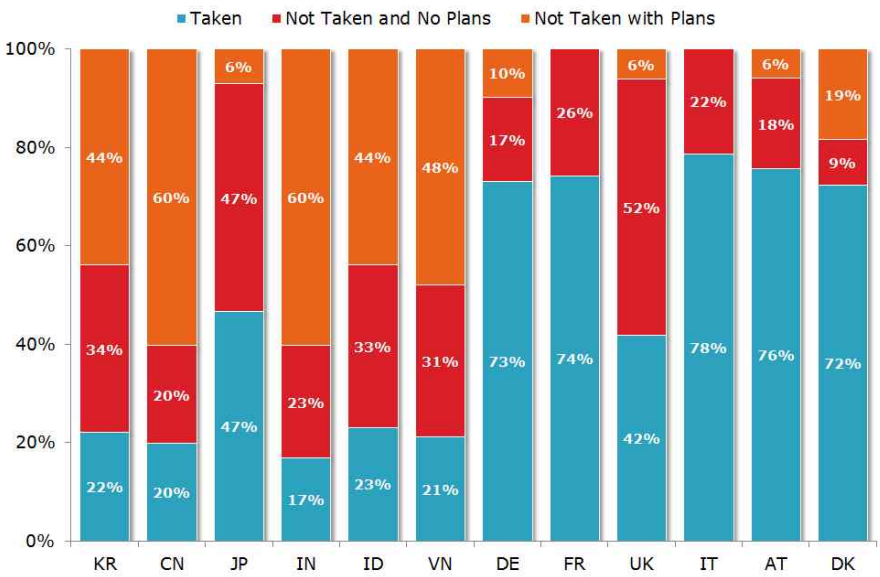




**Figure 61. Technology of energy saving or emission reduction in use - by region**

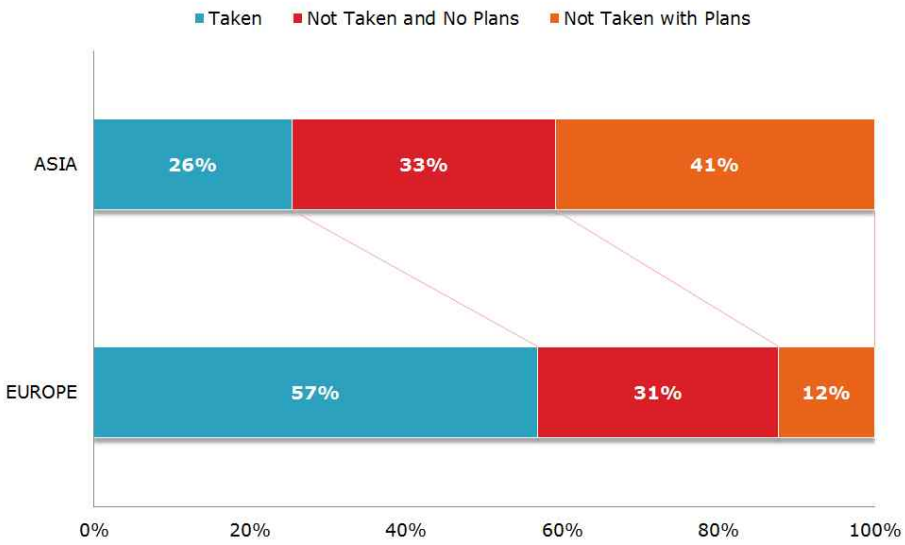
**Figure 62. Technology of energy saving or emission reduction in use - by country**



# *Product Recycling*

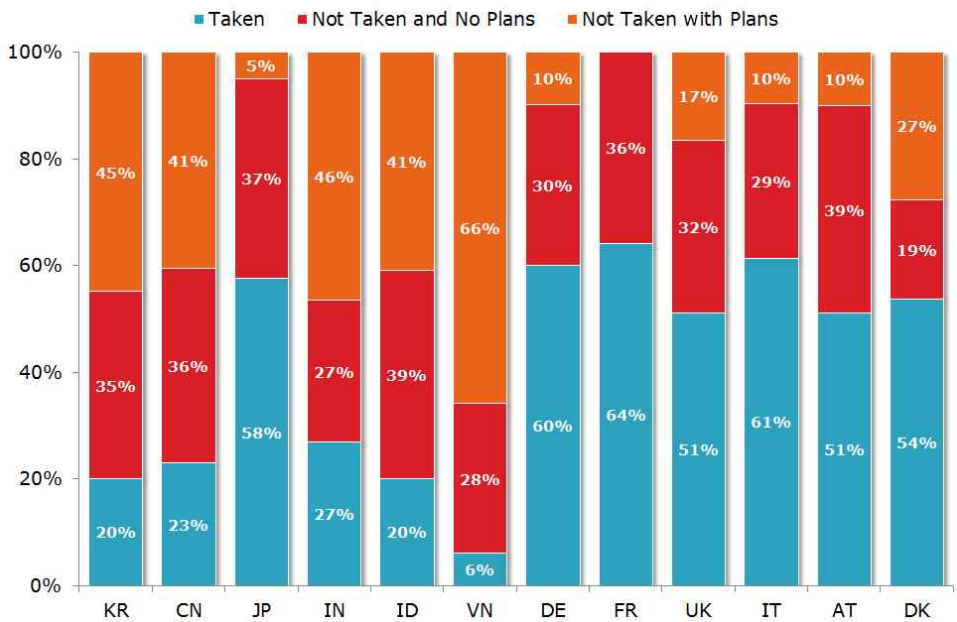
The introduction of eco-design is twice higher in Europe than in Asia. However, 41% of Asian SMEs are planning to introduce recycling solutions within 2 years. As Asian companies become more aware of eco-innovation strategies and the need for greener business practices, the gap in the rate of recycling solutions between Asia and Europe is expected to gradually narrow.

**Figure 63. Use of available recycling techniques - by region**




*Q: Has your company taken eco-innovation actions for products and/or services since 2007?*
*(used available recycling techniques)*

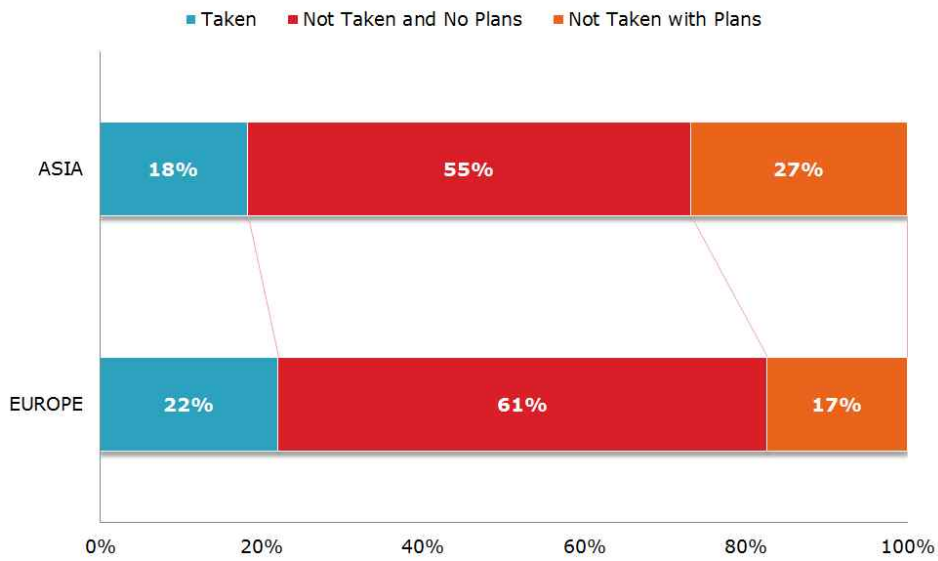
**Figure 64. Use of available recycling techniques - by country**



# Product Servicizing and Certification

Twenty percent (20%) of the companies surveyed already adopted product servicizing and 22% of them are planning to apply it within the next 2 years. Still, the negative response represented 58% of those surveyed.

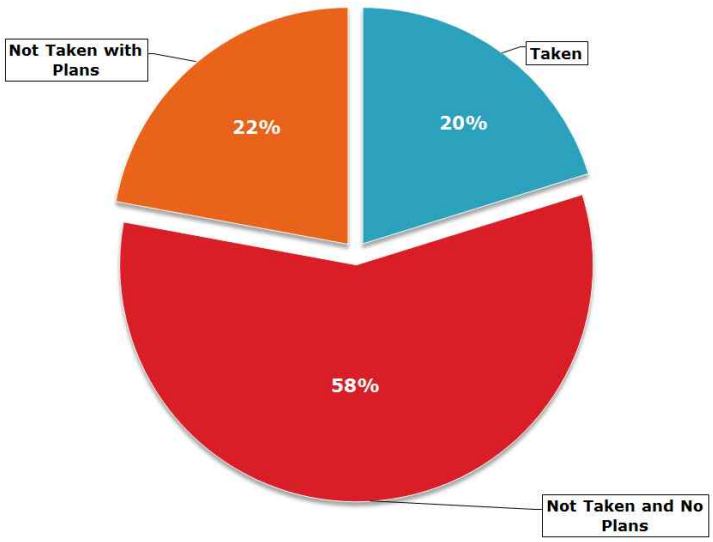
**Figure 65. Product servicizing - by region**




*Q. Has your company taken eco-innovation actions for products and/or services since 2007? (Introduced product servicizing)*

**Figure 66. Product servicizing**

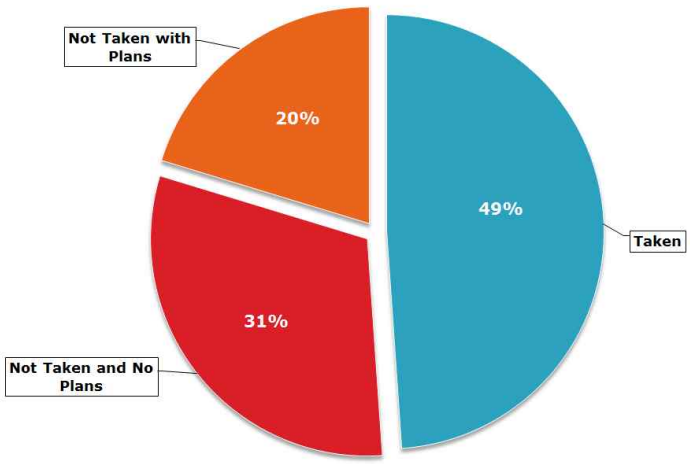
*Q. Has your company introduced the following activities to manufacture products since 2007? (Introduce Product Servicizing)*



49% of respondents reported producing eco-friendly certified products, and 20% planned to be using them within the following two years.

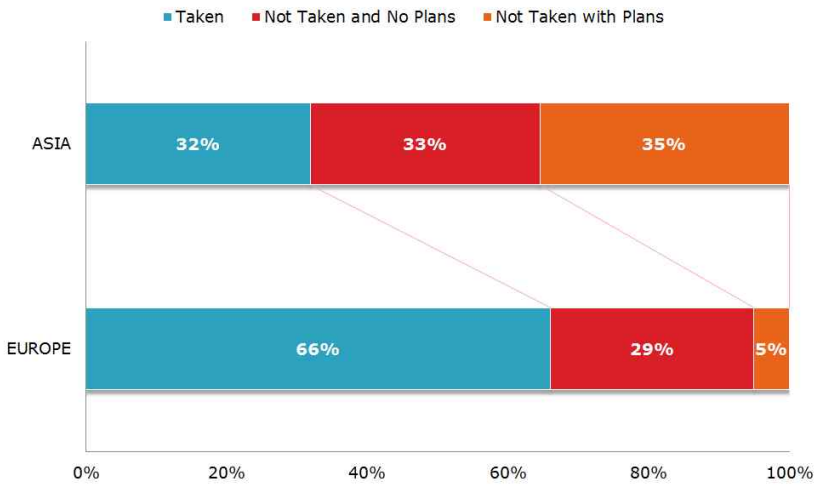
However, by region, there was a significant gap between the eco-friendly certification status of Asian SMEs and European SMEs, with 32% and 66%, respectively.

**Figure 67. Certification of eco-friendly product**




*Q: Has your company taken eco-innovation actions for products and/or services since 2007? (Provided certification of eco-friendly products)*

**Figure 68. Certification of eco-friendly product - by region**



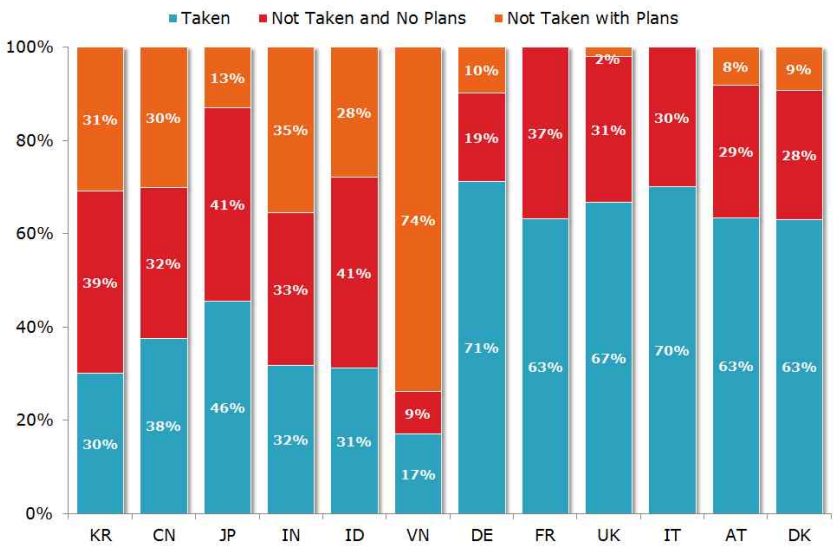




**Figure 69. Certification of eco-friendly product - by country**

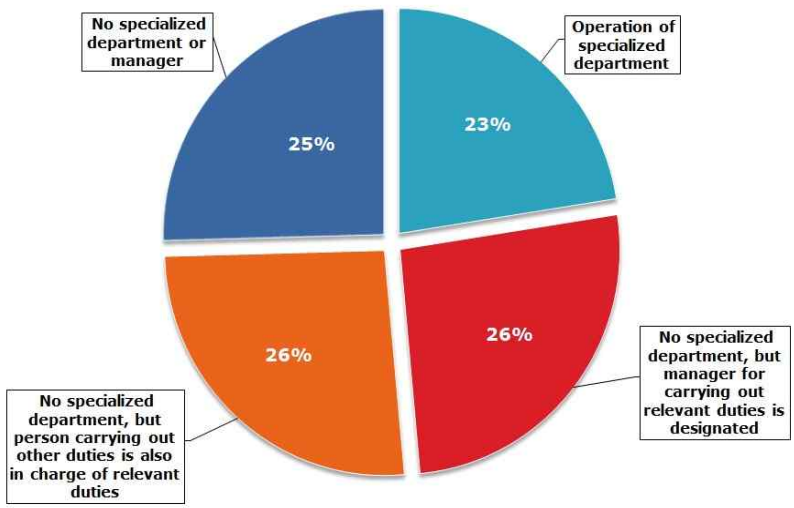
# *Chapter I*

# *4. Eco-Innovation for Organizations and Management Systems*

# *Eco-Innovation Team Building*

More than 50% of companies have a dedicated department (23%) or personnel (26%) related to eco-innovation or green management. Generally, respondents know well about the eco-innovation business, and are carrying out related activities.

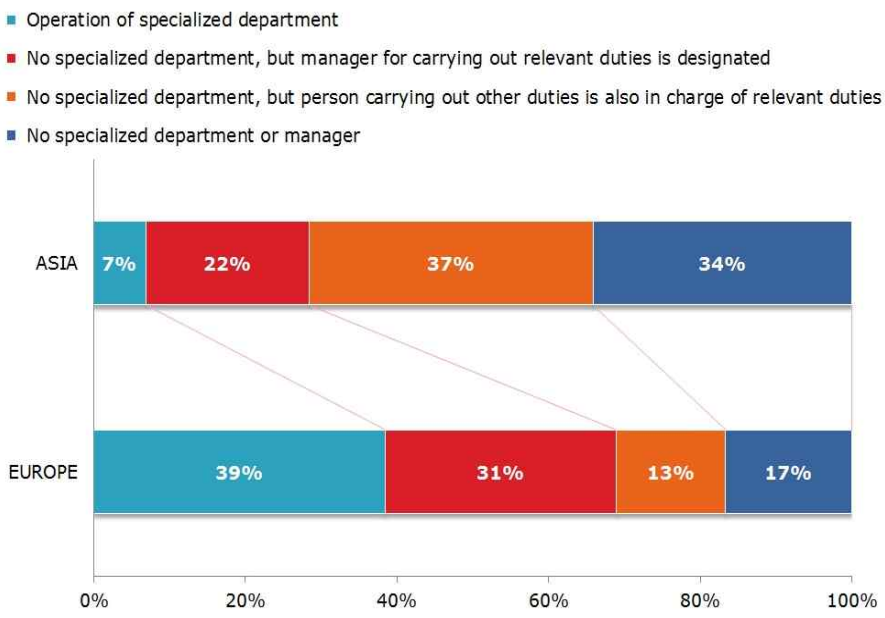
**Figure 70. Organization and personnel for eco-innovation**




**34% of the Asian SMEs have no organization or staff in charge of eco-innovation**

**Figure 71. Organization and personnel for eco-innovation - by region**

*Q: Does your company have a specialized organization or manager for duties related to green management or Eco-innovation?*



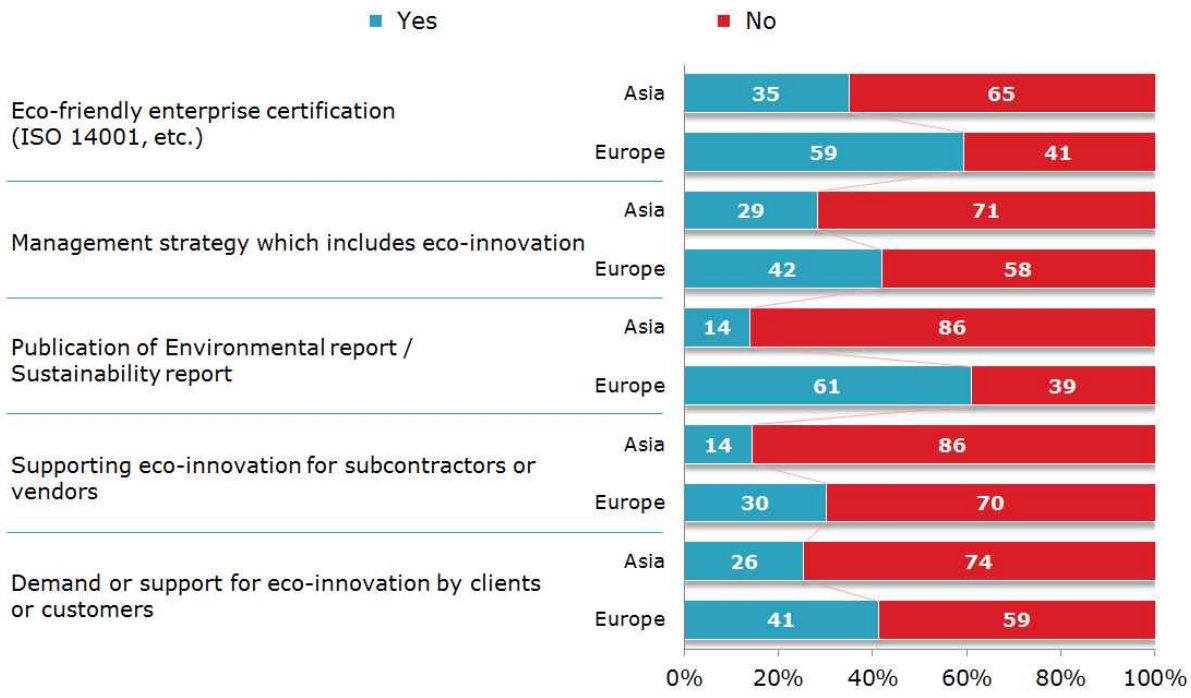
# Status of Environmental Management System

Regarding eco-innovation activities on a company's organization and management system, European SMEs report: publishing an environmental report or stainability report (61%); being certified as environmentally-friendly enterprises (59%); incorporating eco -innovation strategies in their overall management strategies (42%); receiving customer support or demand for eco-innovation (41%); and supporting eco-innovation activities that subcontractors or vendors participate in (30%).

Asian SMEs have lower level of Eco-innovation implementation than European SMEs. Asian SMEs report: being certified as environmentally-friendly enterprises (35%); incorporating eco-innovation strategies in their overall management strategies (29%); receiving customer support or demand for eco-innovation (26%); and supporting eco-innovation activities that subcontractors or vendors participate in (14%).

**Figure 72. Organization and personnel for eco-innovation within enterprises**

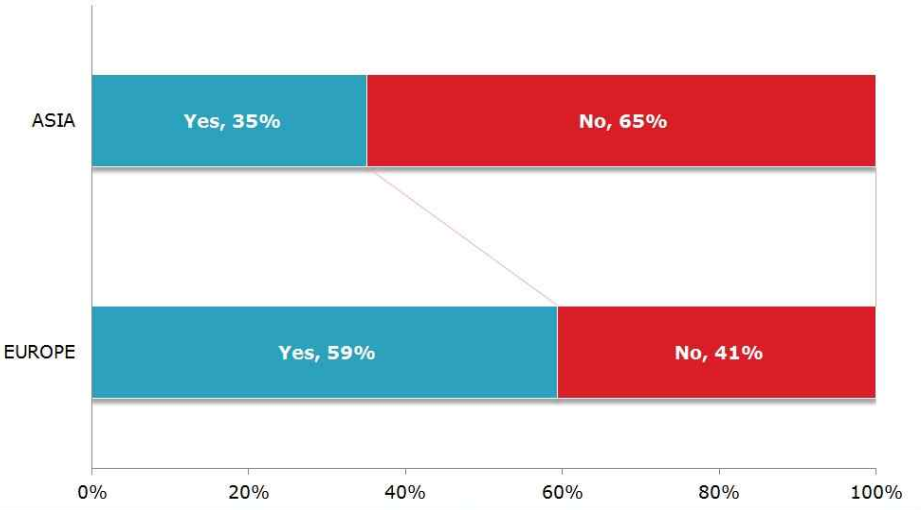
*Q: Does your company have experience with the following items?*



# *Eco-friendly Enterprise Certification*

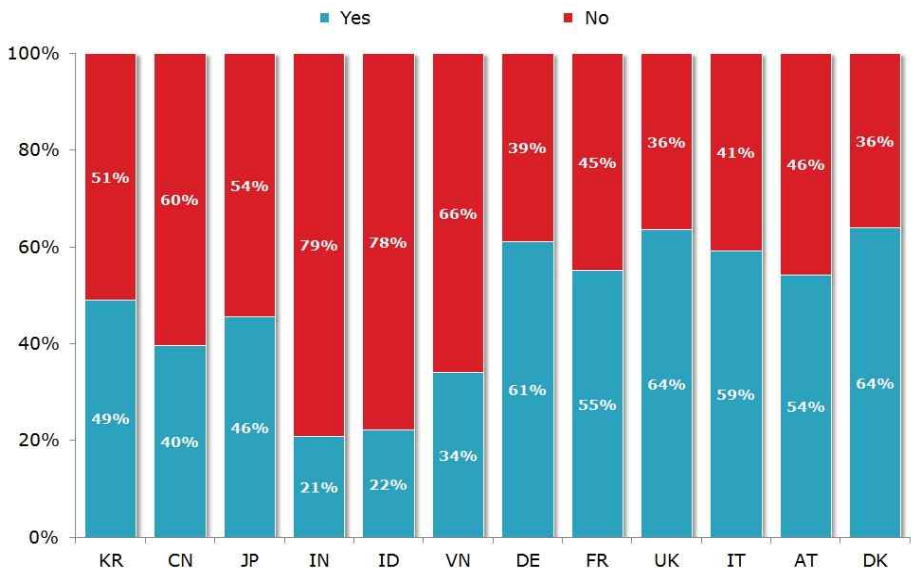
Almost 6 in 10 companies in Europe (59%) have received eco-friendly certification for environmental management such as the EU Eco-Management and Audit Scheme (EMAS) or the ISO/EN 14001 certificate. While roughly 3 in 10 companies in Asia (35%) have been ISO 14001 certified. This probably means that European business have more interest in streamlining environmental activities and requirements in the management of their businesses (e.g. through administration, construction, health and safety), compared to Asian SMEs.

**Figure 73. Eco-friendly enterprise certification - by region**




*Q: Does your company have experience with the following items? (Eco-friendly enterprise certification)*

**Figure 74. Eco-friendly enterprise certification - by country**



# Eco-Innovation Strategy

Approximately 3 out of 10 companies in Asia (29%) integrate eco-innovation into their management strategy, while 4 out of 10 companies in the Europe (42%) reported having eco-innovation strategy in management.

**Figure 75. Management strategy including eco-innovation - by region**

*Q: Does your company have experience with the following items? (Management strategy including eco-innovation)*

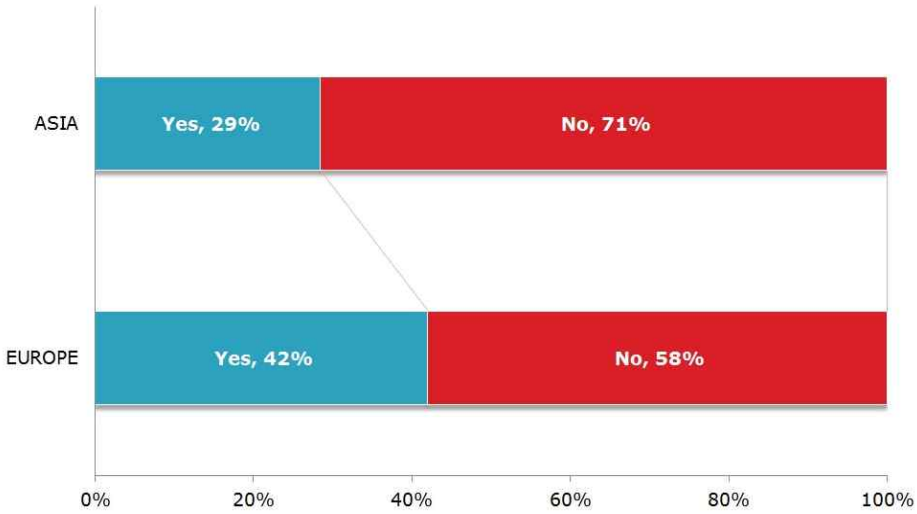
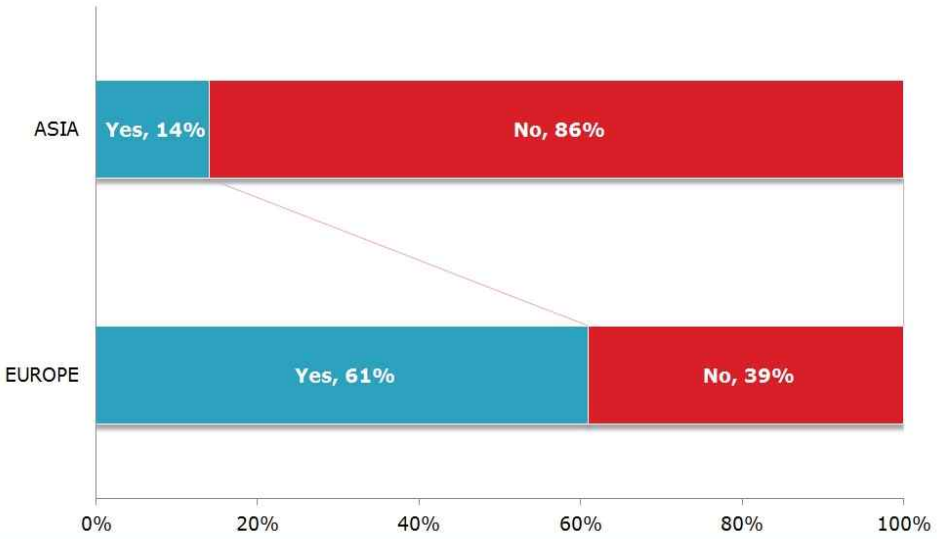



**Figure 76. Companies publishing environmental or sustainability reports**

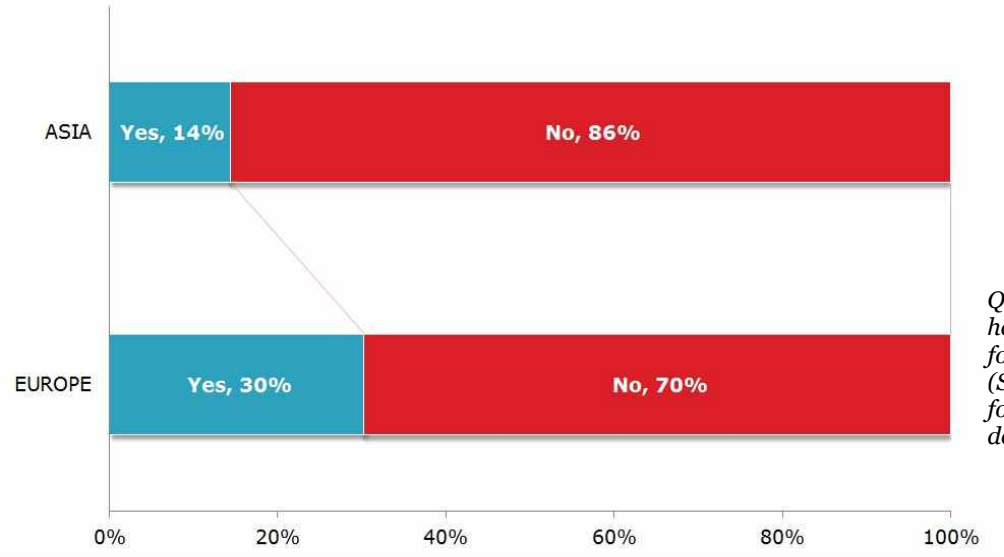



*Q: Does your company have experience with the following items? (Environmental report / sustainability report)*

# Eco-Innovation in Supply Chain

Roughly one third of the companies in Europe (30%) supported the eco-innovation activities of their subcontractors or vendors, while about one seventh in Asia (14%) had done the same.

**Figure 77. Support eco-innovation for subcontractor or vendor**

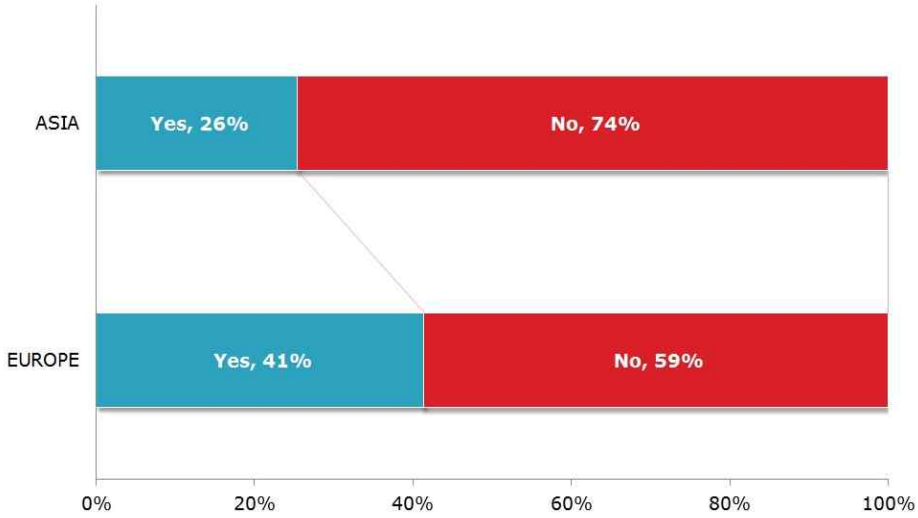



*Q: Does your company have experience with the following items? (Support eco-innovation for subcontractor or vendor)*

The demand of customers can have a significant impact on the business practices of SMEs. Whereas in Europe 41% of companies reported receiving customer feedback demanding more eco-friendly products or eco-innovation, in Asia only 26% had had received such feedback.

**Figure 78. Customer demand for eco-innovation**

*Q: Does your company have experience with the following items? (Call or support of customer for eco-innovation)*



# *Chapter I*

# *5. Eco-Innovation Policies*

# *Why Eco-Innovation?*

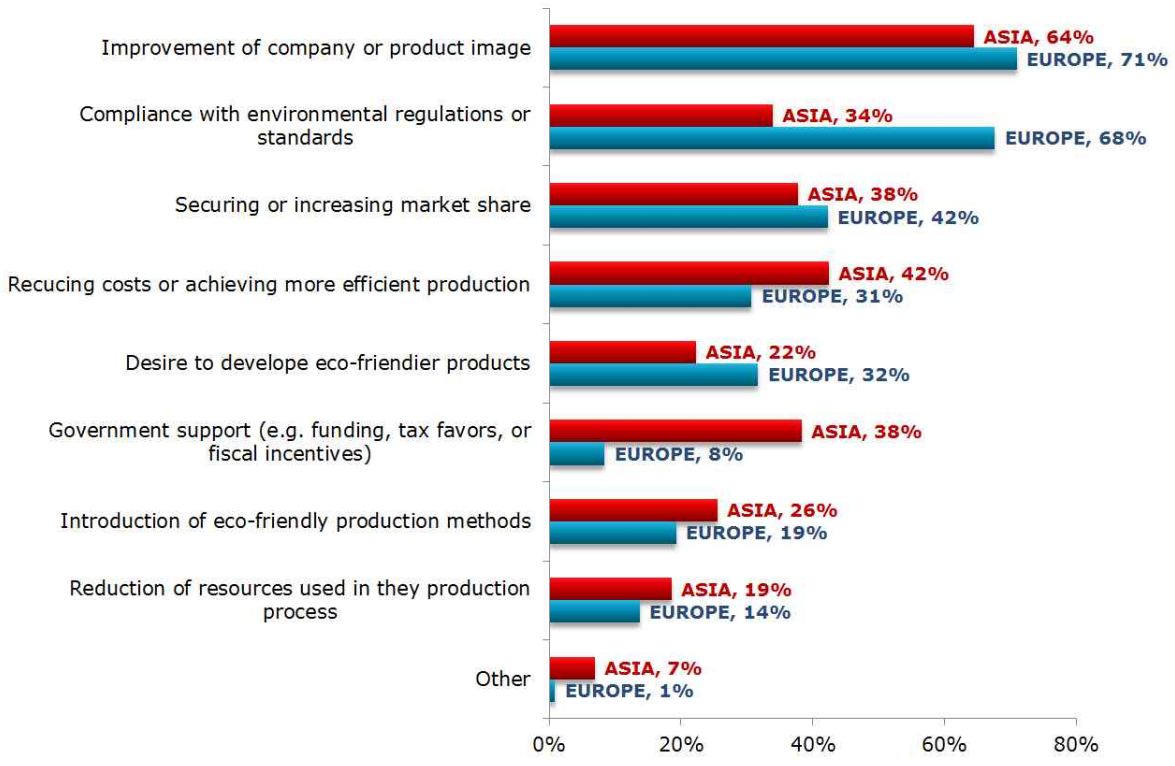
Approximately three-quarters (68%) of respondents answered that they were able to boost their product image by implementing eco-innovation. Some motivations for implementing this image-boosting eco-innovation include:

- compliance with environmental standards or regulations,
- maintaining of current market competitiveness or acquiring of new market share,
- reducing cost or achieving efficient production, and
- desire to develop eco-friendly products

Of particular interest is the influence that government seems to have on the eco-innovation practices of SMEs. In Asia, for example, SMEs that had incorporated eco-innovation into their management strategies were far less motivated by compliance with environmental regulations or standards. Instead, they were far more motivated by government-sponsored incentives such as funding, tax favors, or other fiscal means.

**Figure 79. Motivation for pursuing eco-innovation actions in SMEs in Asia an Europe**

*Q: For what purposes did your company introduce technology, provide improvement methods, and make efforts for eco-innovation?*



# Access to Information (Environmental Policies & Regulation)

Three out of 10 Asian SMEs responded that they have received regulatory and policy updates by chance through news or friends. Thirty percent of them make use of information from industry associations or organizations. The vast majority of Asian companies had problems accessing information affecting their businesses, including 13% who reported having no access at all. Around 45% of the European SMEs indicated that they were likely to access information on regulations and policies impacting their business.

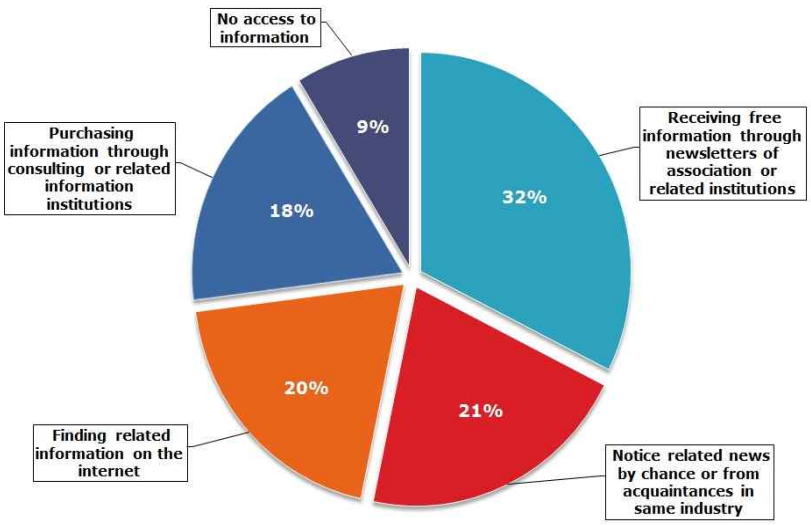
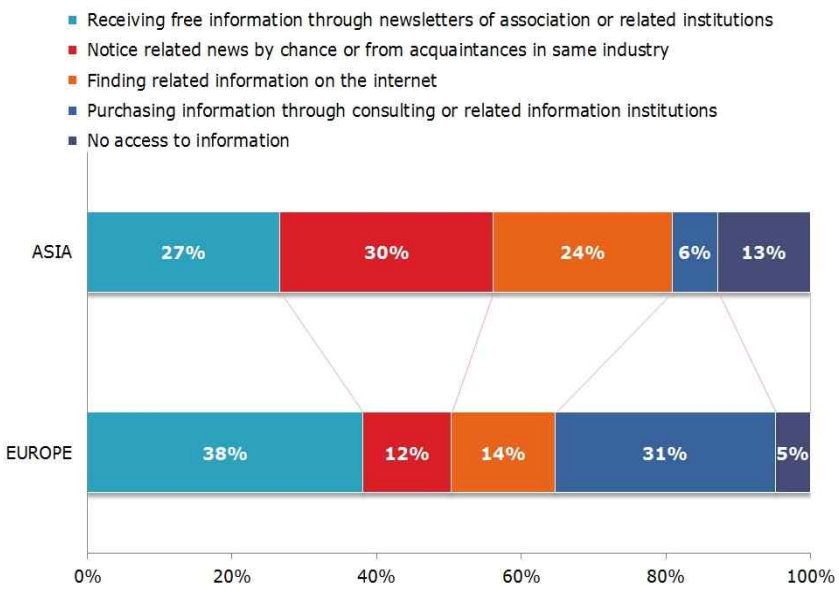



**Figure 80. Access to information on regulation for eco-innovation**

*Q: How does your company check information on eco-innovation regulation?*

**Figure 81. Access to information on regulation for eco-innovation - by region**



Regarding barriers to accessing information on regulation and policies regarding eco-innovation, 38% of the respondents indicated difficulty trusting the credibility of information from one source as a barrier to accessing useful information. 17% of the respondents indicated that they lacked the appropriate human resources for analyzing and applying technical regulations and policies.

**Figure 82. Barrier to information access on regulation and policy**

*Q: What is the greatest difficulty in the process of collecting information on related regulation and policy for eco-innovation?*

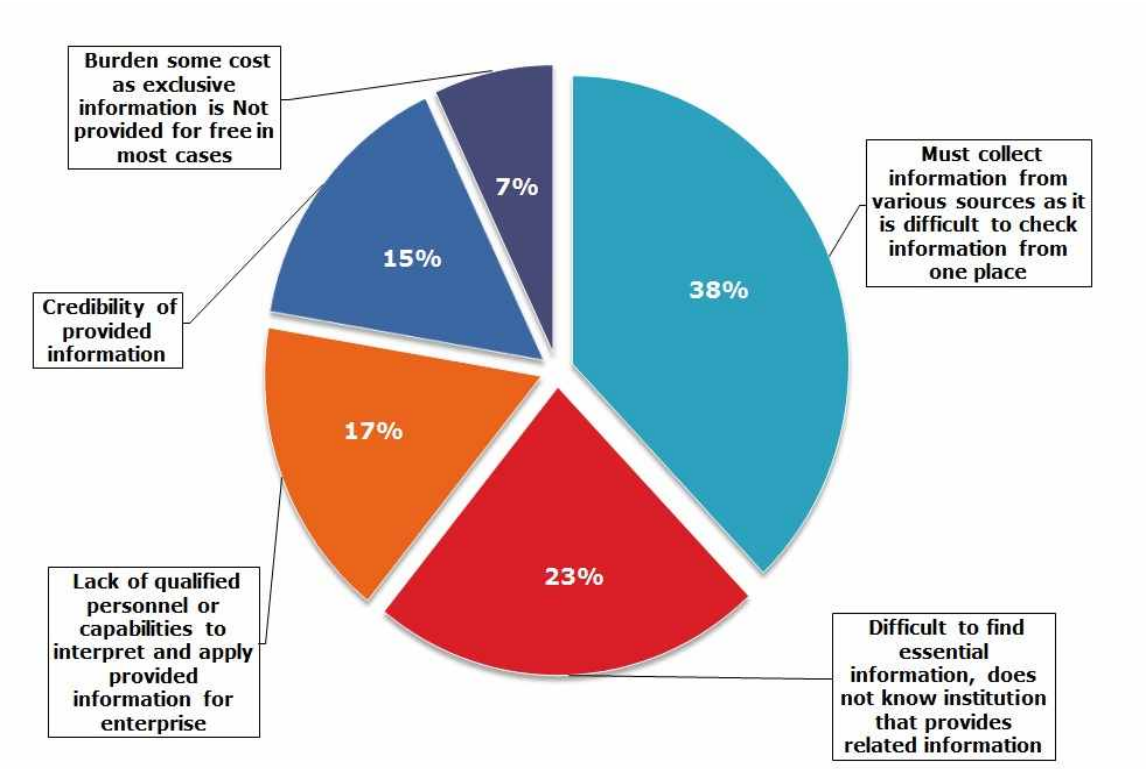



**Figure 83. Barrier to information access on regulation and policy - by region**

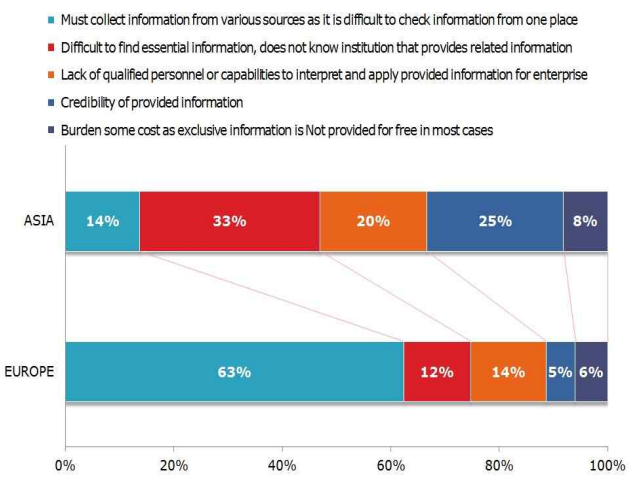
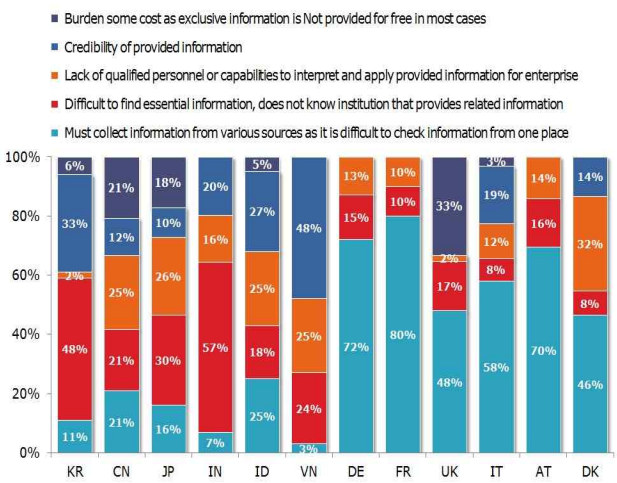


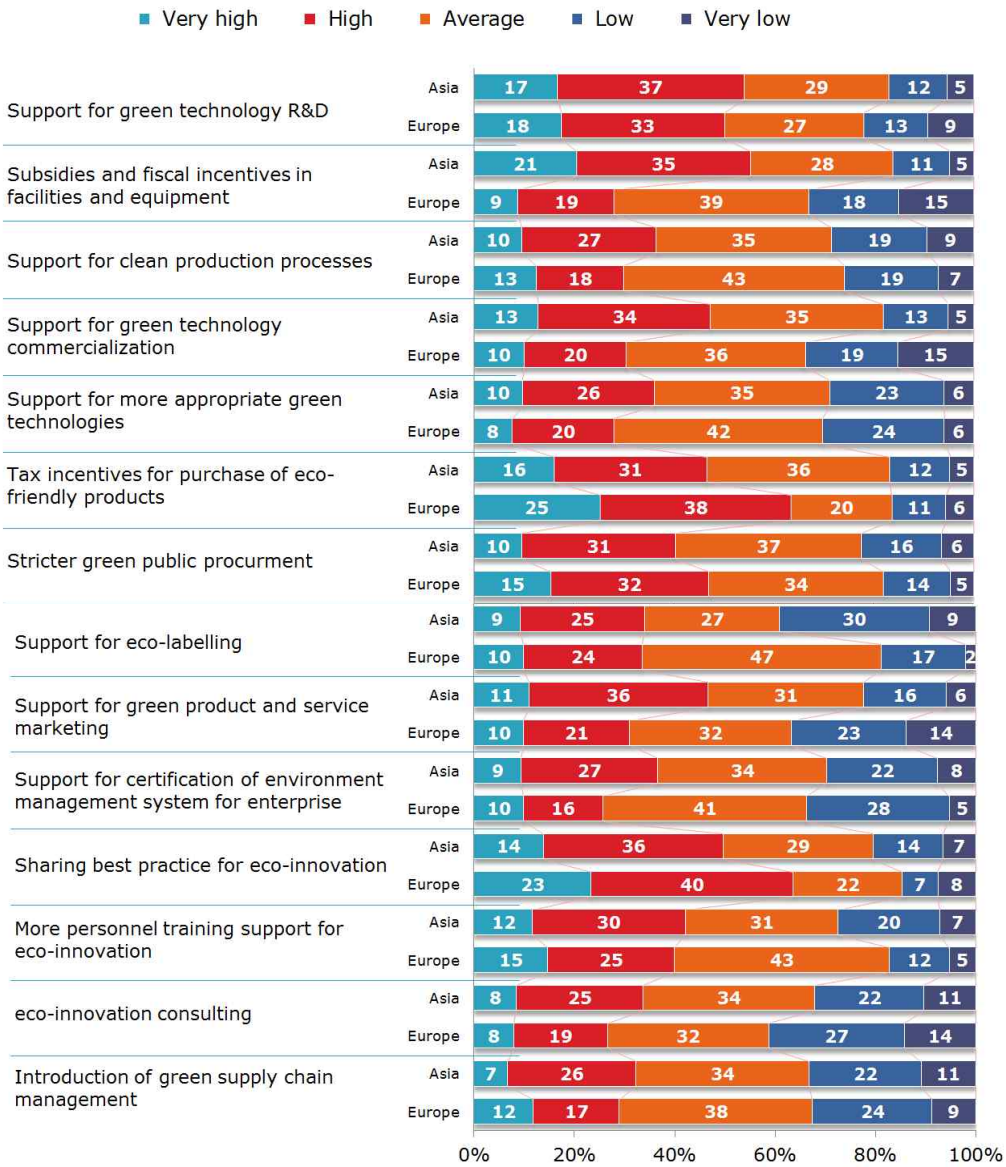

**Figure 84. Barrier to information access on regulation and policy - by country**



# Policy Support for Eco-Innovation

To get a better idea of the policy support needs in SMEs in Asia and Europe, respondents were asked to identify the level of need for 14 areas of support for eco-innovation. Overall, European companies indicated a need for policy support in the field of green R&D, whereas Asian companies reported needing policy support in marketing eco-innovation.

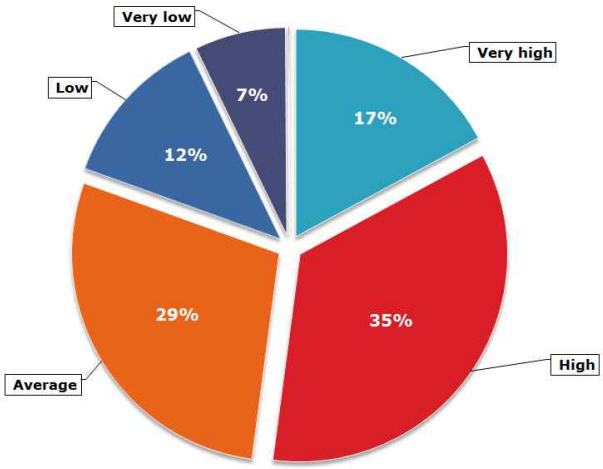
**Figure 85. Level of eco-innovation policy needs for SMEs in Asia and Europe**




*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s)*

# Policy Support for Green R&D

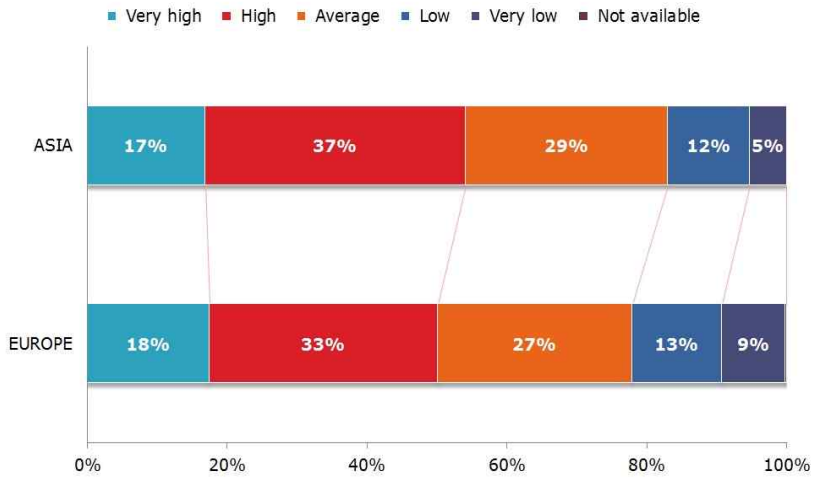
**Figure 86. Necessity of support for green technology R&D**




More than half of the businesses answered that they needed policy support for green technology R&D. More specifically, almost a half of the Asian and the European companies regarded policy support for green R&D as essential for their's companies' ability to pursue eco-innovation.

**Figure 87. Necessity of support for green technology R&D - by region**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Support for green technology R&D)*



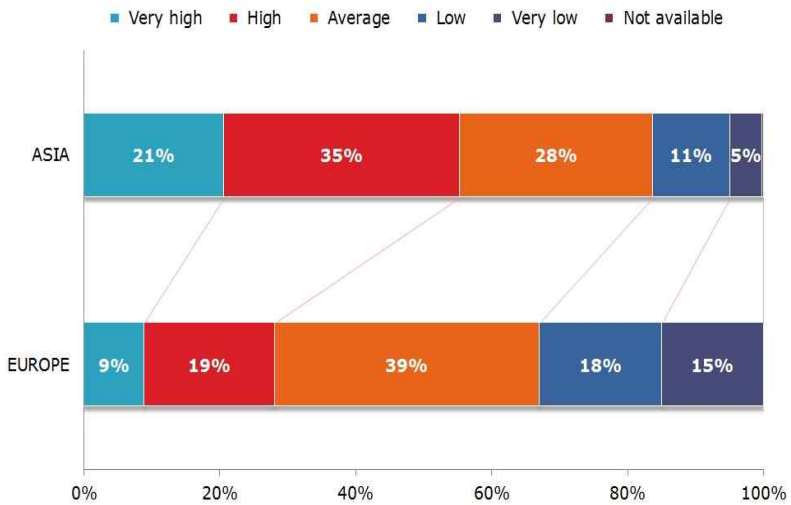




**Figure 88. Necessity of subsidies and fiscal incentive for facilities and equipment - by region**

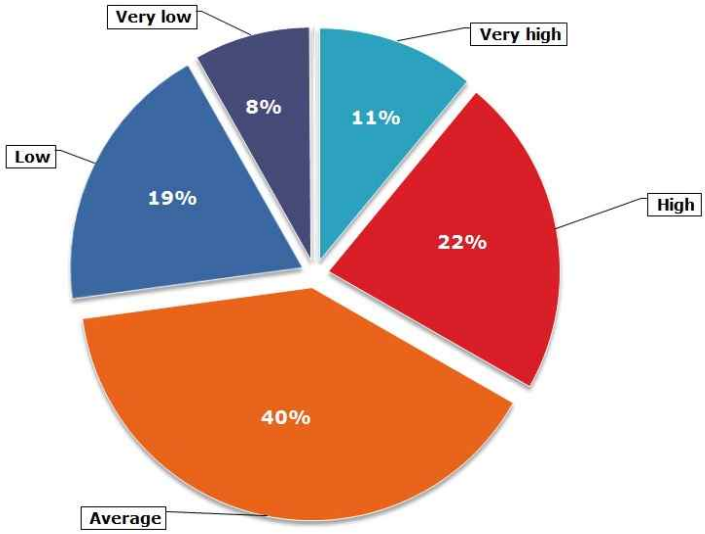
*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Subsidies and fiscal incentives in facilities and equipment)*

# *Policy Support for Clean Production Processes*

Approximately a third of the respondents said that they highly need government' support for eco-friendly production processes, while less than 3 in 10 respondents reported that it was not important for eco-innovative activities.

**Figure 89. Necessity of support for clean production process**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Support for clean production process)*



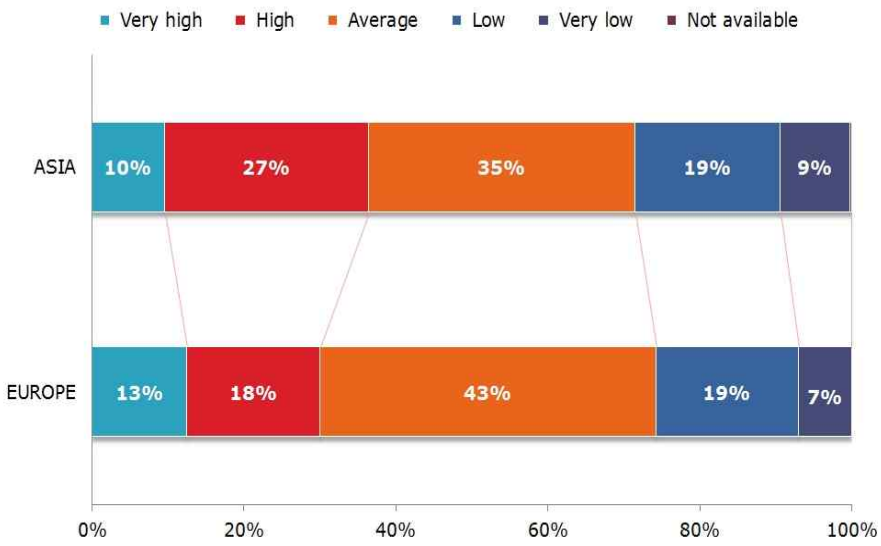




**Figure 90. Necessity of support for clean production process - by region**

# *Policy Support for Green Technology Commercialization*

40% of businesses indicated the necessity for government to support the commercialization of green technology (12% with very high, 28% with high). On the other hand, 26% of businesses reported low need for government support for commercialization.

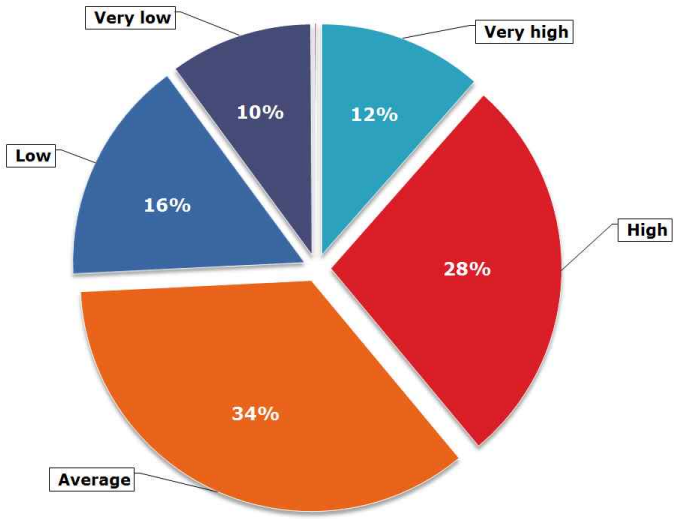
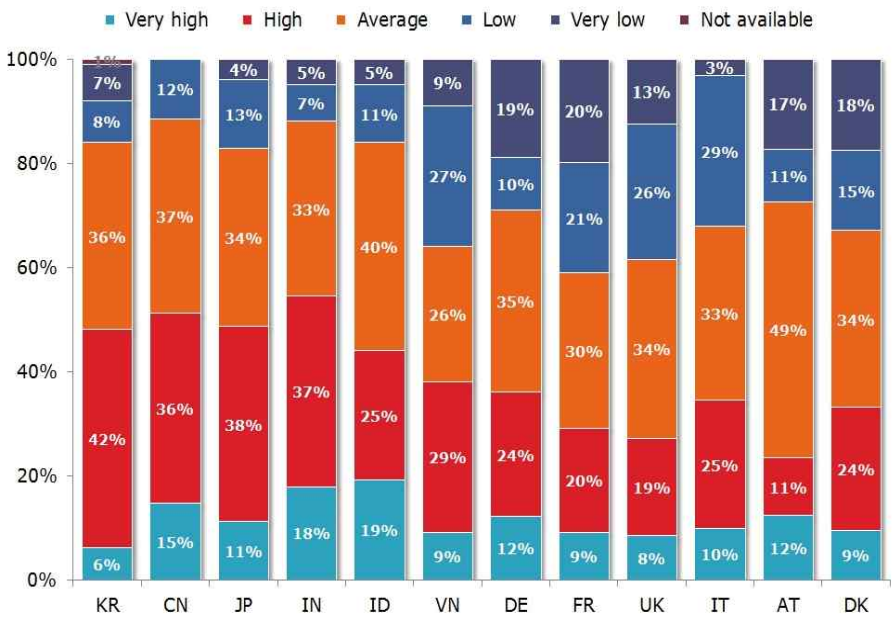



**Figure 91. Necessity of support for green technology commercialization**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Support for green technology commercialization)*

**Figure 92. Necessity of support for green technology commercialization - by country**

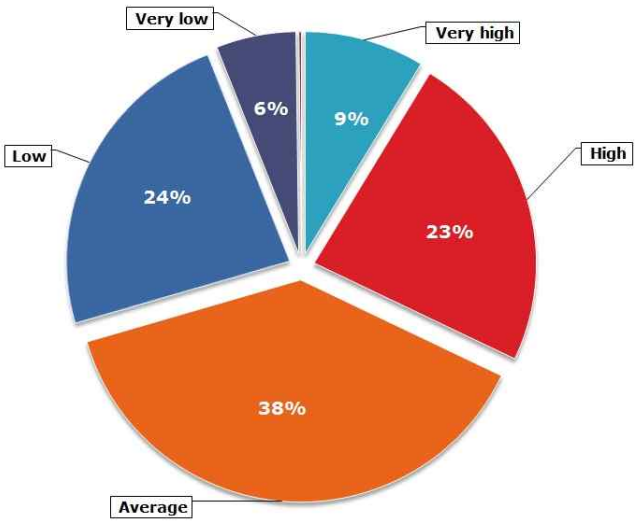


32% of the respondents indicated that promotion of appropriate green technology was either highly or very high necessary.

36% of European and 28% of Asian SMEs indicated this level of necessity of support.

**Figure 93.**
**Necessity of support for more appropriate green technology**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Support for more appropriate green technology)*



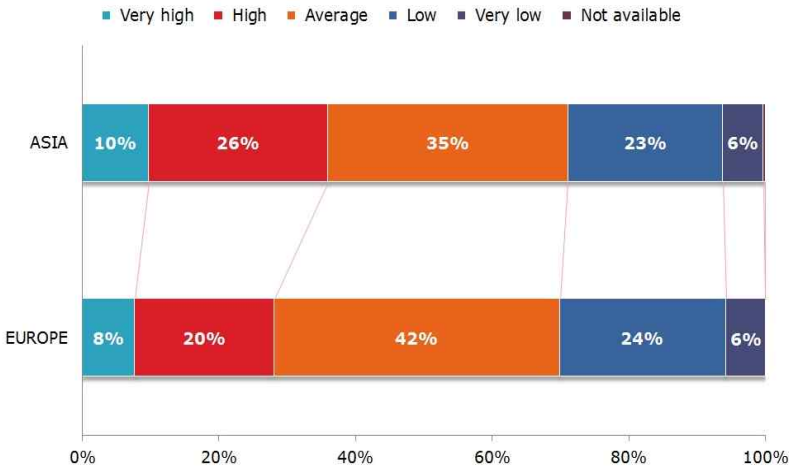




**Figure 94.**
**Necessity of support for more appropriate green technology**
**- by region**

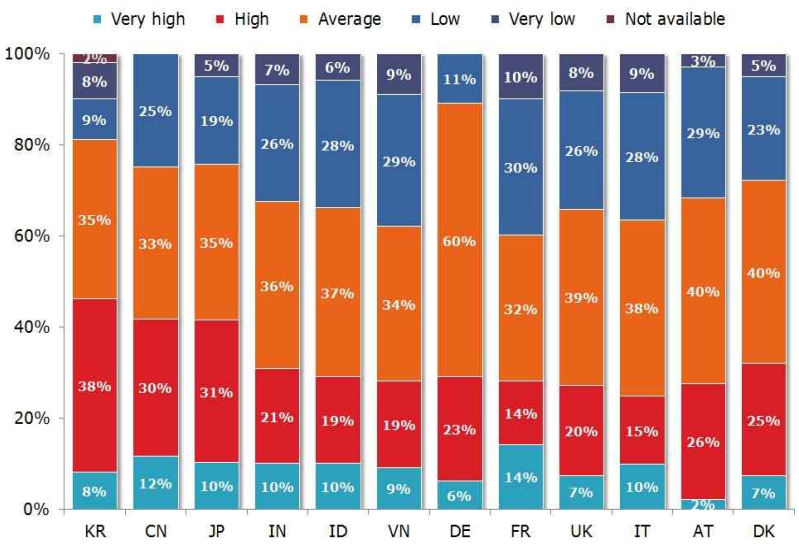



**Figure 95.**
**Necessity of support for more appropriate Green technology**
**- by country**

# *Tax Incentives for Purchase of Eco-Friendly Products*

Fifty-five percent (55%) of respondents indicated that they either highly needed or very highly needed tax incentives to purchase eco-friendly products. 47% of Asian and 63% of European SMEs noted that it is highly necessary for sustainable consumption and production.

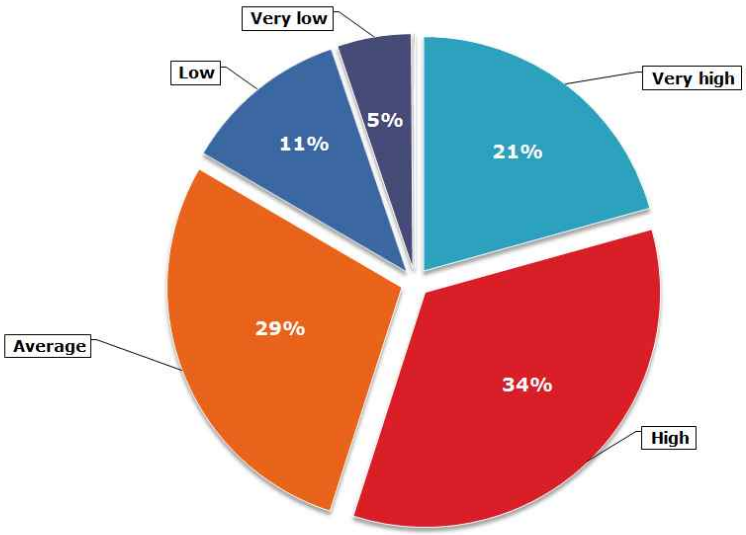
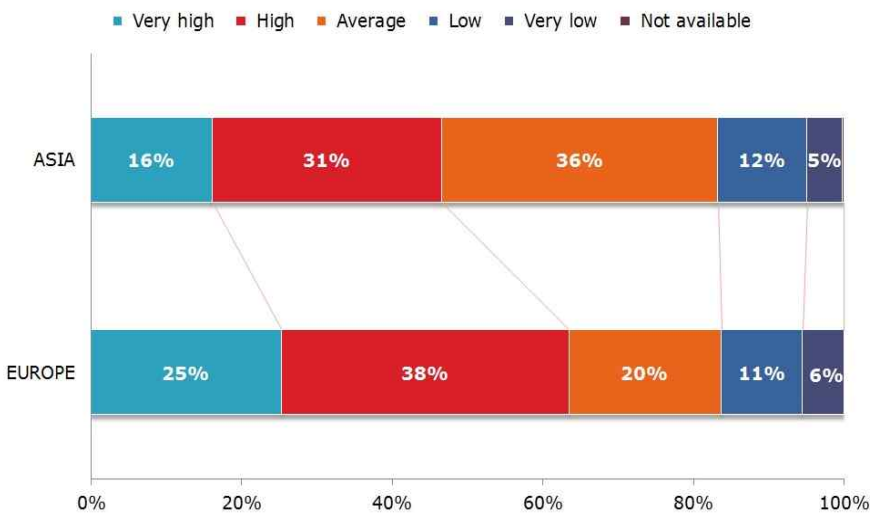



**Figure 96.**
**Tax incentives for for purchase of eco-friendly products**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy (s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*
*(Tax incentives for the purchase of eco-friendly products)*

**Figure 97.**
**Tax incentives for purchase of eco-friendly products - by region**

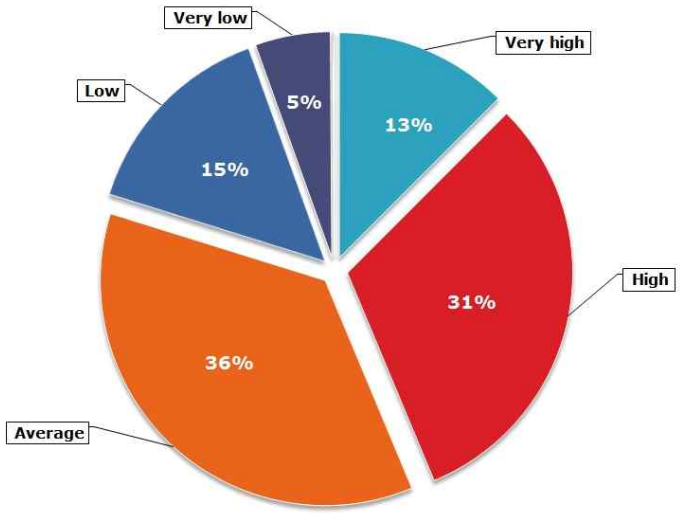


# Green Public Procurement

Forty-four percent (44%) of respondents indicated the desire for greater green public procurement for eco-friendly products. More specifically, 47% of the European SMEs and 41% of the Asian SMEs responded with either high or very high demand for green public procurement.

**Figure 98.**
**Need for green public procurement**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Stricter green public procurement)*



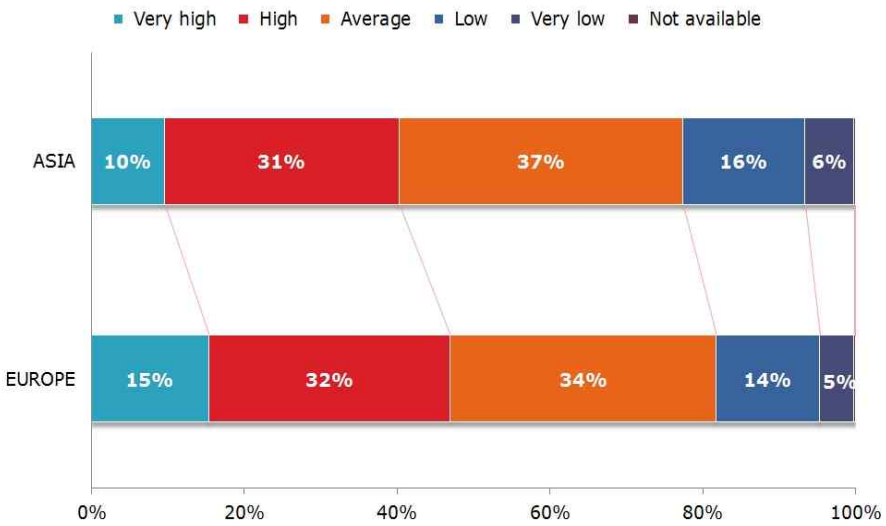




**Figure 99.**
**Need for green public procurement - by region**

# *Support for the Marketing of Products & Services*

The majority of companies responded that they needed the government's support for product and service marketing, such as participation in overseas exhibitions or assistance in the overseas market. 39% of respondents considered support for marketing of products and services as either highly or very highly important with little difference by region.

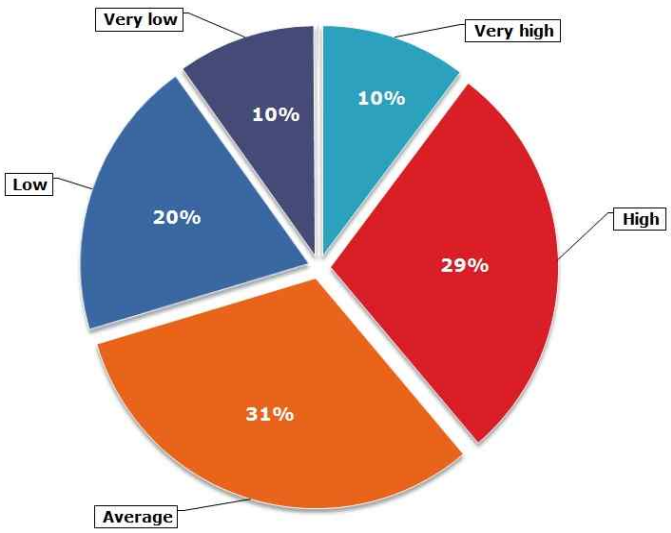
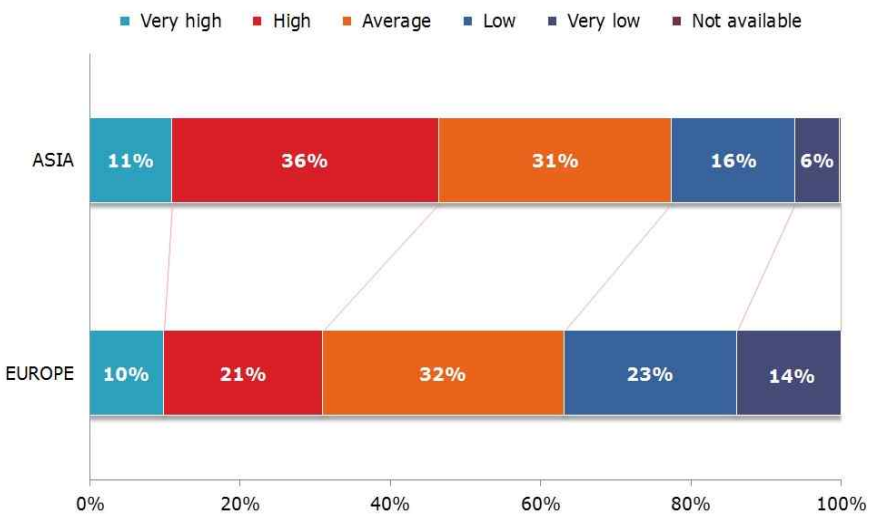



**Figure 100. Support for product and service marketing**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Support for product and service marketing)*

**Figure 101. Support for product and service marketing - by region**



# *Knowledge Sharing on Best Practices of Eco-Innovation*

By region, 63% of the European SMEs surveyed indicated that they needed better sharing of best practices for eco-innovation, while 50% of the Asian SMEs indicated the same level of need.

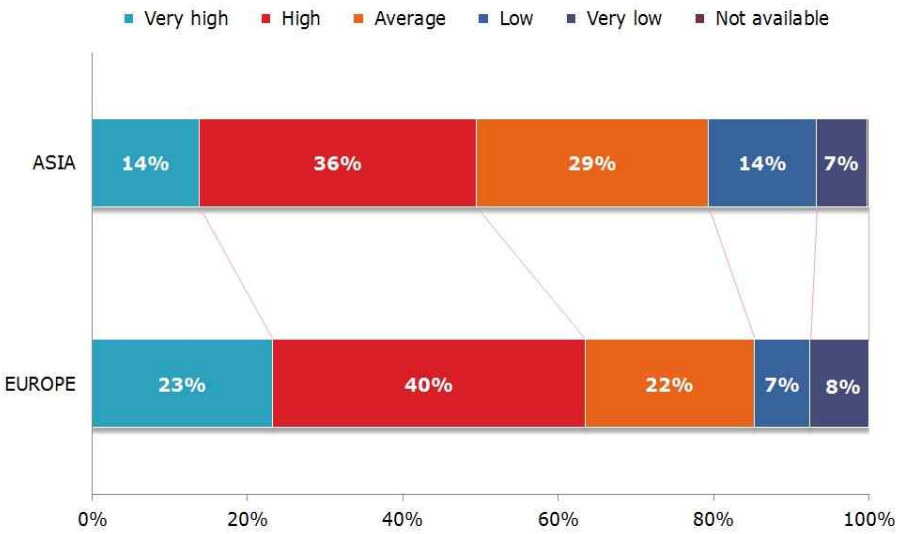
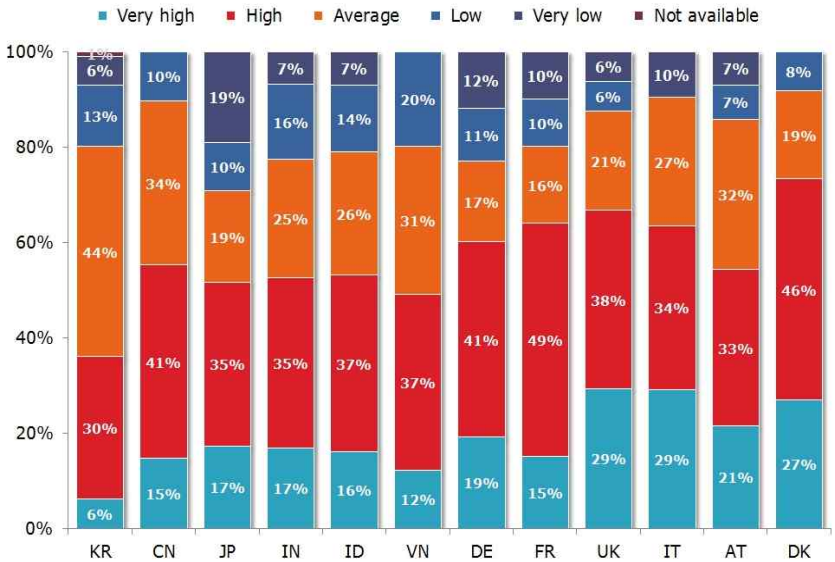



**Figure 102. Sharing best practices for eco-innovation**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Sharing best practice for eco-innovation)*

**Figure 103. Sharing best practices for eco-innovation - by region**



# Training on Eco-Innovation

41% of respondents indicated the need for an eco-innovation training program administered by the government. This survey shows that many SMEs do not consider training on eco-innovation to be a crucial role of the government or policy makers.

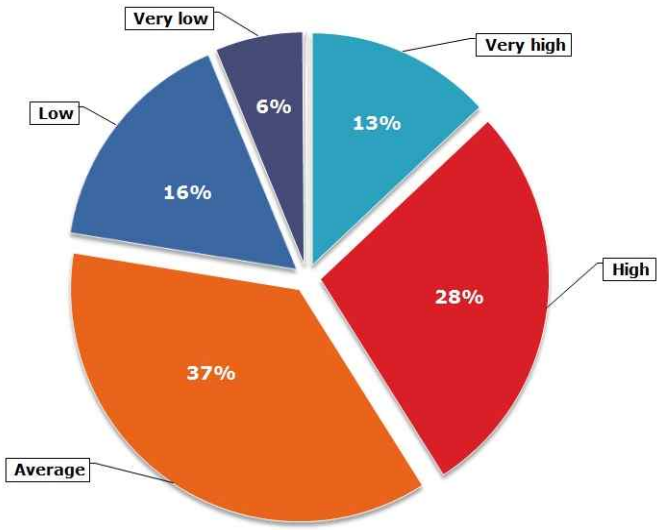
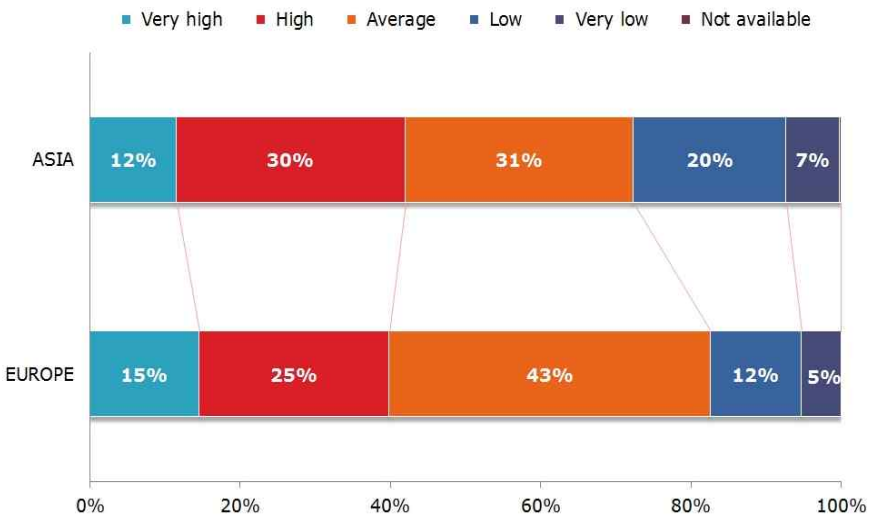



**Figure 104. Personnel training program for eco-innovation**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (More personnel training support for eco-innovation)*

**Figure 105. Personnel training program for eco-innovation - by region**

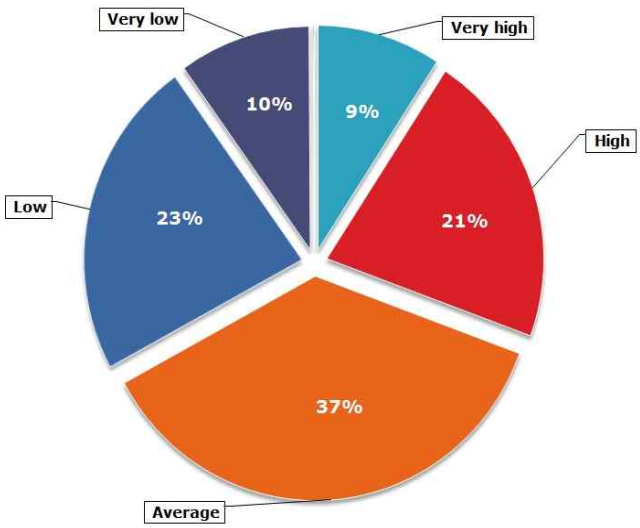


# *Support for Green Supply Chain Management*

30% of respondents indicated that green supply chain management was necessary. Asian SMEs (33%) seemed slightly more concerned with green supply chain management than European SMEs (29%) .

**Figure 106. Introduction of green supply chain management**

*Q: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s). (Introduction of green supply chain management)*



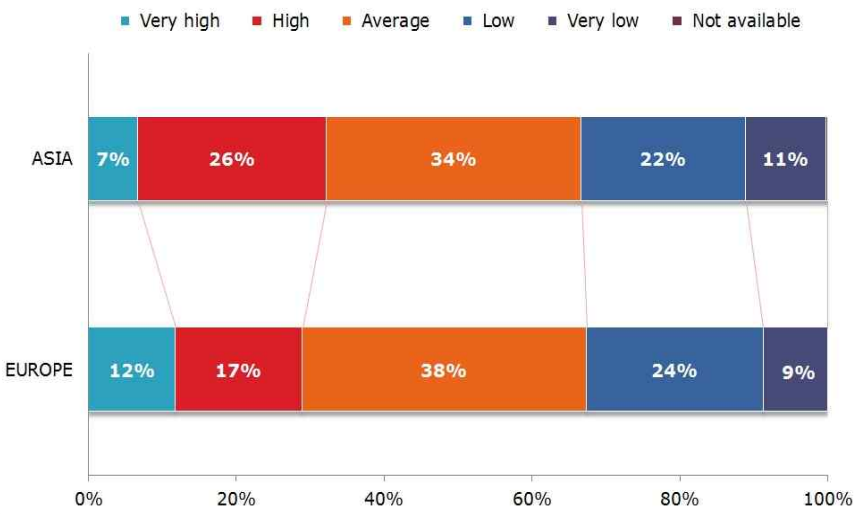




**Figure 107. Introduction of green supply chain management - by region**

# *Chapter I*

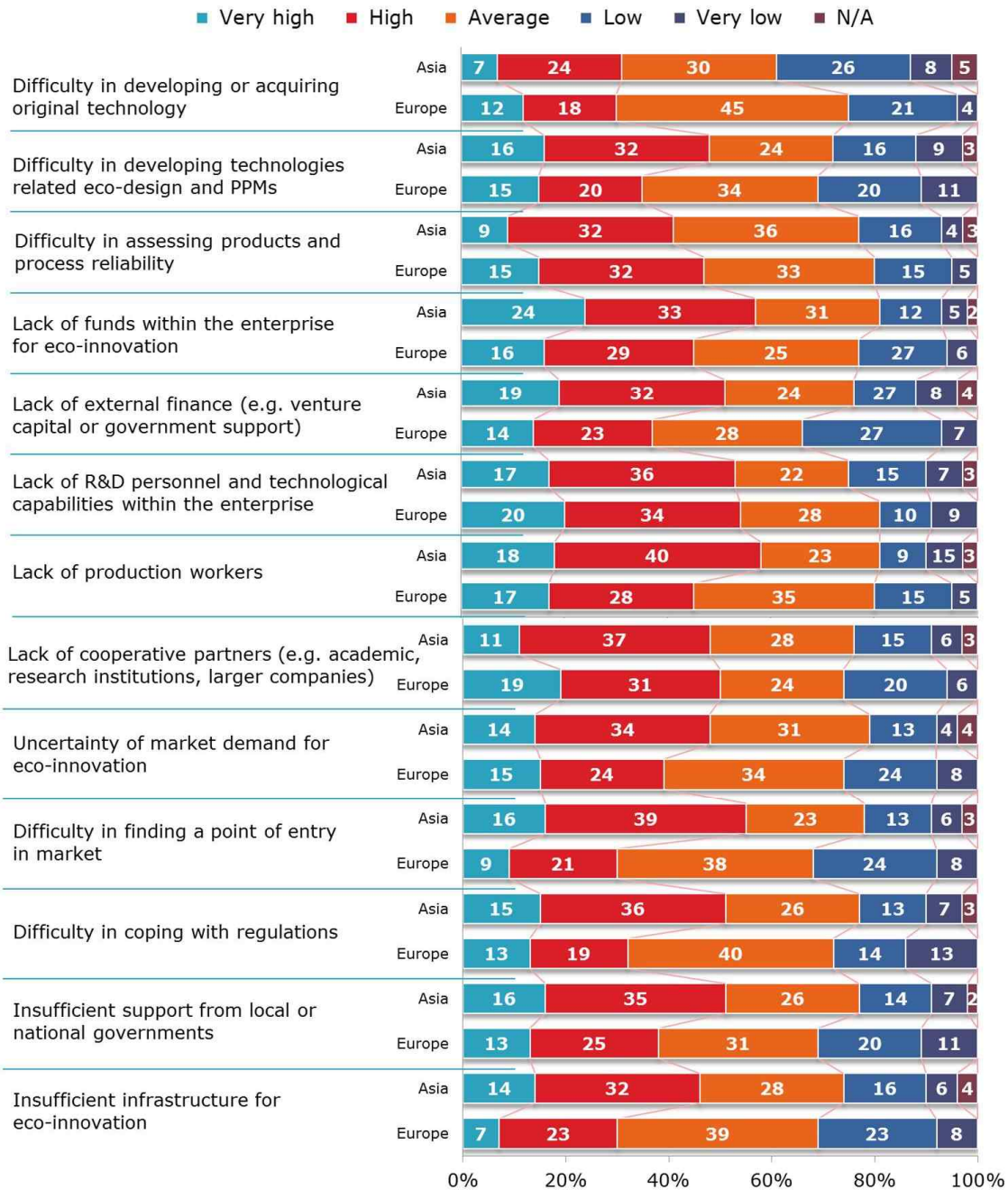
# *6. Barriers to Eco-Innovation*

# Barriers to Eco-Innovation

Regarding obstacles against introduction and implementation of eco-innovation, the following negative factors were identified.

**Figure 108. Barriers to eco-innovation**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*



# *Difficult to Acquire Original Technology*

30% of European companies and 31% of Asian enterprises indicated difficulty developing and acquiring original technologies. According to the result by region, Asian SMEs have more trouble developing and acquiring original technology for Eco-innovation, compared with European SMEs.

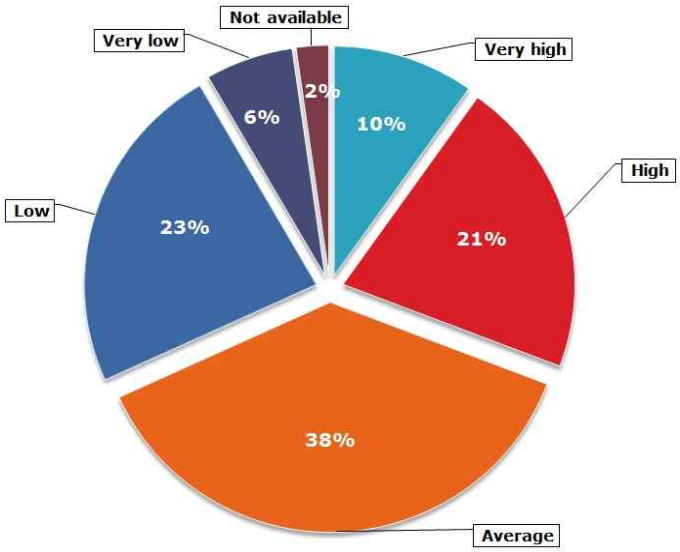



**Figure 109. Difficulty in developing or acquiring original technologies**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Difficulty in developing or acquiring original technology)*

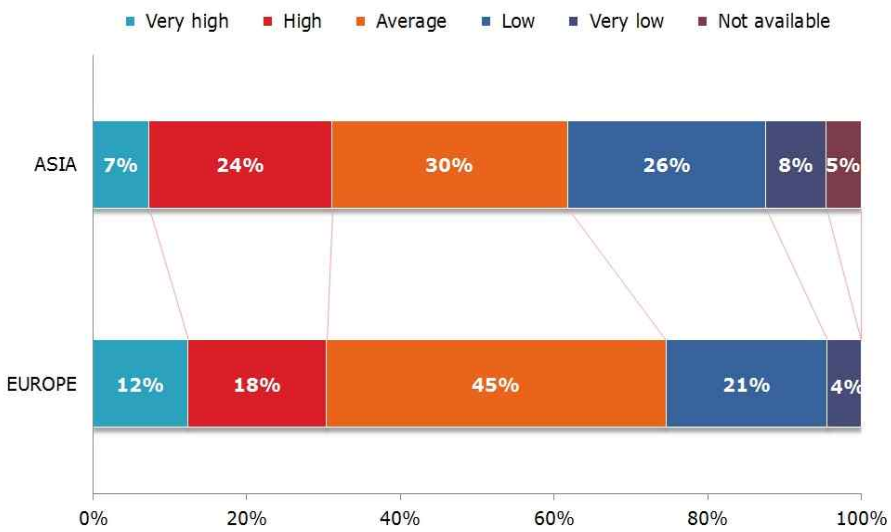



**Figure 110. Difficulty in developing or acquiring original technologies - by region**

# Technical Incapacity on Reliability Assessment

Over 44% of the respondents indicated that limited capacity to conduct reliable assessments of products and processes was a barrier to a faster uptake of eco-innovation in their company. Roughly a third of companies (35%) recognized this factor as at least "an average" barrier to eco-innovation.

**Figure 111. Limit of capability in reliability assessment of product and process**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Difficulty in assessing product and process reliability )*

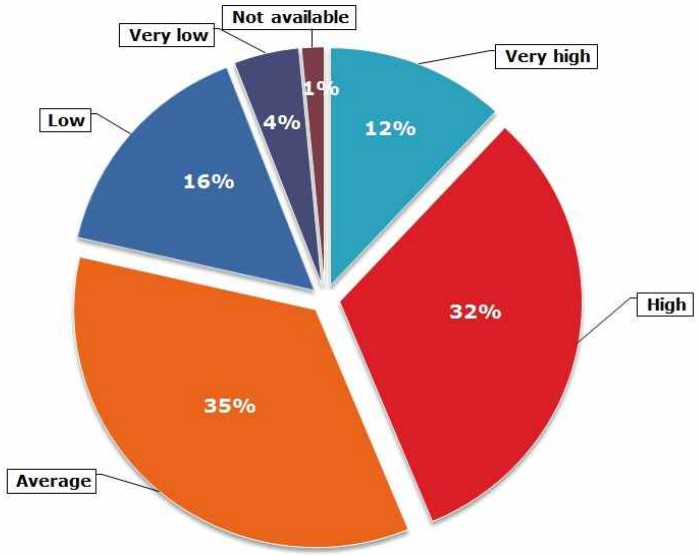
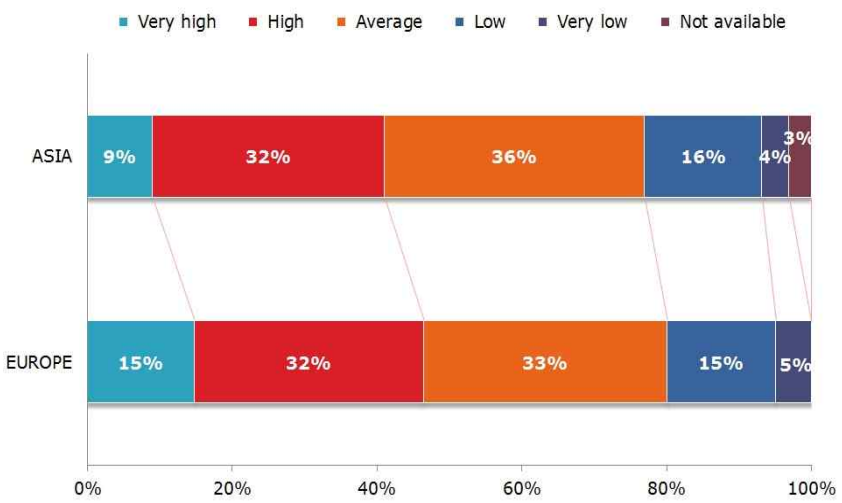


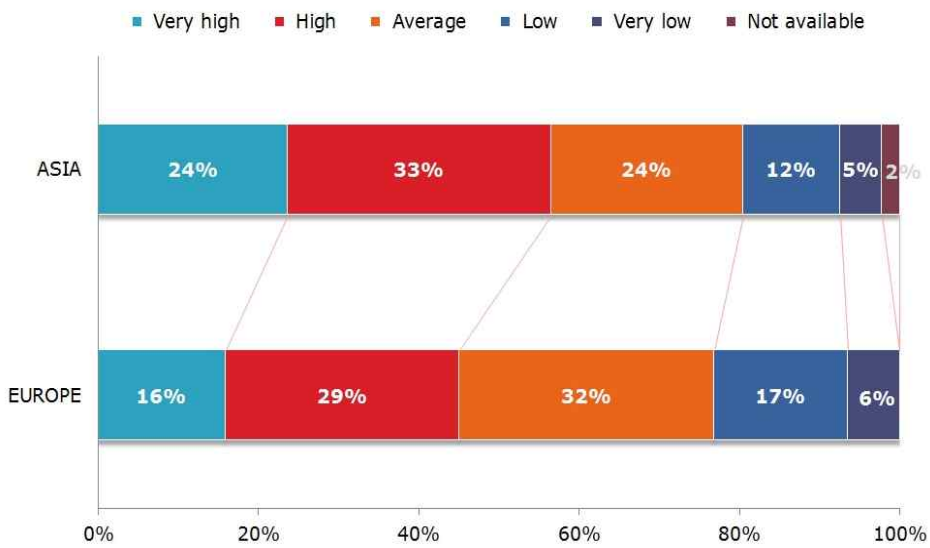

**Figure 112. Limit of capability in reliability assessment of product and process - by region**



# Lack of Financing to Eco-Innovate

45% of the European and 57% of the Asian SMEs indicated a high level of difficulty in internal funding for eco-innovation. Regarding external financing, 37% of European respondents and 51% Asian respondents indicated a high level of difficulty obtaining external financing such as venture capital or governmental funding.

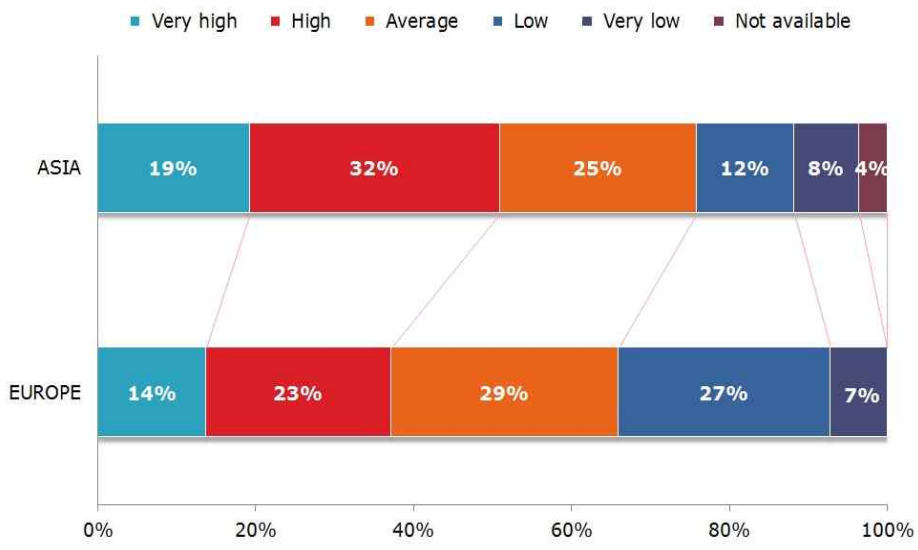
**Figure 113. Lack of internal funds - by region**




*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Lack of internal funds for eco-innovation)*

**Figure 114. Lack of external financing mechanism - by region**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Lack of external Finance, e.g. venture capital or government support)*



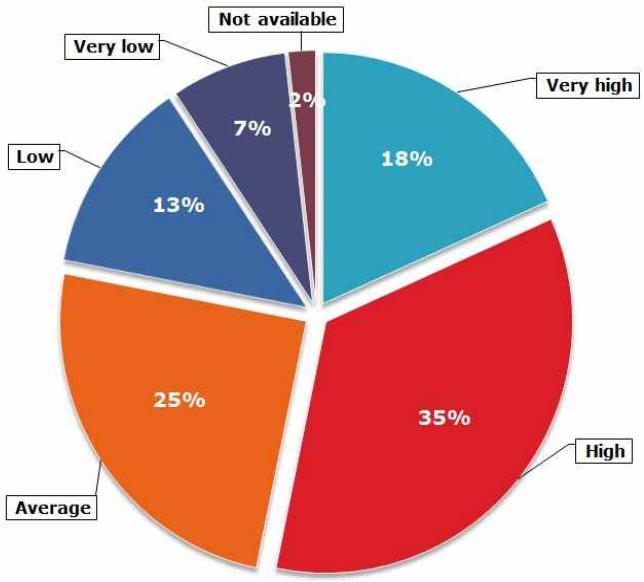
# *Shortage of R&D Personnel and Technological Capabilities*

53% of respondents indicated a high level of shortage of R&D personnel and technological capabilities.

51% of companies stressed that a shortage of production workers acts as a potential barriers to eco-innovation.

**Figure 115. Shortage of R&D personnel and technological capabilities - by region**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Lack of R&D personnel and technological capabilities within the enterprise)*



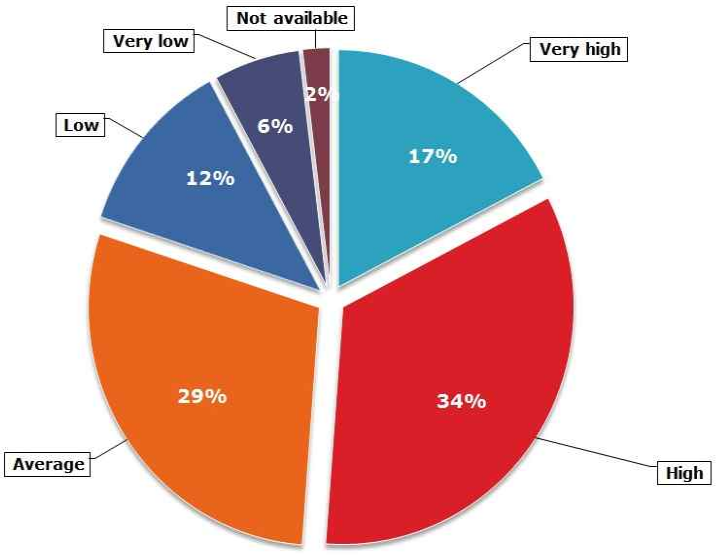




**Figure 116. Shortage of production workers - by region**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Lack of production worker)*

# *Finding Business Partners*

49% of respondents indicated that they recognized the absence of cooperative partners such as academics, research institution, large company, etc. as barriers to eco-innovation.

Both Asian and European small and medium enterprises have expressed difficulties finding appropriate business partners for eco-innovation.

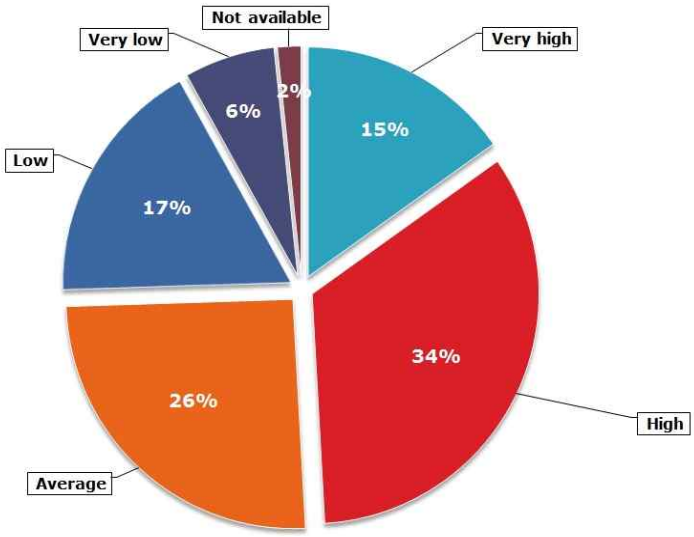
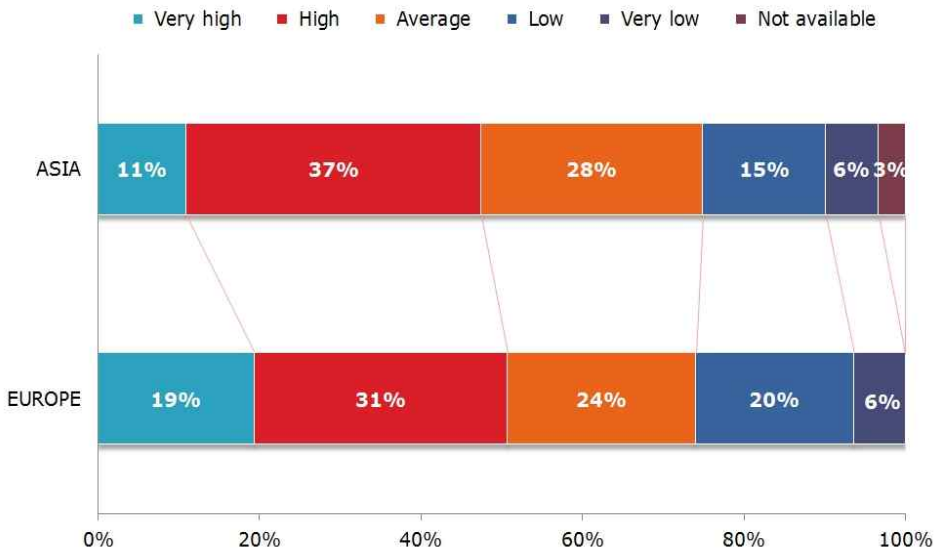



**Figure 117.**
**Absence of business partners**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*
*(Lack of cooperative partner, e.g. academics, research institutions, large companies)*

**Figure 118.**
**Absence of business partners**
**- by region**



# Market Uncertainty

43% of respondents indicated that the driver of eco-innovation was negatively impacted by uncertainty in market demand.

By region, 39% of the European and 48% of the Asian SMEs indicated difficulties with uncertainty of market demand.

**Figure 119. Uncertain demand in the market**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Uncertainty of market demand for eco-innovation)*

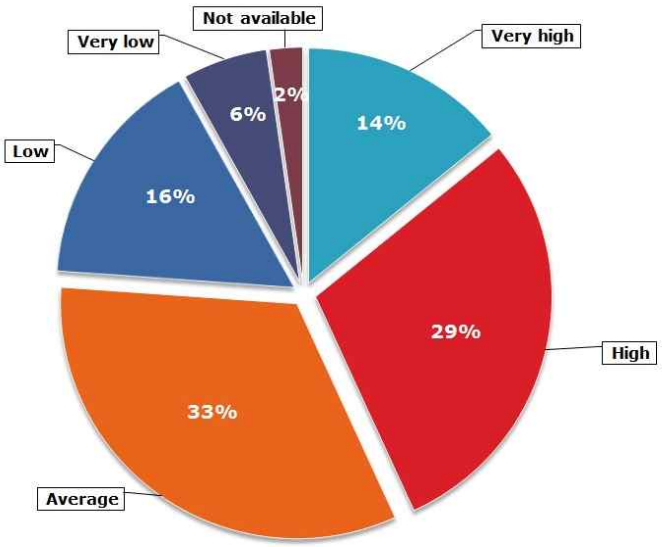
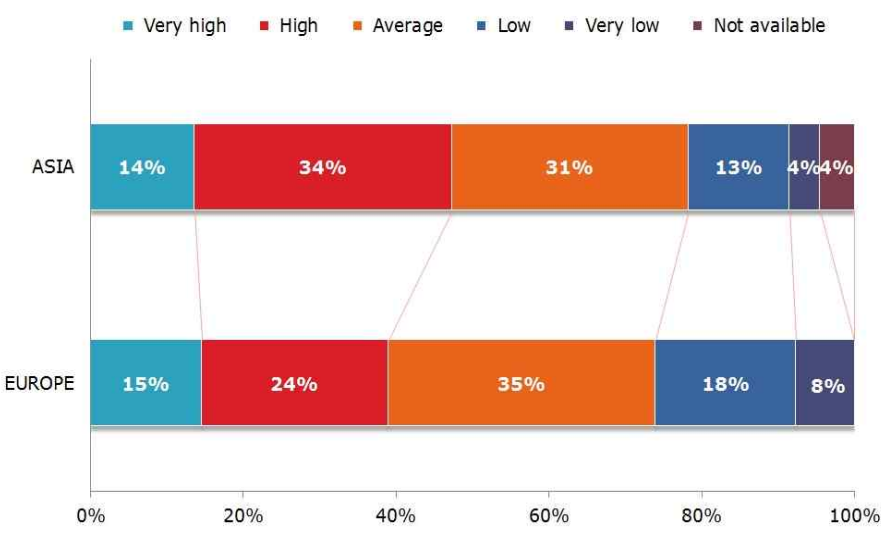



**Figure 120. Uncertain demand in the market - by region**



# Where to Sell - Market Entry

43% of respondents indicated a high difficulty of developing markets for eco-innovation products.

By region, 55% of the Asian and 30% of the European SMEs indicated difficulty of developing markets for eco-innovation.

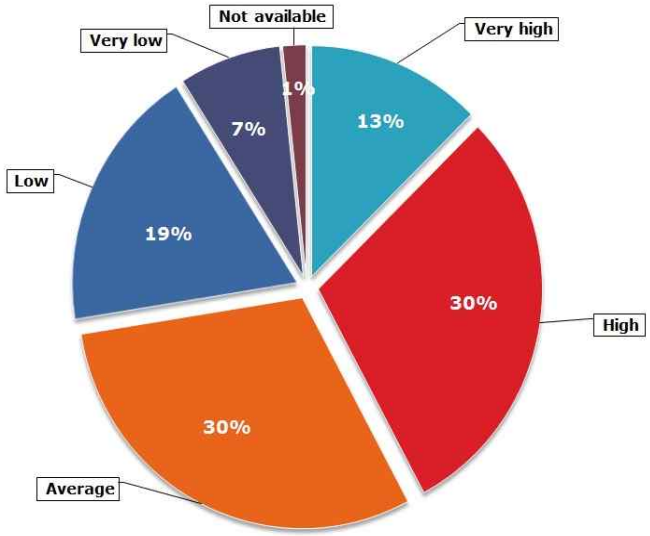
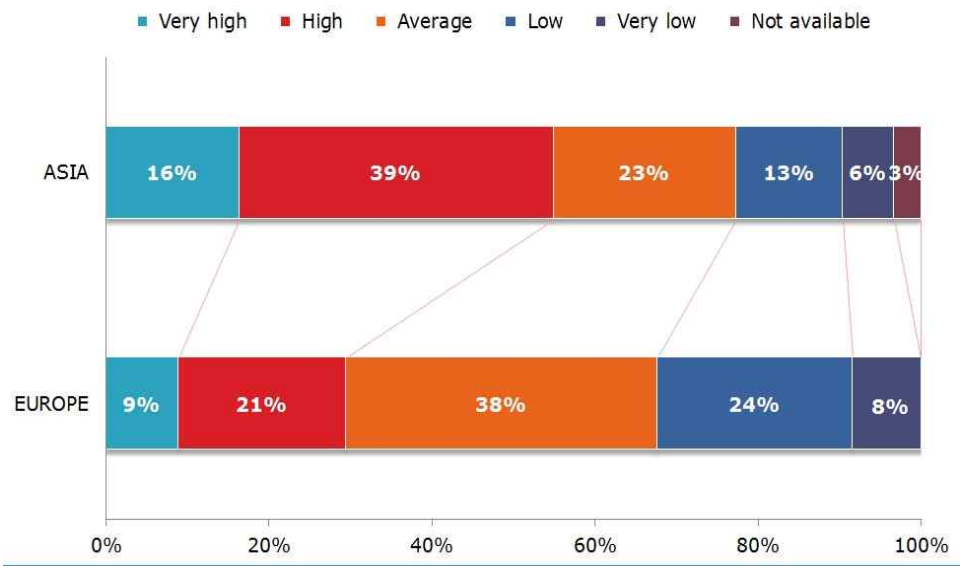



**Figure 121.**
**Finding a market**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*
*(Difficulty in finding a point of entry in markets)*

**Figure 122.**
**Finding a market**
**- by region**



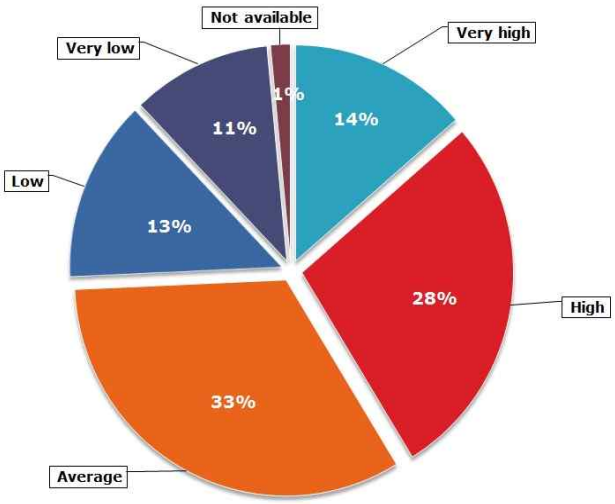
# Regulatory Compliance

42% of respondents indicated the need to comply with environmental regulations such as carbon emission, and energy regulations.

By region, Asian SMEs (51%) appeared to have more difficulties complying with regulations than European SMEs (32%).

**Figure 123. Difficulty with regulatory compliance**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Difficulty in coping with regulations)*



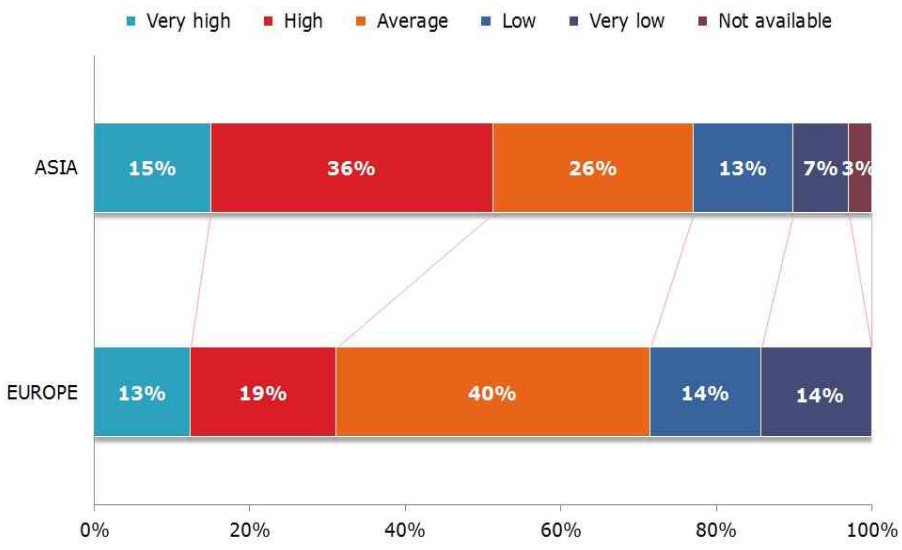




**Figure 124. Difficulty with regulatory compliance - by region**

# *Insufficient Infrastructure for Eco-Innovation*

38% of respondents indicated insufficient infrastructure as a strong barrier to eco-innovation.

30% of the European and 46% of the Asian SMEs indicated that eco-innovation is impossible due to a shortage of infrastructure.

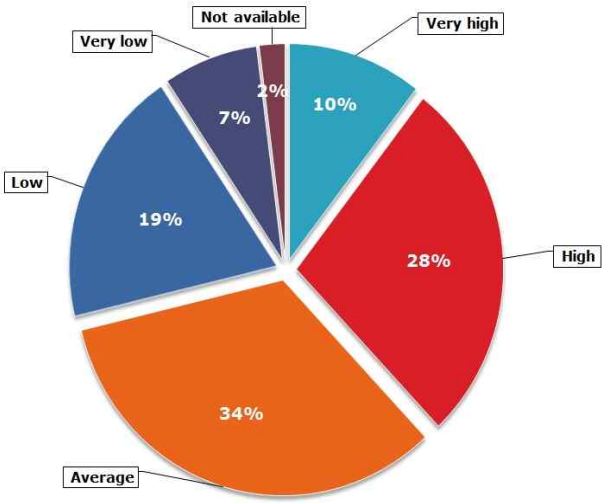
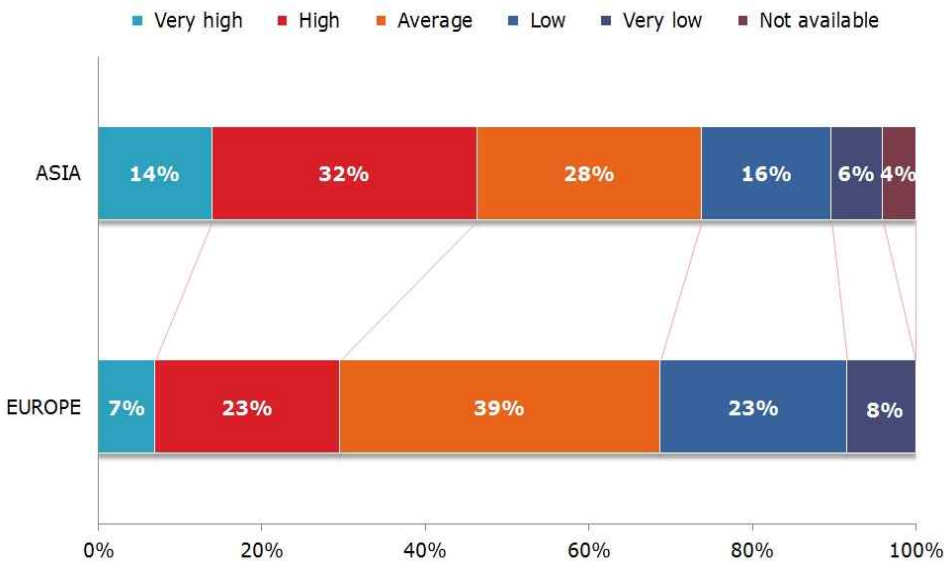



**Figure 125. Insufficient infrastructure for eco-innovation**

*Q: Please evaluate the level of barriers to an accelerated uptake of eco-innovation. (Insufficient infrastructure for eco-innovation)*

**Figure 126. Insufficient infrastructure for eco-innovation - by region**



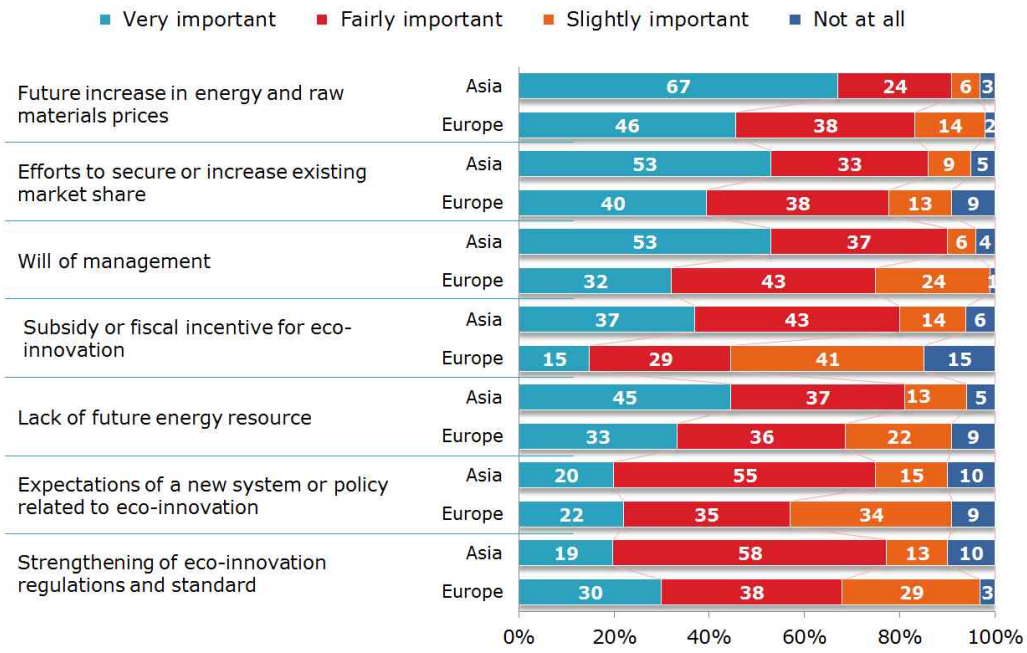
# *Chapter I*

# *7. Drivers for Eco-Innovation*

# *Price Pressure on Energy and Raw Materials*

**Figure 127. Level of impact of factors driving eco-innovation in SMEs in Asia and Europe**

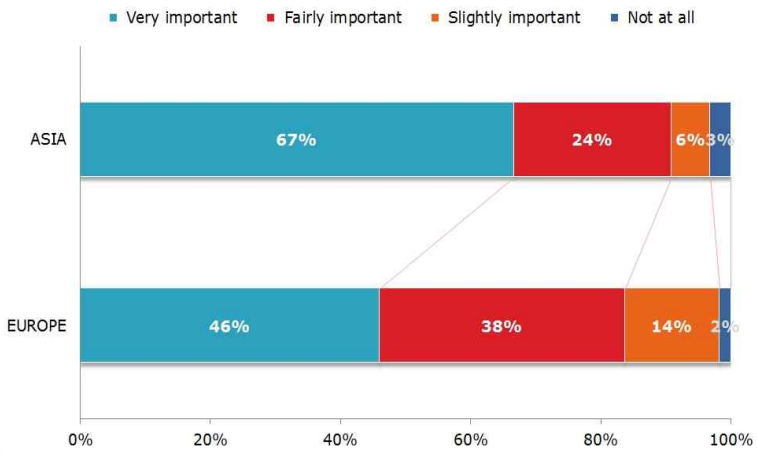
*Q: Please evaluate the importance of drivers of eco-innovation.*




87% of respondents indicated that high energy and materials prices are important (56% with very important, 31% with important). Regardless of region, respondents considered high energy and materials prices to be critical factors influencing their decisions to pursue eco-innovation.

**Figure 128. Future increase in energy and raw materials price - by region**

*Q: Please evaluate the importance of drivers of eco-innovation. (Future increase in energy and raw materials prices)*



# Securing Existing Market Share

82% of respondents indicated that the expansion or maintenance of market share is a very or fairly important factor driving eco-innovation.

In Asia and Europe, more than three-quarters of the respondents indicated the importance of market share (86% in Asia, 78% in Europe).

**Figure 129. Secure or increase existing market share**

*Q: Please evaluate the importance of drivers of eco-innovation. (Efforts to secure or increase existing market share)*

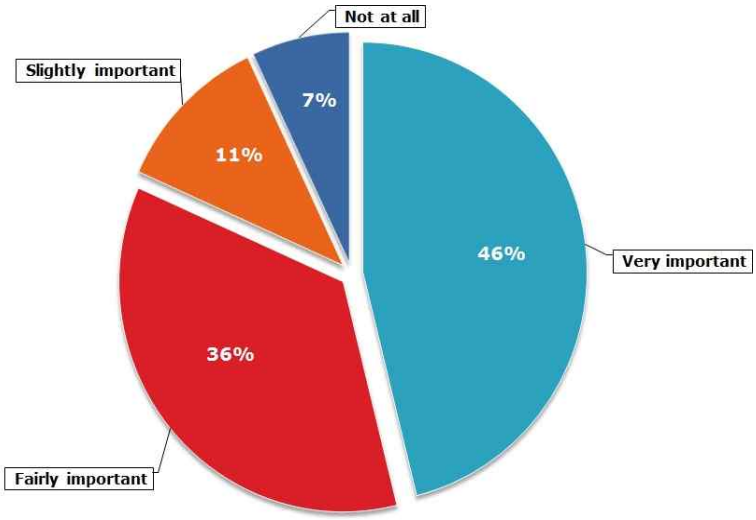
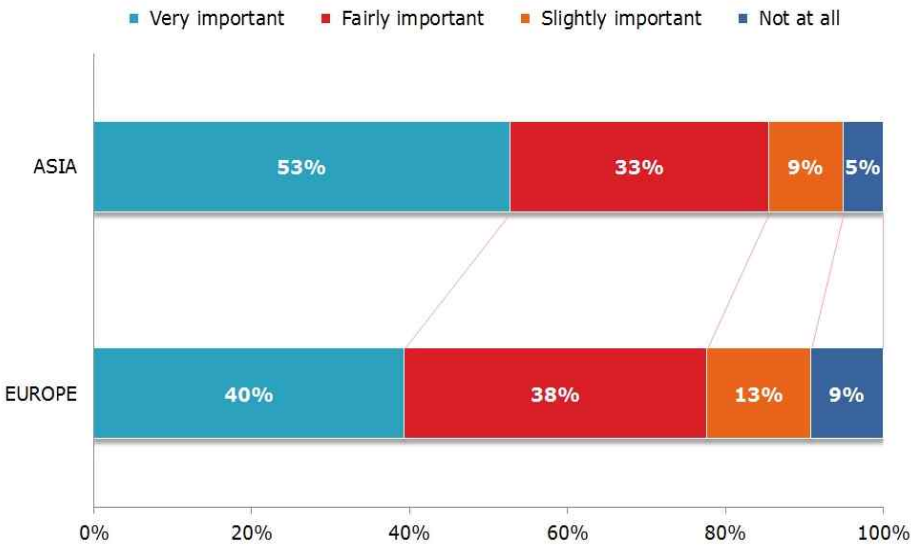



**Figure 130. Secure or increase existing market share - by region**



# Management Commitment

82% of respondents indicated that the commitment of management is very or fairly important for in-house eco-innovation. Only 18% of the respondents indicated minimal importance of management commitment.

By region, 75% of the European SMEs identified management commitment as one of the key drivers for eco-innovation. 90% of the Asian SMEs highlighted the critical importance of management commitment.

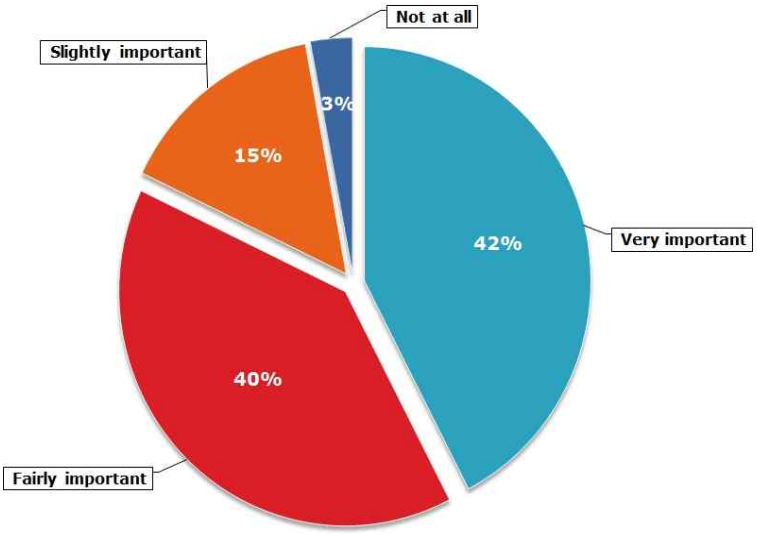



**Figure. 131 Commitment of management**

*Q: Please evaluate the importance of drivers of eco-innovation. (Will of management)*

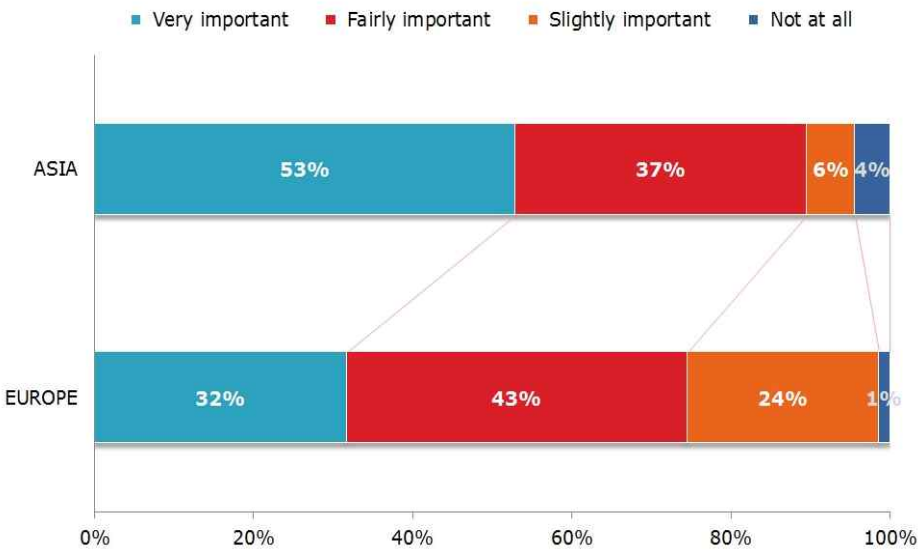



**Figure. 132 Commitment of management - by region**

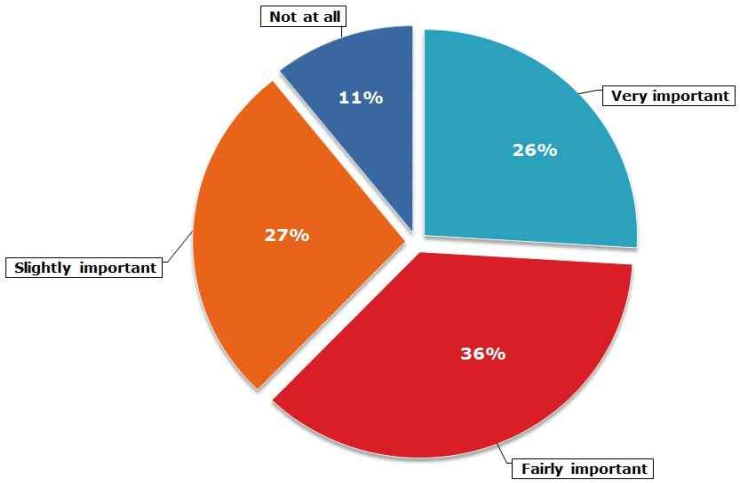
# Subsidies & Fiscal Incentives

36% of respondents indicated that subsidies and fiscal incentives were important drivers to accelerate eco-innovation. 26% of respondents believed that was "very important."

By region, 80% of the Asian and 44% of European SMEs considered subsidies and fiscal incentives to be important drivers of eco-innovation.

**Figure 133. Subsidies and fiscal incentives**

*Q: Please evaluate the importance of drivers of eco-innovation. (Subsidy or fiscal incentive for eco innovation)*



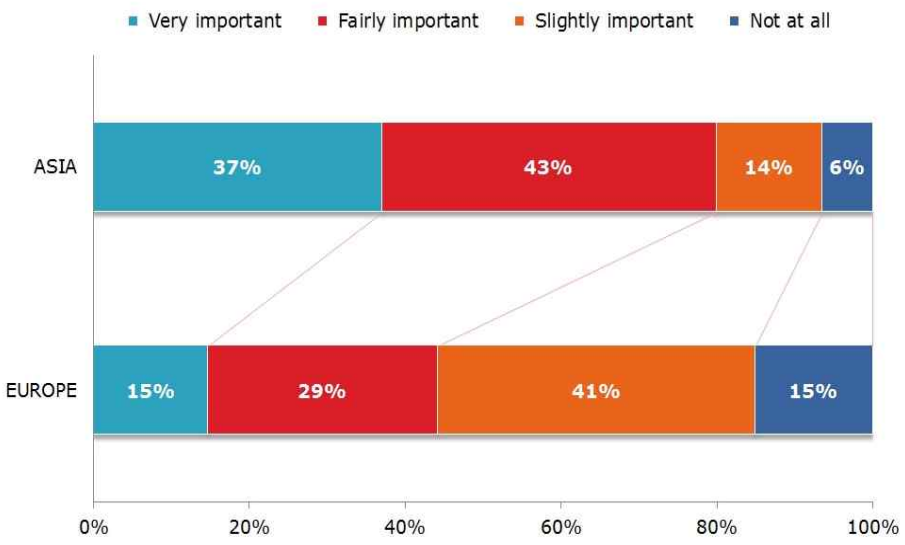




**Figure 134. Subsidies and fiscal incentives - by region**

# Raw Materials Scarcity

75% of respondents indicated that raw materials scarcity is an important determinant of eco-innovation (39% with "very important", 36% with "fairly important").

82% of Asian and 69% of European SMEs indicated that future raw materials scarcity was an important determinant of eco-innovation.

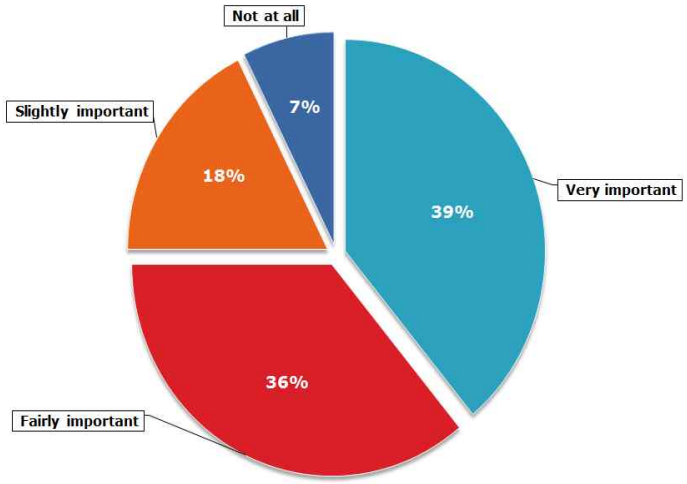
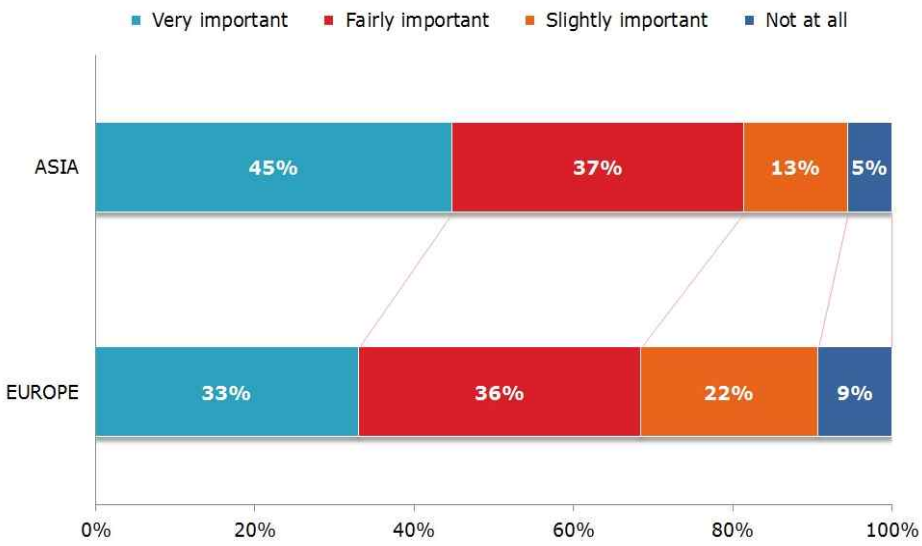



**Figure. 135**
**Future scarcity of raw materials**
**- by region**

*Q: Please evaluate the importance of drivers of eco-innovation.*
*(Lack of future energy resource)*

**Figure. 136**
**Future scarcity of raw materials**
**- by region**



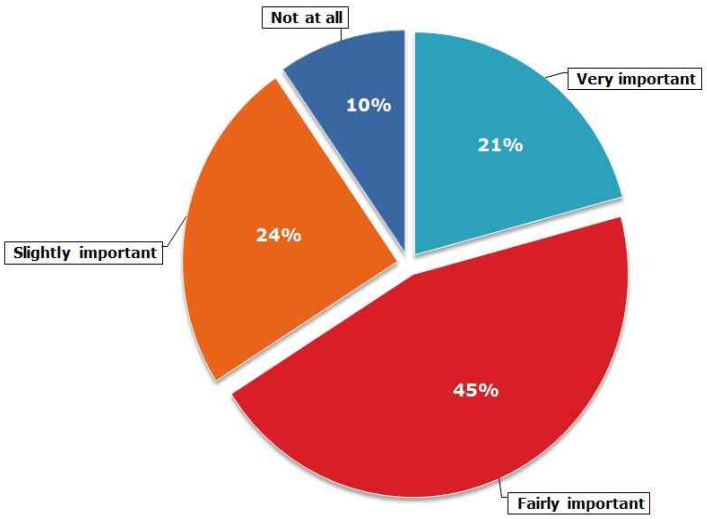
# *Emerging Regulatory Issues*

66% of respondents indicated that emerging regulations and policies are very important or fairly important drivers of eco-innovation.

75% of Asian and 57% of European SMEs regarded emerging regulations and policies as important as a driver of eco-innovation.

**Figure 137. Emerging regulations and policies**

*Q: Please evaluate the importance of drivers of eco-innovation. (Expectations of new system or policy related to eco-innovation)*



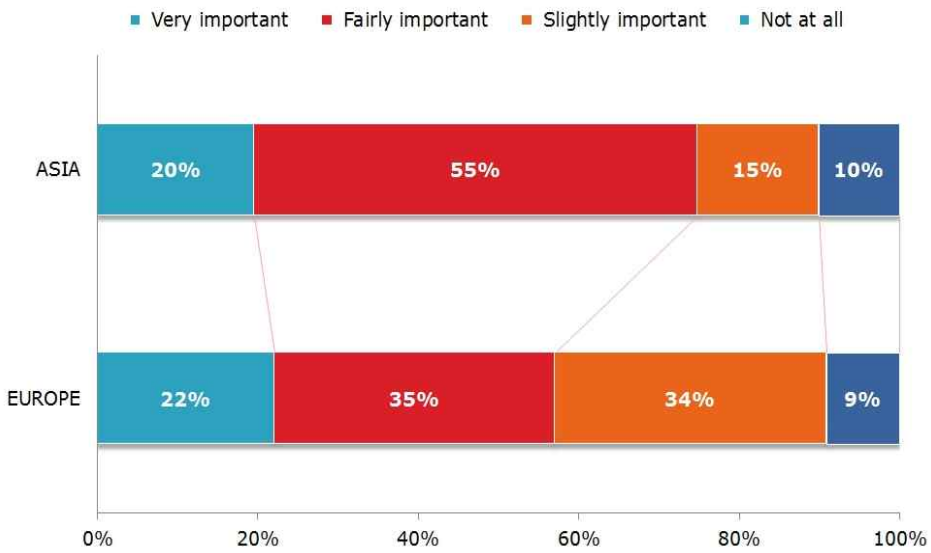




**Figure 138. Emerging regulations and policies - by region**

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# *Chapter II*

# *Country Survey*
# *&*
# *Expert Interview*

# Austria

Although there are no policies or measures specifically meant to regulate eco-innovation in Austria, there are some supportive measures and strategies related to Eco-innovation. The Austrian government has environmental protection laws and offers financial incentives for the development and application of innovative environmental technology, not least due to the high environmental awareness of the Austrian population.

| Policy & Measures | Description |
|---|---|
| **Programme on Technologies for Sustainable Development** | The initiative has been launched by the Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT). It initiates and supports trendsetting research and development projects and the implementation of exemplary pilot projects.[1] |
| **Climate and Energy Fund (KLIEN)** | KLIEN aims to ensure a sustainable energy supply, a reduction of greenhouse gas emissions and an increase in R&D activities in the climate and energy areas. It supports a broad range of research topics.[2] |
| **Green Public Procurement (GPP)** | In July 2010, the Austrian Council of Ministers adopted the Austrian Action plan for Sustainable Public Procurement (naBe-Actionplan). The naBe -Actionplan addresses all public authorities in Austria. It is compulsory at the federal level. The naBe-Action plan is a process and pursues the goal that the public sector buys more and more sustainable products and services.[3] |
| **E-Mobility (Elektromobilität)** | "E-Mobility" is supported by the Federal Ministry for Transport, Innovation and Technology. BMVIT aims to increase the proportion of hybrid and battery-powered vehicles on Austria's roads to 20 per cent by 2020.[4] |
| **Innovation Vouchers (Innovationsscheck)** | "Innovation Voucher" is an incentive for Austrian SMEs to cooperate with a knowledge providing institute. The programme is jointly financed by the Ministry of Transport, Innovation and Technology (BMVIT) and the Ministry of Economy, Family and Youth (BMWFJ) and it is managed by the Austrian Research Promotion Agency (FFG). |
| **JITU Program (Förderung von Gründung und Aufbau junger innovativer technologieorientierter Unternehmen)** | JITU is to promote young, innovative and technology intensive firms. The programme aims not only at reducing risks involved in getting started and providing targeted non-pecuniar support, but also at filling the finance gap which stems from the insufficiently working venture capital market in Austria.[5] |
| **COMET (Competence Centres for Excellent Technologies; AT 160)** | COMET is sponsored by the Ministry for Transport, Innovation and Technology (BMVIT) and the Ministry of Economy, Family and Youth (BMWFJ), which are following up on the success of their previous competence centre programmes. The Austrian provinces also support COMET with additional funds. The Austrian Research Promotion Agency FFG is responsible for the management of COMET.[6] |

Source: JRC, BMWFJ, UNCSD, EU Eco-Innovation Observatory[7]

# Denmark

Denmark has strong environmental policies and regulations, and there is high public awareness on the environment as an important political topic which keeps environmental standards high.

| Policy & Measures | Description |
|---|---|
| **Eco-Innovation Denmark** | In light of statutory regulation and eco-innovation, the following focus areas are prioritised: a) mapping how future regulation can promote opportunities for Danish technological development in selected areas; b) mapping new technological opportunities to tighten up environmental requirements – in Denmark, the EU and in international forums; c) mapping barriers in existing environmental regulations to the development of environmental technology in selected areas.[8] |
| **Energiteknologisk Udviklings- og Demonstrationsprogram EUDP (Development and demonstration programme for energy technologies)** | EUDP is funded under the action plan to help organizations to get an overview of national and international funding schemes. EUDP concentrates on three steps. 1) Research of technologies that are 4-7 years away from the market, 2) Development of projects where a technology is ready to become a concrete product, 1-4 years away from the market, and 3) Concrete demonstration projects of technologies that are 0-2 years away from the market.[9] |
| **Danish Advanced Technology Foundation** | The Danish National Advanced Technology Foundation is an independent body within the government administration that offers grants in the form of co-funding for high-technology research and innovation initiatives and projects.[10] |
| **Business Innovation Fund** | The aim of the Business Innovation Fund is to promote growth, employment and export by supporting business opportunities within green growth and welfare as well as providing support for change-over to exploit new business and growth opportunities in less favoured areas of the country.[11] |

Source: Danish Business Authority, Energi Styrelsen Denmark, EU Eco-Innovation Observatory,

# France

France has created the French Agency for Industrial Innovation since 2005. Its objective is to promote outstanding innovation projects in France. More than 50% of its initial financial support will be granted to eco-innovation. The goals of the agency is to foster cooperation between public research and private firms as well as European transnational partnerships. The scope of action of the agency covers a whole range of topics including environmental technologies such as energy and environment, green chemistry and biotechnology. The agency chooses among projects proposed by industrialists, then supports them financially through direct subsidies and / or advances. Achievements are also regularly checked.

| Policy & Measures | Description |
|---|---|
| **Finance Law (2010)** | Regarding environmental issues, the Finance Law (2010) extends the green innovations of the fiscal system (e.g., subsides for energy efficiency). At the fiscal level, the development of actions relating to renewable energy and the protection of biodiversity are encouraged, along with investments in transport infrastructure and prevention management. |
| **Research Tax Credit** | The Research Tax Credit (Crédit Impôt Recherche - CIR) is a measure aimed at supporting corporate R&D investments by means of tax incentives. The "New" Research Tax Credit replaces the old version in vigour from 1983 until 31 December 2003. On the basis of a simple declaration, companies can benefit from a tax reduction for a large range of research-related spending, including R&D personnel expenses, R&D subcontracting, patenting costs, etc. The eligible expenses for which firms apply to the Research Tax Credit are mainly associated with the human and technical resources allocated to research and subcontracting.[12] |
| **Competitiveness Clusters Policy 2.0** | The French government has launched the second phase of the competiveness cluster policy (Cluster 2.0) for a further 3 year-period (2009-2011) with a total budget of Euro 1.5 billion, meant to widen the scope of the competiveness clusters' activities. Amongst others, one priority include "to develop the support to new dimensions of the innovation ecosystem (human resources competences, IPR).[13] |
| **Strategic Investment Funds (Fonds Strategique d'Investissement )** | The Strategic Investment Fund (FSI) was launched in 2008 in order to help promising French enterprises obtain funding and secure their capital. The FSI is a limited company (societe anonyme - SA) which takes minority shares in French companies carrying out industrial projects that create economic benefits and competitiveness. The FSI capital is held by the "Caisse des Dépots et Consignations" (CDC) at 51% and by the State at 49%. At the time of its creation, this new fund was allocated with 6 billion euros. It has now increased up to 20 billion euros.[14] |

Source: European Commission (ETAP)[15], EU Eco-Innovation Observatory, Young & Global Partners

# Germany

The German National Sustainable Development Strategy of 2002 frames the overarching vision of sustainable development and sets up a wide range of indicators, quantitative targets and timetables. It looks at innovation as a driving force for sustainability and sustainability as a driving force for innovation. It also introduces the research and development programmes PROINNO, industrial joint research including ZUTECH and InnoNet.

| Policy & Measures | Description |
|---|---|
| **Action Plan Nanotechnology 2015** | The Action Plan Nanotechnology 2015 (Aktionsplan Nanotechnologie 2015) aims to ensure a sustainable use of nanotechnology, to use and realize the potentials of nanotechnology in terms of environment and climate protection and for a secure future energy supply. The plan is considered to be a concept for the safe use of nanotechnology without harming humans and the environment.[16] |
| **Roadmap Environmental Technologies 2020** | In the project "Roadmap 2020", funded by the German Federal Ministry of Education and Research, seven fields of environmental policy were investigated in order to explore to which extent research and development activities will be able to foster future environmental innovations. The purpose of the project was the identification of strategic options for research and development and their transfer into practice in the field of environmental technologies by 2020.[17] |
| **Integrated Energy and Climate Package (2007)** | Integrated Energy and Climate Package sees eco-innovation as playing an important role in the integrated energy and climate protection to achieve the goal of 40% CO2 reduction by 2020. Twenty-nine (29) fields of specific policy measures are addressed, such as market incentive programmes on renewable energy and energy efficiency in buildings, etc.[18] |
| **Master Plan on Environmental Technologies (Masterplan Umwelttechnologien)** | The Master Plan on Environmental Technologies (Masterplan Umwelttechnologien) sets out the measures on how to tap the major economic potential of environmental technologies for German industry, and further strengthen the link between instruments of environment and innovation policies. In a first step, the government will focus on environmental technologies in the field of water, raw materials and climate protection.[19] |
| **Environmental Innovation Programme** | First introduced in 1979 by the Federal Ministry of Environment, calls for innovative plants, process technologies and products which significantly reduce environmental pollution such as emissions, wastes, waste water and noise and contribute to the advancement of technologies and technical environmental specifications.[20] |
| **Central Innovation Program (ZIM)** | The Federal Ministry of Economics and Technology has supported SMEs in their innovation activities. Since 2008, over 9,500 innovative projects have been supported with some 1.2 billion Euro funding.[21] |
| **WING (Materials innovation for industry and society)** | The project of the Federal Ministry of Education and Research aims to strengthen technologies for sustainable development. The ten fields of the program address the important materials-based sectors of German industry (e.g., automotive, mechanical engineering, energy technology, chemical products, plastics and rubber products, metal production and processing, electrical, electronic products, aerospace, life sciences / medical technology).[22] |

Source: Young & Global Partners, BMBF, EU Eco-Innovation Observatory

# Italy

There are no links being made at the policy level between cluster policy and eco-innovation. Eco-innovation in the country is mainly understood as environmental performance improvement, and not innovation in the cleantech sector. Access to national environmental regulation is well provided. However, information channel for SMEs to access non-EU environmental regulation is limited.

| Policy & Measures | Description |
|---|---|
| **Italian National Agency for New Technologies, Energy and the Environment (ENEA)** | The Italian National Agency for New Technologies, Energy and the Environment (ENEA) is a government research agency operating in the fields of energy, the environment and new technologies to support competitiveness and sustainable development. In "2009 Energy & Environment Report", it stresses the fact that research and innovation are the two keys to be on top of the energy revolution in particular investing in photovoltaic, biofuels, and the new generation of nuclear energy.[23] |
| **Green Public Procurement** | At the national level, a green public procurement (GPP) protocol has been rolled out in 2008 (following earlier steps since 2002 - CIPE). Only a few criteria for environmental sustainability of specific goods have been established to date, however other criteria are being developed. The national electronic website for public tenders and acquisitions (Consip) provides generic input on facilitating of eco-innovation and environmental sustainability of purchased goods. Specific local initiatives promote green acquisition of products for the government (e.g., http://www.compraverde.it/www.acquisitiverdi.it, are examples of websites on green public acquisitions. |
| **Smart Town Initiative** | In collaboration with the National Research Council (CNR) and major Italian technology providers, Smart Town Initiative aims to combine a more rational use of municipalities' economic and territorial resources with the enhancement of services for citizens. This initiative also seeks to be a functional instrument to meet environmental targets defined by the Kyoto Protocol in terms of greenhouse gas (GHG) emissions. |

Source: Young & Global Partners, EU Eco-Innovation Observatory

# United Kingdom

Amongst others, the Technology Strategy Board (TSB) works in partnership with the Research Councils, Regional Development Agencies (RDAs), devolved Administrations and Government departments promoting innovation through investing in programmes and projects in UK priority sectors. TSB business initiatives have provided support to 1500 unique businesses, of which approximately 60% are SMEs.

| Policy & Measures | Description |
|---|---|
| **Government Review of Waste Policy in England 2011** | The Review discusses the sustainable use of materials and waste prevention, regulation and enforcement, energy recovery, landfill and infrastructure planning. A number of commitments are set out, one of which is to reduce the burden of regulation and enforcement on legitimate businesses, but target those who persistently break the law. An Action Plan accompanies the Review.[24] |
| **Small Business Research Initiative (SBRI)** | The program is run by the Technology Strategy Board and aims to use government procurement to drive innovation and provides business opportunities for innovative companies whilst solving the needs of government departments.[25] |
| **Energy Efficient Whitehall** | An SBRI initiative to retrofit government buildings in London to promote energy efficiency and low carbon emissions.[26] |
| **Ultra-Efficient Lighting for Homes** | The Technology Strategy Board and DEFRA are launching a £1.2m SBRI initiative to fund development work on ultra-efficient lighting (UEL) for the domestic environment.[27] |
| **Retrofit for the Future** | The aim is to Retrofit UK social housing stock in order to meet future targets in reduction of CO2 emissions and energy use. This competition is open to all companies, including social landlords and companies not currently engaged in the construction sector. There is no limit on the size or type of company applying to this competition, and applications that enable small companies to participate within the supply chain are encouraged.[28] |
| **Waste & Resource Action Programme (WRAP)** | It is a non-profit quasi-autonomous non-governmental organization (quango) created in 2000 as part of the UK Government's waste strategies. WRAP's has two priorities: a) to help the UK Governments to meet their national and international commitments and build the green economy; and b) to support resource efficiency in the UK so that householders, businesses and the public sector save money and make better use of resources.[29] |

Source: Technology Strategy Board, Department for Environment, Food and Rural Affairs, UK Department for Business, Innovation and Skills, EU Eco-Innovation Observatory

# China

China has more than 600 environmental laws, regulations and policies that may have direct or indirect relations on eco-innovation. However, there is no policy or legislation directly dedicated to eco-innovation.

| Policy & Measures | Description |
|---|---|
| **Green Government Procurement** | Under the Notice on Compulsory Government Procurement of Energy Saving Products and the Implementation Opinion on Government Procurement of Energy Saving Products, China implements energy-efficiency policy. There are two types of energy-saving products included in the policy, "priority energy saving products" and "mandatory energy saving products". |
| **12th Five-Year Plan on National Environmental Protection Laws and Environmental Economic Policy Development** | During 2011—2015, various laws, regulations, and regulatory rules are going to be adopted or amended, including Regulation on Compensation for Ecosystem, Catalogue on Enterprise Income Tax Preferential Policy on Resource Utilization, Catalogue on Enterprise Income Tax Preferential Policy on Using Energy and Water Conservation Equipment, Catalogue on Enterprise Income Tax Preferential Policy on Using Environmental Protection Equipment, etc. |
| **List of Key State-monitored Pollution Sources in 2010** | The List of Key State-monitored Pollution Sources in 2010 was published by the Ministry of Environmental Protection in order to strengthen the supervision and management of Major Pollution Sources. 4,547 facilities are considered as state pollution sources due to wastewater discharge, 3,472 facilities are considered as state pollution sources due to air emissions and amongst those, 863 facilities are considered as state pollution sources both because of wastewater and air emissions. 1,814 city sewage treatment plants also fall into the List of 30 December 2009. |
| **Renewable Energy Law** | It has been 4 years since the Renewable Energy Law of 28 February 2005 entered into force on 1 January 2006. The Renewable Energy Law of 2005 offers discounted loans for renewable energy projects and encourages entities and individuals to use renewable energy. Fiscal incentives and policies have achieved excellent results: renewable energy accounted for around 9 per cent of national power consumption in 2008 compared to 3 per cent in 2004. |
| **Circular Economy Promotion Law** | The Circular Economy Promotion Law of 29 August 2008 promotes several systems such as the circular economy planning system, the circular economy evaluation system, the extended producer responsibility system, and the supervision system on the companies with high energy and water consumption, etc. |

Source: Young & Global Partners

# India

India focuses on 'frugal innovation' that produces more 'frugal cost' products and services that are affordable by people at low levels of incomes without compromising the safety, efficiency, and utility of the products.

| Policy & Measures | Description |
|---|---|
| **Scheme on Labelling of Environment-Friendly Products (ECO-Mark)** | The Ministry of Environment and Forest resolution dated 20 February 1991 established a voluntary scheme on labelling of environmentally-friendly products. The scheme operates on a national basis and provides accreditation and labeling for household and other consumer products which meet certain environmental criteria along with quality requirements of the Indian Standards for that product. The label is known as the "ECOMARK".[30] |
| **Scheme Waste Minimisation** | The Guidelines for Submission of Proposals under the Scheme Waste Minimisation in Small and Medium Industries were published in April 2008 to provide information on the application procedures for financial assistance from the Ministry of Environment. The programme was set up to achieve waste reduction through optimization in one or more units of small and medium sized enterprises (where the investment cost is less than Rs.5.00 crores, i.e. Rs. 50,000,000), but also to build confidence among other industrial units to adopt similar initiatives. Under the Scheme, an application for financial assistance may be made by using the attached application form in the Guidelines. The project duration should not exceed twelve months. Priority Industrial Sectors laid down in the Guidelines for submission of proposals on Waste Minimization for the period of 2008-2009 are as follows Electroplating; Bulk Drug/ Pharmaceuticals; Steel rolling mills; activated carbon-charcoal, etc.[31] |
| **National Environment Policy** | In 2006, the Ministry of Environment and Forests published the National Environment Policy (NEP) aimed at guiding future regulatory reform and action regarding environmental protection. It sets out a wide range of objectives with regards to forests and wildlife, biodiversity, traditional knowledge and natural heritage, freshwater and coastal resources, mountain ecosystems, pollution abatements and climate change. Further the NEP addresses the use and strengthening of environmental standards, management systems, certification and indicators, the use of clean technology, improving environmental awareness and developing required partnerships and stakeholder involvement.[32] |

Source: Ministry of Environment and Forest India

# *Indonesia*

Indonesia does have extensive environmental policy and regulations. However, there is no dedicated policy or legislation on Eco-innovation.

| Policy & Measures | Description |
|---|---|
| **Environmental Performance Rating Program (PROPER)** | The Ministry of Environment initiated a public environmental reporting program called Company's Environmental Performance Rating Program (PROPER) in 1995. PROPER rates companies' environmental management compliance for water and air pollution control, hazardous waste management and Environmental Impact Assessment.[33] |
| **Import Duty Exemption for Equipment and Material Used to Prevent Environmental Pollution** | The Ministry of Finance issued Regulation No. 101/PMK 04/2007 regarding Import Duty Exemption for Equipment and Material Used to Prevent Environmental Pollution. The regulation is aimed at industrial companies who would like to manage their own waste or businesses undertaking waste management activities, which need to import machines, installations, or biological or chemical substances intended to process waste.[34] |
| **Tax and Customs Incentives for the Use of Renewable Resources** | Regulation No. 24/PMK.011/2010 regarding Tax and Customs Incentives for the Use of Renewable Resources aims to provide financial advantages for companies that use or deal with renewable resources. Through the regulation, the government encourages companies to use renewable resources in their activities and to reduce that country's dependency on non renewable resources. The advantages include: for income tax (pajak penghasilan) by reducing net income by 30% (from total investment) and by dividing it into 6 years (thus 5% per year); depreciation rearrangement; reduction of value added tax (Pajak Pertambahan Nilai); import duty (Bea Masuk) exemption for equipment to support renewable resources activity, etc. |

Source: World Bank, ASEAN, Young & Global Partners

# Japan

In Japan, the following ministries are involved in eco-innovation: Ministry of the Environment (MOE), Ministry of Economy, Trade and Industry (METI), Ministry of Education, Culture, Sports, Science and Technology (MEXT), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Council for Science and Technology Policy (CSTP). METI is a key driver for innovation, including eco-innovation in Japan. METI believes that eco-innovation will provide a source of international competitiveness not easily emulated by other countries and will function as an economic engine compatible with both people and the environment serving as a world model for an innovation-driven sustainable industry and society.

| Policy & Measures | Description |
|---|---|
| **Third Science and Technology Basic Plan (2006-2010)** | This is the third in a series of science and technology (S&T) plans. It builds on the Science and Technology Basic Law of 1995. One of the 6 specific goals of this plan is Goal 3: "Economic Growth and Environmental Protection" which is part of the objective: Maximize National Potential, to create a competitive nation for achieving sustainable growth. The plan makes grants available for research.[35] |
| **Intellectual Property Strategic Programmes** | Intellectual Property Strategy Headquarters (IPHQ), which was established in March 2003 based on the Intellectual Property Basic Act, has annually formulated the Intellectual Property Strategic Programmes (IPSP). The IPSP sets out to promote innovation by promoting intellectual creation, appropriately protecting such creation and accelerating its effective exploitation.[36] |
| **Global Environment Research Fund** | The Global Environment Research Fund (GERF) is a competitive grant scheme for global environmental research, initiated in 1990 with calls for proposals. Since then, the GERF has played a role as a core fund in Japan for promoting global environmental studies through interdisciplinary interaction among natural and social sciences.[37] |
| **J-ETV** | Japan has had an environmental technology verification programme since 2003– J-ETV (Japan Environmental Technology Verification Programme). The objective is to promote the spread of technology by having independent parties verify the performance of the technologies.[38] |
| **Green public Procurement** | Green public procurement became mandatory in Japan in 2001, when the law on the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Law on Promoting Green Purchasing) was passed. The law requires all governmental institutions to develop green procurement policies, set targets, implement and report to the Environment Minister every year. |
| **Top Runner Programme** | The Top Runner Programme works by setting energy efficiency targets at industry level, based on the value of the most energy-efficient products on the market at the time; targets are periodically revaluated and aligned on the performance of the best in class.[39] |

Source: Ministry of the Environment Japan, OECD, Energy Conservation Center Japan

# South Korea

South Korea has more than 500 environmental policies and regulations that directly and indirectly influence eco-innovation. South Korea, which has often promoted joint research and development between state think tanks and large conglomerates, and has emerged as a leading innovator for electronics and telecommunications products, is trying to reposition the country as a leader in green technologies.

Under the Act on 3 August 2007 the Presidential Commission on Sustainable Development must establish a 20-Years Framework Strategy for National Sustainable Development. With the establishment of Framework Strategies at the local and national level, competent ministries and local authorities have to make a five-year implementation plan. By developing a national sustainable development index and a local sustainable development index, the government and local authorities will carry out sustainability assessment every two years (FASD-Art.12).

| Policy & Measures | Description |
|---|---|
| **Act on the Promotion of Government Procurement for Environmentally-Friendly Goods** | Pursuant to the Act on the Promotion of Government Procurement for Environmentally-Friendly Goods of 31 December 2004, clearer definition of environmentally-friendly products for procurement purposes and standard procedures for purchasing the products are set up. |
| **Act on Environmental Technology Development and Support** | Under the Act on Environmental Technology Development and Support, the purchase of products with eco-labels are promoted by government institutions. The Law on the Promotion of Environment-friendly Industrial Structures provides financial incentives to industrial facilities which have clean production technology, and their procurement of environmentally-friendly equipment is promoted by the governmental institutions. |
| **Operation Rules on Green Certification Systems** | The Operation Rules on Green Certification Systems, issued on 14 April 2010, define pertinent terms and list eligible green technology, and provide responsibilities and designation standards for Green Certification assessment bodies. |

Source: Young & Global Partners

# Vietnam

Vietnam does not have specific policy or legislation dedicated to eco-innovation.
Decision No. 55/2007/QD-TTq approving the list of priority and spearhead industries for the 2007-2010 period, with a vision to 2020, and a number of incentive policies for these industries was published on 23 April 2007. The Appendix to the Decision considers as priority industries: textile, leather, plastics, processing of agricultural products, steel, aluminum bauxite and chemicals production.

| Policy & Measures | Description |
|---|---|
| **Certification of Thorough Pollution Treatment by Seriously Polluting Establishments** | Decision No. 10/2006/QD-BTNMT of 21 August 2006 promulgates the Regulation on Certification of Thorough Pollution Treatment by Seriously Polluting Establishments under the Prime Minister's Decision No. 64/2003/QD-TTg. The Regulation applies to 4,295 establishments causing serious pollution problems. A number of measures are proposed for these establishments in order to decrease environmental pollution. The establishments may enjoy tax exemption and/or other reduction benefits if they apply clean and environmentally-friendly technologies or implement other measures that reduce pollution levels. |
| **Vietnam Quality Award (VQA)** | The Vietnam Quality Award (VQA) was established in 2005 in accordance with Decision No. 1352-QD/TDC by the Ministry of Sciences, Technology and Environment. The VQA aims at encouraging production business and service organizations to improve the quality of their activities for greater competitiveness in the domestic and overseas markets. |
| **Environmental Prize** | The Ministry of Natural Resource and Environment promulgated Decision No. 02/2004/QD-BTNMT provides an environmental prize for replacing the Decision No. 05/QD-BKHCNMT dated 11/4/2001 by the Minister of Science, Technology and Environment. |

Source: ASEAN, Young & Global Partners

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# *Chapter III*

# *Conclusion : Eco-Innovation Gateway for Asia and Europe*

# Conclusion

As eco-innovation can contribute environmental improvement (e.g., reduction of greenhouse gas emissions) at a lower cost, improve competitiveness of companies and create new business opportunities, ASEM member countries have been implementing various eco-innovation policies. There has also been more awareness among policy makers regarding eco-innovation as a growth engine in new, alternative business models for job creation. At the same time, companies have started pursing green innovation in new business models and production methods, and strong relations and benefits have been identified between proactive companies which invest in innovation and green innovation.

Pursuant to this survey on eco-innovation, most companies appeared to recognize the benefits and utility of eco-innovation. In particular, the increase of raw materials cost in the total cost has caused European companies to improve their supply chains and develop new business; Asian companies have introduced highly efficient equipment and replaced raw materials in their production processes. European companies were significantly more involved with eco-design, weight reduction of product packaging, and certification of environmentally-friendly products. The active involvement of European companies was rather easily identifiable by considering their percentage of established organizations for eco-innovation, eco-innovation staff, publication of environmental reports or sustainability reports, and environmentally-friendly certifications.

Although both Asian and European companies indicated “improvement of corporate reputation and product image” as main motivators of eco-innovation, Asian companies were highly interested in government incentives.

Regarding information accessibility, Asian companies showed a more passive approach (e.g., requiring a cost-free information source) compared to the active approach of European companies (e.g., using paid consulting). Asian companies also indicated difficulties accessing information and shortage of credible information.

Regarding policy needs for eco-innovation, both Asian and European companies indicated need for support for green R&D and sharing of best practices. As obstacles against eco-innovation, shortage of internal financial resources and of human resources was identified. As drivers for eco-innovation, awareness of management and materials cost were identified.

# *Annex I*

# *Survey Data Table*

## *[Table 1-1] eco-innovation Awareness*

| | | Number of cases | Yes (%) | No, I can understand the meaning by reading the term (%) | No, I do not understand the meaning of the term. (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|
| Total | | 1180 | 63.6 | 32.1 | 4.0 | 0.3 | 100 |
| ***By country*** | | | | | | | |
| | KR | 100 | 30 | 57 | 12 | 1 | 100 |
| | CN | 96 | 65.6 | 28.1 | 4.2 | 2.1 | 100 |
| | JP | 99 | 80.8 | 16.2 | 3.0 | 0 | 100 |
| | IN | 101 | 51.5 | 31.7 | 16.8 | 0 | 100 |
| | ID | 100 | 29 | 60 | 11.0 | 0 | 100 |
| | VN | 100 | 62 | 38 | 0 | 0 | 100 |
| | DE | 100 | 68 | 32 | 0 | 0 | 100 |
| | FR | 100 | 82 | 18. | 0 | 0 | 100 |
| | UK | 96 | 79.2 | 20.8 | 0 | 0 | 100 |
| | IT | 93 | 63.4 | 36.6 | 0 | 0 | 100 |
| | AT | 98 | 71.4 | 28.6 | 0 | 0 | 100 |
| | DK | 97 | 82.5 | 17.5 | 0 | 0 | 100 |
| ***By region*** | | | | | | | |
| | ASIA | 596 | 53.0 | 38.6 | 7.9 | 0.5 | 100 |
| | EUROPE | 584 | 74.5 | 25.5 | 0 | 0 | 100 |

*Q1-1: Have you heard of the term "Eco-innovation" prior to this survey ?*

***[Table 2-1-1] The percentage of material cost in the total cost of company in 2007***

| | | Number of cases | 0~9% (%) | 10~19% (%) | 20~29% (%) | 30~39% (%) | 40~49% (%) | Above 50% (%) | N/A (%) | Total (%) | Average (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 1.5 | 6.5 | 15.2 | 22.8 | 20.4 | 32.4 | 1.2 | 100 | 41.08 |
| ***By country*** | | | | | | | | | | | |
| | KR | 100 | 1 | 3 | 8 | 10 | 12 | 65 | 1 | 100 | 48.94 |
| | CN | 96 | 2.1 | 5.2 | 5.2 | 12.5 | 9.4 | 65.6 | 0 | 100 | 52.04 |
| | JP | 99 | 3 | 8.1 | 17.2 | 31.3 | 26.3 | 14.1 | 0 | 100 | 34.65 |
| | IN | 101 | 0 | 0 | 4 | 13.9 | 27.7 | 54.5 | 0 | 100 | 48.11 |
| | ID | 100 | 0 | 3 | 4 | 15 | 16 | 62 | 0 | 100 | 50.84 |
| | VN | 100 | 0 | 1 | 0 | 15 | 24 | 60 | 0 | 100 | 57.05 |
| | DE | 100 | 8 | 8 | 41 | 18 | 23 | 2 | 0 | 100 | 29.07 |
| | FR | 100 | 0 | 12 | 28 | 28 | 18 | 10 | 4 | 100 | 31.69 |
| | UK | 96 | 1 | 15.6 | 12.5 | 34.4 | 13.5 | 20.8 | 2.1 | 100 | 36.09 |
| | IT | 93 | 0 | 10.8 | 14 | 33.3 | 31.2 | 9.7 | 1.1 | 100 | 34.93 |
| | AT | 98 | 1 | 3.1 | 27.6 | 25.5 | 22.4 | 17.3 | 3.1 | 100 | 36.37 |
| | DK | 97 | 2.1 | 9.3 | 20.6 | 38.1 | 21.6 | 5.2 | 3.1 | 100 | 31.59 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 596 | 1 | 3.4 | 6.4 | 16.3 | 19.3 | 53.5 | 0.2 | 100 | 48.6 |
| | EUROPE | 584 | 2.1 | 9.8 | 24.1 | 29.5 | 21.6 | 10.8 | 2.2 | 100 | 33.24 |

*Q2-1: What was the percentage of material cost in the total cost of your company in 2007 ?*

***[Table 2-1-2] The percentage of material cost in the total cost of your company in 2010***

| | | Number of cases | 0~9% (%) | 10~19% (%) | 20~29% (%) | 30~39% (%) | 40~49% (%) | Above 50% (%) | N/A (%) | Total (%) | Average (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 2.8 | 8.8 | 17.8 | 26.9 | 20.5 | 21.8 | 1.4 | 100 | 37.13 |
| ***By country*** | | | | | | | | | | | |
| | KR | 100 | 1 | 6 | 10 | 11 | 28 | 43 | 1 | 100 | 44.64 |
| | CN | 96 | 4.2 | 4.2 | 4.2 | 15.6 | 12.5 | 58.3 | 1 | 100 | 48.6 |
| | JP | 99 | 4 | 11.1 | 18.2 | 29.3 | 28.3 | 9.1 | 0 | 100 | 33.38 |
| | IN | 101 | 0 | 0 | 6.9 | 33.7 | 31.7 | 27.7 | 0 | 100 | 42.66 |
| | ID | 100 | 0 | 2 | 9 | 27 | 26 | 36 | 0 | 100 | 44.15 |
| | VN | 100 | 0 | 1 | 10 | 27 | 19 | 43 | 0 | 100 | 47.86 |
| | DE | 100 | 11 | 10 | 27 | 27 | 19 | 6 | 0 | 100 | 30.1 |
| | FR | 100 | 2 | 16 | 31 | 34 | 7 | 6 | 4 | 100 | 28.79 |
| | UK | 96 | 3.1 | 16.7 | 25 | 22.9 | 10.4 | 18.8 | 3.1 | 100 | 32.24 |
| | IT | 93 | 1.1 | 15.1 | 17.2 | 33.3 | 24.7 | 7.5 | 1.1 | 100 | 32.21 |
| | AT | 98 | 3.1 | 9.2 | 28.6 | 23.5 | 28.6 | 4.1 | 3.1 | 100 | 32.09 |
| | DK | 97 | 4.1 | 15.5 | 26.8 | 39.2 | 10.3 | 1 | 3.1 | 100 | 27.48 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 596 | 1.5 | 4 | 9.7 | 24 | 24.3 | 36.1 | 0.3 | 100 | 43.52 |
| | EUROPE | 584 | 4.1 | 13.7 | 26 | 30 | 16.6 | 7.2 | 2.4 | 100 | 30.47 |

*Q2.1: What was the percentage of material cost in the total cost of your company in 2010 ?*

## *[Table 2-1-A] Increasing factor of material cost*

| | Number of cases | Rapid increase in material price, notwithstanding various efforts (%) | Increase in material cost due to new business or business conversion (%) | No Increase (%) | Increase in material price without any efforts (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|
| Total | 881 | 66.1 | 14.6 | 9.8 | 9.3 | 0.2 | 100 |
| ***By country*** | | | | | | | |
| KR | 87 | 75.9 | 2.3 | 19.5 | 1.1 | 1.1 | 100 |
| CN | 63 | 77.8 | 7.9 | 9.5 | 4.8 | 0 | 100 |
| JP | 58 | 62.1 | 17.2 | 19 | 0 | 1.7 | 100 |
| IN | 84 | 76.2 | 10.7 | 4.8 | 8.3 | 0 | 100 |
| ID | 82 | 69.5 | 9.8 | 20.7 | 0 | 0 | 100 |
| VN | 98 | 85.7 | 12.2 | 2 | 0 | 0 | 100 |
| DE | 44 | 61.4 | 18.2 | 0 | 20.5 | 0 | 100 |
| FR | 69 | 59.4 | 14.5 | 0 | 26.1 | 0 | 100 |
| UK | 67 | 46.3 | 17.9 | 29.9 | 6 | 0 | 100 |
| IT | 67 | 58.2 | 19.4 | 13.4 | 9 | 0 | 100 |
| AT | 80 | 48.8 | 20 | 0 | 31.3 | 0 | 100 |
| DK | 82 | 59.8 | 29.3 | 0 | 11 | 0 | 100 |
| ***By region*** | | | | | | | |
| ASIA | 472 | 75.4 | 9.7 | 12.1 | 2.3 | 0.4 | 100 |
| EUROPE | 409 | 55.3 | 20.3 | 7.1 | 17.4 | 0 | 100 |

*Q2-1: If the percentage of material cost of your company increased, what is the cause for the increase ?*

## *[Table 2-1-B] Decreasing factor of material cost*

| | | Number of cases | Increased material efficiency through improvement of existing process & production methods (%) | Increased material efficiency through introduction of new process & production methods (%) | Decrease in material use due to business conversion (%) | Costs did not decrease (%) | Reduced cost due to decrease in material price (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|
| Total | | 236 | 38.6 | 29.2 | 22 | 5.5 | 3.4 | 1.3 | 100 |
| ***By country*** | | | | | | | | | |
| | KR | 7 | 28.6 | 14.3 | 42.9 | 14.3 | 0 | 0 | 100 |
| | CN | 33 | 48.5 | 24.2 | 21.2 | 3 | 0 | 3 | 100 |
| | JP | 40 | 42.5 | 42.5 | 0 | 5 | 10 | 0 | 100 |
| | IN | 17 | 35.3 | 35.3 | 23.5 | 5.9 | 0 | 0 | 100 |
| | ID | 17 | 17.6 | 41.2 | 11.8 | 29.4 | 0 | 0 | 100 |
| | VN | 1 | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| | DE | 50 | 44 | 18 | 38 | 0 | 0 | 0 | 100 |
| | FR | 18 | 44.4 | 0 | 55.6 | 0 | 0 | 0 | 100 |
| | UK | 15 | 20 | 40 | 0 | 20 | 13.3 | 6.7 | 100 |
| | IT | 17 | 58.8 | 0 | 41.2 | 0 | 0 | 0 | 100 |
| | AT | 11 | 18.2 | 63.6 | 0 | 0 | 9.1 | 9.1 | 100 |
| | DK | 10 | 20 | 80 | 0 | 0 | 0 | 0 | 100 |
| ***By region*** | | | | | | | | | |
| | ASIA | 115 | 38.3 | 33.9 | 13.9 | 8.7 | 4.3 | 0.9 | 100 |
| | EUROPE | 121 | 38.8 | 24.8 | 29.8 | 2.5 | 2.5 | 1.7 | 100 |

*Q2-1: If the percentage of material cost of your company decreased, what is the cause for the decrease ?*

### *[Table 2-2-1] Activity for reducing material/energy cost - Promotion of new business model or business conversion*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 43.1 | 56.6 | 0.3 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 19 | 81 | 0 | 100 |
| | CN | 96 | 36.5 | 59.4 | 4.2 | 100 |
| | JP | 99 | 15.2 | 84.8 | 0 | 100 |
| | IN | 101 | 39.6 | 60.4 | 0 | 100 |
| | ID | 100 | 30 | 70 | 0 | 100 |
| | VN | 100 | 37 | 63 | 0 | 100 |
| | DE | 100 | 51 | 49 | 0 | 100 |
| | FR | 100 | 50 | 50 | 0 | 100 |
| | UK | 96 | 64.6 | 35.4 | 0 | 100 |
| | IT | 93 | 46.2 | 53.8 | 0 | 100 |
| | AT | 98 | 57.1 | 42.9 | 0 | 100 |
| | DK | 97 | 72.2 | 27.8 | 0 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 29.5 | 69.8 | 0.7 | 100 |
| | EUROPE | 584 | 56.8 | 43.2 | 0 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

### *[Table 2-2-2] Activity for reducing material/energy cost - Improvement of supply chain (change subcontractor or vendor, etc.)*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 66.6 | 33.3 | 0.1 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 40 | 60 | 0 | 100 |
| | CN | 96 | 45.8 | 53.1 | 1 | 100 |
| | JP | 99 | 75.8 | 24.2 | 0 | 100 |
| | IN | 101 | 83.2 | 16.8 | 0 | 100 |
| | ID | 100 | 41 | 59 | 0 | 100 |
| | VN | 100 | 40 | 60 | 0 | 100 |
| | DE | 100 | 85 | 15 | 0 | 100 |
| | FR | 100 | 70 | 30 | 0 | 100 |
| | UK | 96 | 60.4 | 39.6 | 0 | 100 |
| | IT | 93 | 87.1 | 12.9 | 0 | 100 |
| | AT | 98 | 89.8 | 10.2 | 0 | 100 |
| | DK | 97 | 82.5 | 17.5 | 0 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 54.4 | 45.5 | 0.2 | 100 |
| | EUROPE | 584 | 79.1 | 20.9 | 0 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

***[Table 2-2-3] Activity for reducing material/energy cost - Replacing one raw material or energy source for a cheaper one***

| | | Number of cases | Yes (%) | No (%) | Total (%) |
|---|---|---|---|---|---|
| Total | | 1180 | 59.9 | 40.1 | 100 |
| ***By country*** | | | | | |
| | KR | 100 | 44 | 56 | 100 |
| | CN | 96 | 64.6 | 35.4 | 100 |
| | JP | 99 | 64.6 | 35.4 | 100 |
| | IN | 101 | 51.5 | 48.5 | 100 |
| | ID | 100 | 55 | 45 | 100 |
| | VN | 100 | 37 | 63 | 100 |
| | DE | 100 | 78 | 22 | 100 |
| | FR | 100 | 60 | 40 | 100 |
| | UK | 96 | 60.4 | 39.6 | 100 |
| | IT | 93 | 53.8 | 46.2 | 100 |
| | AT | 98 | 68.4 | 31.6 | 100 |
| | DK | 97 | 82.5 | 17.5 | 100 |
| ***By region*** | | | | | |
| | ASIA | 596 | 52.7 | 47.3 | 100 |
| | EUROPE | 584 | 67.3 | 32.7 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

## *[Table 2-2-4] Activity for reducing material/energy cost - Introduction or development of more efficient technology*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | *1180* | *62.8* | *37* | *0.2* | 100 |
| ***By country*** | | | | | | |
| | KR | *100* | *46* | *54* | *0* | 100 |
| | CN | *96* | *65.6* | *32.3* | *2.1* | 100 |
| | JP | *99* | *63.6* | *36.4* | *0* | 100 |
| | IN | *101* | *46.5* | *53.5* | *0* | 100 |
| | ID | *100* | *36* | *64* | *0* | 100 |
| | VN | *100* | *32* | *68* | *0* | 100 |
| | DE | *100* | *78* | *22* | *0* | 100 |
| | FR | *100* | *84* | *16* | *0* | 100 |
| | UK | *96* | *83.3* | *16.7* | *0* | 100 |
| | IT | *93* | *61.3* | *38.7* | *0* | 100 |
| | AT | *98* | *76.5* | *23.5* | *0* | 100 |
| | DK | *97* | *82.5* | *17.5* | *0* | 100 |
| ***By region*** | | | | | | |
| | ASIA | *596* | *48.2* | *51.5* | *0.3* | 100 |
| | EUROPE | *584* | *77.7* | *22.3* | *0* | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

## *[Table 2-2-5] Activity for reducing material/energy cost - Outsourcing production activities*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 46.5 | 53.2 | 0.3 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 39 | 61 | 0 | 100 |
| | CN | 96 | 58.3 | 38.5 | 3.1 | 100 |
| | JP | 99 | 54.5 | 45.5 | 0 | 100 |
| | IN | 101 | 50.5 | 49.5 | 0 | 100 |
| | ID | 100 | 53 | 47 | 0 | 100 |
| | VN | 100 | 37 | 63 | 0 | 100 |
| | DE | 100 | 40 | 60 | 0 | 100 |
| | FR | 100 | 40 | 60 | 0 | 100 |
| | UK | 96 | 20.8 | 79.2 | 0 | 100 |
| | IT | 93 | 63.4 | 36.6 | 0 | 100 |
| | AT | 98 | 48 | 52 | 0 | 100 |
| | DK | 97 | 54.6 | 45.4 | 0 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 48.7 | 50.8 | 0.5 | 100 |
| | EUROPE | 584 | 44.3 | 55.7 | 0 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

## *[Table 2-2-6] Activity for reducing material/energy cost - Recycling raw material*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 58.6 | 41.2 | 0.2 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 41 | 59 | 0 | 100 |
| | CN | 96 | 52.1 | 45.8 | 2.1 | 100 |
| | JP | 99 | 69.7 | 30.3 | 0 | 100 |
| | IN | 101 | 45.5 | 54.5 | 0 | 100 |
| | ID | 100 | 57 | 43 | 0 | 100 |
| | VN | 100 | 35 | 65 | 0 | 100 |
| | DE | 100 | 71 | 29 | 0 | 100 |
| | FR | 100 | 80 | 20 | 0 | 100 |
| | UK | 96 | 54.2 | 45.8 | 0 | 100 |
| | IT | 93 | 61.3 | 38.7 | 0 | 100 |
| | AT | 98 | 68.4 | 31.6 | 0 | 100 |
| | DK | 97 | 69.1 | 30.9 | 0 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 50 | 49.7 | 0.3 | 100 |
| | EUROPE | 584 | 67.5 | 32.5 | 0 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

## *[Table 2-2-7] Activity for reducing material/energy cost - Introduction of more efficient equipment/apparatus/power-saving lighting*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 64.5 | 35.3 | 0.3 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 70 | 30 | 0 | 100 |
| | CN | 96 | 70.8 | 26 | 3.1 | 100 |
| | JP | 99 | 59.6 | 40.4 | 0 | 100 |
| | IN | 101 | 63.4 | 36.6 | 0 | 100 |
| | ID | 100 | 77 | 23 | 0 | 100 |
| | VN | 100 | 49 | 51 | 0 | 100 |
| | DE | 100 | 70 | 30 | 0 | 100 |
| | FR | 100 | 72 | 28 | 0 | 100 |
| | UK | 96 | 37.5 | 62.5 | 0 | 100 |
| | IT | 93 | 80.6 | 19.4 | 0 | 100 |
| | AT | 98 | 59.2 | 40.8 | 0 | 100 |
| | DK | 97 | 64.9 | 35.1 | 0 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 64.9 | 34.6 | 0.5 | 100 |
| | EUROPE | 584 | 64 | 36 | 0 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

## *[Table 2-2-8] Activity for reducing material/energy cost - Introduction of (building) energy management system (EMS)*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 33.3 | 66.5 | 0.2 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 15 | 85 | 0 | 100 |
| | CN | 96 | 33.3 | 64.6 | 2.1 | 100 |
| | JP | 99 | 41.4 | 58.6 | 0 | 100 |
| | IN | 101 | 17.8 | 82.2 | 0 | 100 |
| | ID | 100 | 24 | 76 | 0 | 100 |
| | VN | 100 | 22 | 78 | 0 | 100 |
| | DE | 100 | 51 | 49 | 0 | 100 |
| | FR | 100 | 46 | 54 | 0 | 100 |
| | UK | 96 | 33.3 | 66.7 | 0 | 100 |
| | IT | 93 | 46.2 | 53.8 | 0 | 100 |
| | AT | 98 | 42.9 | 57.1 | 0 | 100 |
| | DK | 97 | 27.8 | 72.2 | 0 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 25.5 | 74.2 | 0.3 | 100 |
| | EUROPE | 584 | 41.3 | 58.7 | 0 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

## *[Table 2-2-9] Activity for reducing material/energy cost - Improvement of insulation or air-conditioning system*

| | | Number of cases | Yes (%) | No (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 34.7 | 65.1 | 0.3 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 25 | 75 | 0 | 100 |
| | CN | 96 | 38.5 | 58.3 | 3.1 | 100 |
| | JP | 99 | 39.4 | 60.6 | 0 | 100 |
| | IN | 101 | 18.8 | 81.2 | 0 | 100 |
| | ID | 100 | 27 | 73 | 0 | 100 |
| | VN | 100 | 22 | 78 | 0 | 100 |
| | DE | 100 | 39 | 61 | 0 | 100 |
| | FR | 100 | 48 | 52 | 0 | 100 |
| | UK | 96 | 24 | 76 | 0 | 100 |
| | IT | 93 | 53.8 | 46.2 | 0 | 100 |
| | AT | 98 | 36.7 | 63.3 | 0 | 100 |
| | DK | 97 | 45.4 | 54.6 | 0 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 28.4 | 71.1 | 0.5 | 100 |
| | EUROPE | 584 | 41.1 | 58.9 | 0 | 100 |

*Q2-2: Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?*

***[Table 2-3] Percentage of total investment cost was used for reduction of material and energy cost***

| | | Number of cases | 3% below (%) | 3%~5% (%) | 5%~10% (%) | 10%~30% (%) | 30%~ 50% (%) | Above 50% (%) | Not applicable (%) | Not available (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 29.9 | 31.1 | 22.4 | 10.6 | 4.7 | 0.3 | 0.9 | 0.2 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 100 | 40 | 30 | 6 | 9 | 3 | 1 | 11 | 0 | 100 |
| | CN | 96 | 21.9 | 24 | 32.3 | 16.7 | 4.2 | 1 | 0 | 0 | 100 |
| | JP | 99 | 31.3 | 45.5 | 16.2 | 2 | 4 | 1 | 0 | 0 | 100 |
| | IN | 101 | 31.7 | 30.7 | 28.7 | 7.9 | 1 | 0 | 0 | 0 | 100 |
| | ID | 100 | 30 | 35 | 18 | 12 | 5 | 0 | 0 | 0 | 100 |
| | VN | 100 | 15 | 38 | 47 | 0 | 0 | 0 | 0 | 0 | 100 |
| | DE | 100 | 52 | 30 | 9 | 0 | 9 | 0 | 0 | 0 | 100 |
| | FR | 100 | 20 | 31 | 10 | 39 | 0 | 0 | 0 | 0 | 100 |
| | UK | 96 | 18.8 | 22.9 | 43.8 | 10.4 | 4.2 | 0 | 0 | 0 | 100 |
| | IT | 93 | 19.4 | 36.6 | 26.9 | 17.2 | 0 | 0 | 0 | 0 | 100 |
| | AT | 98 | 39.8 | 32.7 | 15.3 | 4.1 | 6.1 | 0 | 0 | 2 | 100 |
| | DK | 97 | 38.1 | 16.5 | 16.5 | 9.3 | 19.6 | 0 | 0 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 596 | 28.4 | 33.9 | 24.7 | 7.9 | 2.9 | 0.5 | 1.8 | 0 | 100 |
| | EUROPE | 584 | 31.5 | 28.3 | 20 | 13.4 | 6.5 | 0 | 0 | 0.3 | 100 |

*Q2-3: What percentage of total investment cost was used for reduction of material cost and energy cost during the past 3 years?*

***[Table 2-4-1] Introduction of Equipment or technology to reduce discharged pollutants***

| | | Number of cases | Introduced before 2005 (%) | Introduced after 2006 (%) | Has not been introduced (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|
| Total | | 1180 | 32.2 | 20.8 | 46.9 | 0.1 | 100 |
| ***By country*** | | | | | | | |
| | KR | 100 | 13 | 13 | 74 | 0 | 100 |
| | CN | 96 | 16.7 | 47.9 | 34.4 | 1 | 100 |
| | JP | 99 | 27.3 | 15.2 | 57.6 | 0 | 100 |
| | IN | 101 | 14.9 | 17.8 | 67.3 | 0 | 100 |
| | ID | 100 | 14 | 17 | 69 | 0 | 100 |
| | VN | 100 | 10 | 11 | 79 | 0 | 100 |
| | DE | 100 | 51 | 10 | 39 | 0 | 100 |
| | FR | 100 | 50 | 10 | 40 | 0 | 100 |
| | UK | 96 | 52.1 | 22.9 | 25 | 0 | 100 |
| | IT | 93 | 63.4 | 17.2 | 19.4 | 0 | 100 |
| | AT | 98 | 40.8 | 14.3 | 44.9 | 0 | 100 |
| | DK | 97 | 36.1 | 54.6 | 9.3 | 0 | 100 |
| ***By region*** | | | | | | | |
| | ASIA | 596 | 15.9 | 20.1 | 63.8 | 0.2 | 100 |
| | EUROPE | 584 | 48.8 | 21.4 | 29.8 | 0 | 100 |

*Q2-4: Has your company introduced the following equipment or technology for improving environment-friendliness of manufacturing or processing in the past?*

***[Table 2-4-2] Introduction of Equipment or technology to improve energy efficiency or recover remaining heat***

| | | Number of cases | Introduced before 2005 (%) | Introduced after 2006 (%) | Has not been introduced (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|
| Total | | 1180 | 25.2 | 29.6 | 45.1 | 0.2 | 100 |
| ***By country*** | | | | | | | |
| | KR | 100 | 5 | 22 | 73 | 0 | 100 |
| | CN | 96 | 16.7 | 40.6 | 40.6 | 2.1 | 100 |
| | JP | 99 | 27.3 | 10.1 | 62.6 | 0 | 100 |
| | IN | 101 | 8.9 | 36.6 | 54.5 | 0 | 100 |
| | ID | 100 | 6 | 25 | 69 | 0 | 100 |
| | VN | 100 | 4 | 13 | 83 | 0 | 100 |
| | DE | 100 | 33 | 28 | 39 | 0 | 100 |
| | FR | 100 | 40 | 30 | 30 | 0 | 100 |
| | UK | 96 | 37.5 | 39.6 | 22.9 | 0 | 100 |
| | IT | 93 | 63.4 | 26.9 | 9.7 | 0 | 100 |
| | AT | 98 | 27.6 | 29.6 | 42.9 | 0 | 100 |
| | DK | 97 | 36.1 | 54.6 | 9.3 | 0 | 100 |
| ***By region*** | | | | | | | |
| | ASIA | 596 | 11.2 | 24.5 | 63.9 | 0.3 | 100 |
| | EUROPE | 584 | 39.4 | 34.8 | 25.9 | 0 | 100 |

*Q2-4: Has your company introduced the following equipment or technology for improving environment-friendliness of manufacturing or processing in the past?*

***[Table 2-4-3] Introduction of Equipment or technology to reduce or recycle of generated waste***

| | | Number of cases | Introduced before 2005 (%) | Introduced after 2006 (%) | Has not been introduced (%) | N/A (%) |
|---|---|---|---|---|---|---|
| Total | | 1180 | 24.5 | 33.1 | 42.5 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 8 | 17 | 75 | 100 |
| | CN | 96 | 10.4 | 58.3 | 31.3 | 100 |
| | JP | 99 | 42.4 | 42.4 | 15.2 | 100 |
| | IN | 101 | 14.9 | 29.7 | 55.4 | 100 |
| | ID | 100 | 12 | 25 | 63 | 100 |
| | VN | 100 | 0 | 6 | 94 | 100 |
| | DE | 100 | 31 | 39 | 30 | 100 |
| | FR | 100 | 40 | 30 | 30 | 100 |
| | UK | 96 | 31.3 | 33.3 | 35.4 | 100 |
| | IT | 93 | 44.1 | 46.2 | 9.7 | 100 |
| | AT | 98 | 26.5 | 43.9 | 29.6 | 100 |
| | DK | 97 | 35.1 | 27.8 | 37.1 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 14.6 | 29.5 | 55.9 | 100 |
| | EUROPE | 584 | 34.6 | 36.6 | 28.8 | 100 |

*Q2-4: Has your company introduced the following equipment or technology for improving environment-friendliness of manufacturing or processing in the past?*

## *[Table 3-1-1] Introduced some type of eco-design*

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | N/A (%) | Total % |
|---|---|---|---|---|---|---|---|
| Total | | 1180 | 48.6 | 31.5 | 19.7 | 0.1 | 100 |
| ***By country*** | | | | | | | |
| | KR | 100 | 14 | 44 | 42 | 0 | 100 |
| | CN | 96 | 30.2 | 19.8 | 50 | 0 | 100 |
| | JP | 99 | 54.5 | 41.4 | 3 | 1 | 100 |
| | IN | 101 | 29.7 | 38.6 | 31.7 | 0 | 100 |
| | ID | 100 | 22 | 45 | 33 | 0 | 100 |
| | VN | 100 | 1 | 48 | 51 | 0 | 100 |
| | DE | 100 | 91 | 9 | 0 | 0 | 100 |
| | FR | 100 | 62 | 38 | 0 | 0 | 100 |
| | UK | 96 | 60.4 | 35.4 | 4.2 | 0 | 100 |
| | IT | 93 | 65.6 | 34.4 | 0 | 0 | 100 |
| | AT | 98 | 83.7 | 14.3 | 2 | 0 | 100 |
| | DK | 97 | 72.2 | 9.3 | 18.6 | 0 | 100 |
| ***By region*** | | | | | | | |
| | ASIA | 596 | 25.2 | 39.6 | 35.1 | 0.2 | 100 |
| | EUROPE | 584 | 72.6 | 23.3 | 4.1 | 0 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

***[Table 3-1-2] Minimized or reduced the amount of product packaging***

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | Total % |
|---|---|---|---|---|---|---|
| Total | | 1180 | 48.1 | 29.7 | 22.2 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 24 | 37 | 39 | 100 |
| | CN | 96 | 32.3 | 31.3 | 36.5 | 100 |
| | JP | 99 | 62.6 | 30.3 | 7.1 | 100 |
| | IN | 101 | 24.8 | 41.6 | 33.7 | 100 |
| | ID | 100 | 24 | 40 | 36 | 100 |
| | VN | 100 | 12 | 39 | 49 | 100 |
| | DE | 100 | 80 | 9 | 11 | 100 |
| | FR | 100 | 68 | 32 | 0 | 100 |
| | UK | 96 | 49 | 36.5 | 14.6 | 100 |
| | IT | 93 | 61.3 | 29 | 9.7 | 100 |
| | AT | 98 | 77.6 | 12.2 | 10.2 | 100 |
| | DK | 97 | 62.9 | 18.6 | 18.6 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 29.9 | 36.6 | 33.6 | 100 |
| | EUROPE | 584 | 66.6 | 22.8 | 10.6 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

## *[Table 3-1-3] Reduced pollutant emissions or energy use in transit*

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | Total % |
|---|---|---|---|---|---|---|
| Total | | 1180 | 40.8 | 39.9 | 19.2 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 11 | 46 | 43 | 100 |
| | CN | 96 | 39.6 | 21.9 | 38.5 | 100 |
| | JP | 99 | 47.5 | 49.5 | 3 | 100 |
| | IN | 101 | 28.7 | 36.6 | 34.7 | 100 |
| | ID | 100 | 33 | 34 | 33 | 100 |
| | VN | 100 | 8 | 44 | 48 | 100 |
| | DE | 100 | 48 | 52 | 0 | 100 |
| | FR | 100 | 67 | 33 | 0 | 100 |
| | UK | 96 | 49 | 40.6 | 10.4 | 100 |
| | IT | 93 | 61.3 | 29 | 9.7 | 100 |
| | AT | 98 | 55.1 | 44.9 | 0 | 100 |
| | DK | 97 | 44.3 | 46.4 | 9.3 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 27.9 | 38.8 | 33.4 | 100 |
| | EUROPE | 584 | 54.1 | 41.1 | 4.8 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

***[Table 3-1-4] Applied a new technology to extend product life cycle***

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | Total % |
|---|---|---|---|---|---|---|
| Total | | 1180 | 37.7 | 37.2 | 25.1 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 16 | 42 | 42 | 100 |
| | CN | 96 | 28.1 | 20.8 | 51 | 100 |
| | JP | 99 | 34.3 | 45.5 | 20.2 | 100 |
| | IN | 101 | 26.7 | 31.7 | 41.6 | 100 |
| | ID | 100 | 18 | 34 | 48 | 100 |
| | VN | 100 | 2 | 52 | 46 | 100 |
| | DE | 100 | 63 | 27 | 10 | 100 |
| | FR | 100 | 68 | 32 | 0 | 100 |
| | UK | 96 | 31.3 | 55.2 | 13.5 | 100 |
| | IT | 93 | 71 | 29 | 0 | 100 |
| | AT | 98 | 61.2 | 30.6 | 8.2 | 100 |
| | DK | 97 | 35.1 | 46.4 | 18.6 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 20.8 | 37.8 | 41.4 | 100 |
| | EUROPE | 584 | 55 | 36.6 | 8.4 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

***[Table 3-1-5] Applied a new technology to save energy or reduce emission in use***

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | Total % |
|---|---|---|---|---|---|---|
| Total | | 1180 | 46.8 | 27.6 | 25.6 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 22 | 34 | 44 | 100 |
| | CN | 96 | 19.8 | 19.8 | 60.4 | 100 |
| | JP | 99 | 46.5 | 46.5 | 7.1 | 100 |
| | IN | 101 | 16.8 | 22.8 | 60.4 | 100 |
| | ID | 100 | 23 | 33 | 44 | 100 |
| | VN | 100 | 21 | 31 | 48 | 100 |
| | DE | 100 | 73 | 17 | 10 | 100 |
| | FR | 100 | 74 | 26 | 0 | 100 |
| | UK | 96 | 41.7 | 52.1 | 6.3 | 100 |
| | IT | 93 | 78.5 | 21.5 | 0 | 100 |
| | AT | 98 | 75.5 | 18.4 | 6.1 | 100 |
| | DK | 97 | 72.2 | 9.3 | 18.6 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 24.8 | 31.2 | 44 | 100 |
| | EUROPE | 584 | 69.2 | 24 | 6.8 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

## *[Table 3-1-6] Used available recycling techniques*

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | Total % |
|---|---|---|---|---|---|---|
| Total | | 1180 | 41 | 32.3 | 26.7 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 20 | 35 | 45 | 100 |
| | CN | 96 | 22.9 | 36.5 | 40.6 | 100 |
| | JP | 99 | 57.6 | 37.4 | 5.1 | 100 |
| | IN | 101 | 26.7 | 26.7 | 46.5 | 100 |
| | ID | 100 | 20 | 39 | 41 | 100 |
| | VN | 100 | 6 | 28 | 66 | 100 |
| | DE | 100 | 60 | 30 | 10 | 100 |
| | FR | 100 | 64 | 36 | 0 | 100 |
| | UK | 96 | 51 | 32.3 | 16.7 | 100 |
| | IT | 93 | 61.3 | 29 | 9.7 | 100 |
| | AT | 98 | 51 | 38.8 | 10.2 | 100 |
| | DK | 97 | 53.6 | 18.6 | 27.8 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 25.5 | 33.7 | 40.8 | 100 |
| | EUROPE | 584 | 56.8 | 30.8 | 12.3 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

## *[Table 3-1-7] Introduced product servicising*

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | Total % |
|---|---|---|---|---|---|---|
| Total | | 1180 | 20.2 | 57.7 | 22.1 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 14 | 41 | 45 | 100 |
| | CN | 96 | 14.6 | 58.3 | 27.1 | 100 |
| | JP | 99 | 10.1 | 79.8 | 10.1 | 100 |
| | IN | 101 | 14.9 | 64.4 | 20.8 | 100 |
| | ID | 100 | 17 | 63 | 20 | 100 |
| | VN | 100 | 39 | 23 | 38 | 100 |
| | DE | 100 | 28 | 53 | 19 | 100 |
| | FR | 100 | 15 | 76 | 9 | 100 |
| | UK | 96 | 22.9 | 56.3 | 20.8 | 100 |
| | IT | 93 | 24.7 | 71 | 4.3 | 100 |
| | AT | 98 | 19.4 | 58.2 | 22.4 | 100 |
| | DK | 97 | 22.7 | 49.5 | 27.8 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 18.3 | 54.9 | 26.8 | 100 |
| | EUROPE | 584 | 22.1 | 60.6 | 17.3 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

## *[Table 3-1-8] Provided certification of eco-friendly products*

| | | Number of cases | Taken (%) | Not Taken and No Plans (%) | Not Taken with Plans to apply within the next 2 years (%) | Total % |
|---|---|---|---|---|---|---|
| Total | | 1180 | 48.9 | 30.8 | 20.3 | 100 |
| ***By country*** | | | | | | |
| | KR | 100 | 30 | 39 | 31 | 100 |
| | CN | 96 | 37.5 | 32.3 | 30.2 | 100 |
| | JP | 99 | 45.5 | 41.4 | 13.1 | 100 |
| | IN | 101 | 31.7 | 32.7 | 35.6 | 100 |
| | ID | 100 | 31 | 41 | 28 | 100 |
| | VN | 100 | 17 | 9 | 74 | 100 |
| | DE | 100 | 71 | 19 | 10 | 100 |
| | FR | 100 | 63 | 37 | 0 | 100 |
| | UK | 96 | 66.7 | 31.3 | 2.1 | 100 |
| | IT | 93 | 69.9 | 30.1 | 0 | 100 |
| | AT | 98 | 63.3 | 28.6 | 8.2 | 100 |
| | DK | 97 | 62.9 | 27.8 | 9.3 | 100 |
| ***By region*** | | | | | | |
| | ASIA | 596 | 32 | 32.6 | 35.4 | 100 |
| | EUROPE | 584 | 66.1 | 28.9 | 5 | 100 |

*Q3-1: Has your company taken eco-innovation actions for products and/or services since 2007?*

### *[Table 4-1] Eco-innovation Team Building – Organization and Personnel for Eco-innovation*

| | | Number of cases | Operation of specialized department (%) | No specialized department, but manager for carrying out relevant duties is designated (%) | No specialized department, but person carrying out other duties is also in charge of relevant duties (%) | No specialized department or manager (%) | Total (%) |
|---|---|---|---|---|---|---|---|
| Total | | 1180 | 22.5 | 26 | 26 | 25.4 | 100 |
| ***By country*** | | | | | | | |
| | KR | 100 | 2 | 18 | 27 | 53 | 100 |
| | CN | 96 | 10.4 | 25 | 37.5 | 27.1 | 100 |
| | JP | 99 | 12.1 | 25.3 | 34.3 | 28.3 | 100 |
| | IN | 101 | 6.9 | 15.8 | 45.5 | 31.7 | 100 |
| | ID | 100 | 10 | 21 | 35 | 34 | 100 |
| | VN | 100 | 0 | 25 | 45 | 30 | 100 |
| | DE | 100 | 44 | 38 | 18 | 0 | 100 |
| | FR | 100 | 30 | 30 | 10 | 30 | 100 |
| | UK | 96 | 39.6 | 35.4 | 14.6 | 10.4 | 100 |
| | IT | 93 | 55.9 | 15.1 | 0 | 29 | 100 |
| | AT | 98 | 35.7 | 35.7 | 24.5 | 4.1 | 100 |
| | DK | 97 | 26.8 | 27.8 | 18.6 | 26.8 | 100 |
| ***By region*** | | | | | | | |
| | ASIA | 596 | 6.9 | 21.6 | 37.4 | 34.1 | 100 |
| | EUROPE | 584 | 38.5 | 30.5 | 14.4 | 16.6 | 100 |

*Q4-1: Does your company have a specialized organization or manager for duties related to green management or eco-innovation?*

## *[Table 4-2-1] Eco-friendly enterprise certification (ISO 14001, etc.)*

| | | Number of cases | Yes (%) | No (%) | Total (%) |
|---|---|---|---|---|---|
| Total | | 1180 | 47.1 | 52.9 | 100 |
| ***By country*** | | | | | |
| | KR | 100 | 49 | 51 | 100 |
| | CN | 96 | 39.6 | 60.4 | 100 |
| | JP | 99 | 45.5 | 54.5 | 100 |
| | IN | 101 | 20.8 | 79.2 | 100 |
| | ID | 100 | 22 | 78 | 100 |
| | VN | 100 | 34 | 66 | 100 |
| | DE | 100 | 61 | 39 | 100 |
| | FR | 100 | 55 | 45 | 100 |
| | UK | 96 | 63.5 | 36.5 | 100 |
| | IT | 93 | 59.1 | 40.9 | 100 |
| | AT | 98 | 54.1 | 45.9 | 100 |
| | DK | 97 | 63.9 | 36.1 | 100 |
| ***By region*** | | | | | |
| | ASIA | 596 | 35.1 | 64.9 | 100 |
| | EUROPE | 584 | 59.4 | 40.6 | 100 |

*Q4-2: Does your company have experience with the following items ?*

***[Table 4-2-2] Management strategy which include eco-innovation***

| | | Number of cases | Yes (%) | No (%) | Total (%) |
|---|---|---|---|---|---|
| Total | | 1180 | 35.2 | 64.8 | 100 |
| ***By country*** | | | | | |
| | KR | 100 | 29 | 71 | 100 |
| | CN | 96 | 24 | 76 | 100 |
| | JP | 99 | 35.4 | 64.6 | 100 |
| | IN | 101 | 26.7 | 73.3 | 100 |
| | ID | 100 | 29 | 71 | 100 |
| | VN | 100 | 27 | 73 | 100 |
| | DE | 100 | 48 | 52 | 100 |
| | FR | 100 | 44 | 56 | 100 |
| | UK | 96 | 40.6 | 59.4 | 100 |
| | IT | 93 | 47.3 | 52.7 | 100 |
| | AT | 98 | 39.8 | 60.2 | 100 |
| | DK | 97 | 32 | 68 | 100 |
| ***By region*** | | | | | |
| | ASIA | 596 | 28.5 | 71.5 | 100 |
| | EUROPE | 584 | 42 | 58 | 100 |

*Q4-2: Does your company have experience with the following items ?*

### *[Table 4-2-3] Publication of Environment Report or Sustainability Report*

| | | Number of cases | Yes (%) | No (%) | Total (%) |
|---|---|---|---|---|---|
| Total | | 1180 | 37.3 | 62.7 | 100 |
| ***By country*** | | | | | |
| | KR | 100 | 7 | 93 | 100 |
| | CN | 96 | 12.5 | 87.5 | 100 |
| | JP | 99 | 28.3 | 71.7 | 100 |
| | IN | 101 | 18.8 | 81.2 | 100 |
| | ID | 100 | 13 | 87 | 100 |
| | VN | 100 | 5 | 95 | 100 |
| | DE | 100 | 72 | 28 | 100 |
| | FR | 100 | 43 | 57 | 100 |
| | UK | 96 | 58.3 | 41.7 | 100 |
| | IT | 93 | 61.3 | 38.7 | 100 |
| | AT | 98 | 69.4 | 30.6 | 100 |
| | DK | 97 | 61.9 | 38.1 | 100 |
| ***By region*** | | | | | |
| | ASIA | 596 | 14.1 | 85.9 | 100 |
| | EUROPE | 584 | 61 | 39 | 100 |

*Q4-2: Does your company have experience with the following items ?*

### *[Table 4-2-4] Supporting eco-innovation for subcontractors or vendors*

| | | Number of cases | Yes (%) | No (%) | Total (%) |
|---|---|---|---|---|---|
| Total | | 1180 | 22.3 | 77.7 | 100 |
| ***By country*** | | | | | |
| | KR | 100 | 7 | 93 | 100 |
| | CN | 96 | 17.7 | 82.3 | 100 |
| | JP | 99 | 31.3 | 68.7 | 100 |
| | IN | 101 | 11.9 | 88.1 | 100 |
| | ID | 100 | 11 | 89 | 100 |
| | VN | 100 | 8 | 92 | 100 |
| | DE | 100 | 29 | 71 | 100 |
| | FR | 100 | 27 | 73 | 100 |
| | UK | 96 | 32.3 | 67.7 | 100 |
| | IT | 93 | 29 | 71 | 100 |
| | AT | 98 | 29.6 | 70.4 | 100 |
| | DK | 97 | 35.1 | 64.9 | 100 |
| ***By region*** | | | | | |
| | ASIA | 596 | 14.4 | 85.6 | 100 |
| | EUROPE | 584 | 30.3 | 69.7 | 100 |

*Q4-2: Does your company have experience with the following items ?*

## *[Table 4-2-5] Demand or support for eco-innovation by clients or customers*

| | | Number of cases | Yes (%) | No (%) | Total (%) |
|---|---|---|---|---|---|
| Total | | 1180 | 33.4 | 66.6 | 100 |
| ***By country*** | | | | | |
| | KR | 100 | 20 | 80 | 100 |
| | CN | 96 | 46.9 | 53.1 | 100 |
| | JP | 99 | 33.3 | 66.7 | 100 |
| | IN | 101 | 21.8 | 78.2 | 100 |
| | ID | 100 | 19 | 81 | 100 |
| | VN | 100 | 13 | 87 | 100 |
| | DE | 100 | 39 | 61 | 100 |
| | FR | 100 | 35 | 65 | 100 |
| | UK | 96 | 43.8 | 56.3 | 100 |
| | IT | 93 | 39.8 | 60.2 | 100 |
| | AT | 98 | 43.9 | 56.1 | 100 |
| | DK | 97 | 47.4 | 52.6 | 100 |
| ***By region*** | | | | | |
| | ASIA | 596 | 25.5 | 74.5 | 100 |
| | EUROPE | 584 | 41.4 | 58.6 | 100 |

*Q4-2: Does your company have experience with the following items ?*

## *[Table 5-1] Checking information on eco-innovation regulations*

| | | Number of cases | Receiving free information through newsletters of association or related institutions (%) | Notice related news by chance or from acquaintances in same industry (%) | Finding related information on the internet (%) | Purchasing information through consulting or related institution (%) | Not receiving any information about regulation (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 32.4 | 20.9 | 19.7 | 18.2 | 8.8 | 100 |
| ***By country*** | | | | | | | | |
| | KR | 100 | 17 | 15 | 22 | 2 | 44 | 100 |
| | CN | 96 | 26 | 28.1 | 33.3 | 8.3 | 4.2 | 100 |
| | JP | 99 | 35.4 | 41.4 | 8.1 | 5.1 | 10.1 | 100 |
| | IN | 101 | 31.7 | 0 | 33.7 | 16.8 | 17.8 | 100 |
| | ID | 100 | 35 | 30 | 30 | 5 | 0 | 100 |
| | VN | 100 | 15 | 63 | 22 | 0 | 0 | 100 |
| | DE | 100 | 53 | 11 | 10 | 26 | 0 | 100 |
| | FR | 100 | 19 | 10 | 29 | 42 | 0 | 100 |
| | UK | 96 | 27.1 | 12.5 | 12.5 | 41.7 | 6.3 | 100 |
| | IT | 93 | 19.4 | 29 | 7.5 | 24.7 | 19.4 | 100 |
| | AT | 98 | 39.8 | 11.2 | 16.3 | 28.6 | 4.1 | 100 |
| | DK | 97 | 70.1 | 0 | 10.3 | 19.6 | 0 | 100 |
| ***By region*** | | | | | | | | |
| | ASIA | 596 | 26.7 | 29.5 | 24.8 | 6.2 | 12.8 | 100 |
| | EUROPE | 584 | 38.2 | 12.2 | 14.4 | 30.5 | 4.8 | 100 |

*Q5-1: How does your company check information on eco-innovation regulation ?*

***[Table 5-2] Difficulty of collecting information on regulations related with eco-innovation***

| | | Number of cases | Collection information from various source (%) | Difficulty to find needed information (%) | Lack of capacity to interpret information (%) | Credibility of information (%) | Burdensome cost for needed information (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 37.9 | 22.9 | 16.9 | 15.3 | 7 | 100 |
| ***By country*** | | | | | | | | |
| | KR | 100 | 11 | 48 | 2 | 33 | 6 | 100 |
| | CN | 96 | 20.8 | 20.8 | 25 | 12.5 | 20.8 | 100 |
| | JP | 99 | 16.2 | 30.3 | 26.3 | 10.1 | 17.2 | 100 |
| | IN | 101 | 6.9 | 57.4 | 15.8 | 19.8 | 0 | 100 |
| | ID | 100 | 25 | 18 | 25 | 27 | 5 | 100 |
| | VN | 100 | 3 | 24 | 25 | 48 | 0 | 100 |
| | DE | 100 | 72 | 15 | 13 | 0 | 0 | 100 |
| | FR | 100 | 80 | 10 | 10 | 0 | 0 | 100 |
| | UK | 96 | 47.9 | 16.7 | 2.1 | 0 | 33.3 | 100 |
| | IT | 93 | 58.1 | 7.5 | 11.8 | 19.4 | 3.2 | 100 |
| | AT | 98 | 69.4 | 16.3 | 14.3 | 0 | 0 | 100 |
| | DK | 97 | 46.4 | 8.2 | 32 | 13.4 | 0 | 100 |
| ***By region*** | | | | | | | | |
| | ASIA | 596 | 13.8 | 33.2 | 19.8 | 25.2 | 8.1 | 100 |
| | EUROPE | 584 | 62.5 | 12.3 | 13.9 | 5.3 | 6 | 100 |

*Q5-2: What is the greatest difficulty in the process of collecting information on related regulation and policy for eco-innovation?*

***[Table 5-3-1] Level of Policy Needs - Support for Green Technology R&D***

| | | Number of cases | ① Very high 5 points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 17.1 | 35 | 52.1 | 28.4 | 12.3 | 7.1 | 19.4 | 0.1 | 100 | 3.43 | 60.69 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 14 | 42 | 56 | 31 | 8 | 4 | 12 | 1 | 100 | 3.55 | 63.64 |
| | CN | 96 | 16.7 | 33.3 | 50 | 35.4 | 12.5 | 2.1 | 14.6 | 0 | 100 | 3.5 | 62.5 |
| | JP | 99 | 19.2 | 43.4 | 62.6 | 23.2 | 13.1 | 1 | 14.1 | 0 | 100 | 3.67 | 66.67 |
| | IN | 101 | 18.8 | 31.7 | 50.5 | 25.7 | 14.9 | 8.9 | 23.8 | 0 | 100 | 3.37 | 59.16 |
| | ID | 100 | 18 | 38 | 56 | 31 | 6 | 7 | 13 | 0 | 100 | 3.54 | 63.5 |
| | VN | 100 | 14 | 35 | 49 | 27 | 16 | 8 | 24 | 0 | 100 | 3.31 | 57.75 |
| | DE | 100 | 12 | 24 | 36 | 39 | 16 | 9 | 25 | 0 | 100 | 3.14 | 53.5 |
| | FR | 100 | 16 | 20 | 36 | 30 | 20 | 14 | 34 | 0 | 100 | 3.04 | 51 |
| | UK | 96 | 14.6 | 29.2 | 43.8 | 27.1 | 14.6 | 14.6 | 29.2 | 0 | 100 | 3.15 | 53.65 |
| | IT | 93 | 17.2 | 24.7 | 41.9 | 36.6 | 12.9 | 8.6 | 21.5 | 0 | 100 | 3.29 | 57.26 |
| | AT | 98 | 10.2 | 33.7 | 43.9 | 34.7 | 13.3 | 8.2 | 21.4 | 0 | 100 | 3.24 | 56.12 |
| | DK | 97 | 35.1 | 64.9 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 4.35 | 83.76 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 16.8 | 37.2 | 54 | 28.9 | 11.7 | 5.2 | 16.9 | 0.2 | 100 | 3.49 | 62.18 |
| | EUROPE | 584 | 17.5 | 32.7 | 50.2 | 27.9 | 12.8 | 9.1 | 21.9 | 0 | 100 | 3.37 | 59.16 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-2] Level of Policy Needs - Subsidies and Fiscal Incentive in Facilities and Equipment*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Avg. (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 14.8 | 27 | 41.9 | 33.6 | 14.7 | 9.7 | 24.4 | 0.1 | 100 | 3.23 | 55.64 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 25 | 46 | 71 | 21 | 4 | 3 | 7 | 1 | 100 | 3.87 | 71.72 |
| | CN | 96 | 11.5 | 34.4 | 45.8 | 35.4 | 18.8 | 0 | 18.8 | 0 | 100 | 3.39 | 59.64 |
| | JP | 99 | 24.2 | 29.3 | 53.5 | 35.4 | 8.1 | 3 | 11.1 | 0 | 100 | 3.64 | 65.91 |
| | IN | 101 | 12.9 | 33.7 | 46.5 | 28.7 | 17.8 | 6.9 | 24.8 | 0 | 100 | 3.28 | 56.93 |
| | ID | 100 | 28 | 31 | 59 | 22 | 11 | 8 | 19 | 0 | 100 | 3.6 | 65 |
| | VN | 100 | 22 | 34 | 56 | 28 | 9 | 7 | 16 | 0 | 100 | 3.55 | 63.75 |
| | DE | 100 | 9 | 17 | 26 | 40 | 15 | 19 | 34 | 0 | 100 | 2.82 | 45.5 |
| | FR | 100 | 10 | 24 | 34 | 47 | 0 | 19 | 19 | 0 | 100 | 3.06 | 51.5 |
| | UK | 96 | 12.5 | 16.7 | 29.2 | 42.7 | 20.8 | 7.3 | 28.1 | 0 | 100 | 3.06 | 51.56 |
| | IT | 93 | 11.8 | 17.2 | 29 | 28 | 33.3 | 9.7 | 43 | 0 | 100 | 2.88 | 47.04 |
| | AT | 98 | 2 | 20.4 | 22.4 | 39.8 | 21.4 | 16.3 | 37.8 | 0 | 100 | 2.7 | 42.6 |
| | DK | 97 | 8.2 | 19.6 | 27.8 | 36.1 | 18.6 | 17.5 | 36.1 | 0 | 100 | 2.82 | 45.62 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 20.6 | 34.7 | 55.4 | 28.4 | 11.4 | 4.7 | 16.1 | 0.2 | 100 | 3.55 | 63.82 |
| | EUROPE | 584 | 8.9 | 19.2 | 28.1 | 39 | 18 | 14.9 | 32.9 | 0 | 100 | 2.89 | 47.3 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-3] Level of Policy Needs - Support for Clean Production Process*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 11 | 22.2 | 33.2 | 39.6 | 18.9 | 8.1 | 27 | 0.1 | 0.1 | 100 | 3.09 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 8 | 46 | 54 | 35 | 5 | 5 | 10 | 0 | 1 | 100 | 3.47 |
| | CN | 96 | 9.4 | 26 | 35.4 | 38.5 | 16.7 | 9.4 | 26 | 0 | 0 | 100 | 3.09 |
| | JP | 99 | 8.1 | 20.2 | 28.3 | 33.3 | 33.3 | 5.1 | 38.4 | 0 | 0 | 100 | 2.93 |
| | IN | 101 | 8.9 | 26.7 | 35.6 | 34.7 | 15.8 | 13.9 | 29.7 | 0 | 0 | 100 | 3.01 |
| | ID | 100 | 12 | 12 | 24 | 40 | 22 | 14 | 36 | 0 | 0 | 100 | 2.86 |
| | VN | 100 | 11 | 30 | 41 | 29 | 22 | 8 | 30 | 0 | 0 | 100 | 3.14 |
| | DE | 100 | 14 | 14 | 28 | 57 | 11 | 4 | 15 | 0 | 0 | 100 | 3.23 |
| | FR | 100 | 12 | 16 | 28 | 33 | 20 | 19 | 39 | 0 | 0 | 100 | 2.82 |
| | UK | 96 | 13.5 | 18.8 | 32.3 | 37.5 | 21.9 | 8.3 | 30.2 | 0 | 0 | 100 | 3.07 |
| | IT | 93 | 7.5 | 22.6 | 30.1 | 35.5 | 33.3 | 0 | 33.3 | 1.1 | 0 | 100 | 3.09 |
| | AT | 98 | 17.3 | 15.3 | 32.7 | 58.2 | 5.1 | 4.1 | 9.2 | 0 | 0 | 100 | 3.37 |
| | DK | 97 | 10.3 | 18.6 | 28.9 | 43.3 | 21.6 | 6.2 | 27.8 | 0 | 0 | 100 | 3.05 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 9.6 | 26.8 | 36.4 | 35.1 | 19.1 | 9.2 | 28.4 | 0 | 0.2 | 100 | 3.08 |
| | EUROPE | 584 | 12.5 | 17.5 | 30 | 44.2 | 18.7 | 7 | 25.7 | 0.2 | 0 | 100 | 3.1 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-4] Level of Policy Needs - Support for Green Technology Commercialization*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 11.5 | 27.5 | 39 | 35.3 | 15.7 | 10 | 25.7 | 0.1 | 100 | 3.15 | 53.71 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 6 | 42 | 48 | 36 | 8 | 7 | 15 | 1 | 100 | 3.32 | 58.08 |
| | CN | 96 | 14.6 | 36.5 | 51 | 37.5 | 11.5 | 0 | 11.5 | 0 | 100 | 3.54 | 63.54 |
| | JP | 99 | 11.1 | 37.4 | 48.5 | 34.3 | 13.1 | 4 | 17.2 | 0 | 100 | 3.38 | 59.6 |
| | IN | 101 | 17.8 | 36.6 | 54.5 | 33.7 | 6.9 | 5 | 11.9 | 0 | 100 | 3.55 | 63.86 |
| | ID | 100 | 19 | 25 | 44 | 40 | 11 | 5 | 16 | 0 | 100 | 3.42 | 60.5 |
| | VN | 100 | 9 | 29 | 38 | 26 | 27 | 9 | 36 | 0 | 100 | 3.02 | 50.5 |
| | DE | 100 | 12 | 24 | 36 | 35 | 10 | 19 | 29 | 0 | 100 | 3 | 50 |
| | FR | 100 | 9 | 20 | 29 | 30 | 21 | 20 | 41 | 0 | 100 | 2.77 | 44.25 |
| | UK | 96 | 8.3 | 18.8 | 27.1 | 34.4 | 26 | 12.5 | 38.5 | 0 | 100 | 2.84 | 46.09 |
| | IT | 93 | 9.7 | 24.7 | 34.4 | 33.3 | 29 | 3.2 | 32.3 | 0 | 100 | 3.09 | 52.15 |
| | AT | 98 | 12.2 | 11.2 | 23.5 | 49 | 10.2 | 17.3 | 27.6 | 0 | 100 | 2.91 | 47.7 |
| | DK | 97 | 9.3 | 23.7 | 33 | 34 | 15.5 | 17.5 | 33 | 0 | 100 | 2.92 | 47.94 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 12.9 | 34.4 | 47.3 | 34.6 | 12.9 | 5 | 18 | 0.2 | 100 | 3.37 | 59.33 |
| | EUROPE | 584 | 10.1 | 20.4 | 30.5 | 36 | 18.5 | 15.1 | 33.6 | 0 | 100 | 2.92 | 47.99 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

***[Table 5-3-5] Level of Policy Needs - Support for More Appropriate Green Technology***

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 8.7 | 23.4 | 32.1 | 38.4 | 23.5 | 5.8 | 29.3 | 0.2 | 100 | 3.06 | 51.42 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 8 | 38 | 46 | 35 | 9 | 8 | 17 | 2 | 100 | 3.3 | 57.4 |
| | CN | 96 | 11.5 | 30.2 | 41.7 | 33.3 | 25 | 0 | 25 | 0 | 100 | 3.28 | 57.03 |
| | JP | 99 | 10.1 | 31.3 | 41.4 | 34.3 | 19.2 | 5.1 | 24.2 | 0 | 100 | 3.22 | 55.56 |
| | IN | 101 | 9.9 | 20.8 | 30.7 | 36.6 | 25.7 | 6.9 | 32.7 | 0 | 100 | 3.01 | 50.25 |
| | ID | 100 | 10 | 19 | 29 | 37 | 28 | 6 | 34 | 0 | 100 | 2.99 | 49.75 |
| | VN | 100 | 9 | 19 | 28 | 34 | 29 | 9 | 38 | 0 | 100 | 2.9 | 47.5 |
| | DE | 100 | 6 | 23 | 29 | 60 | 11 | 0 | 11 | 0 | 100 | 3.24 | 56 |
| | FR | 100 | 14 | 14 | 28 | 32 | 30 | 10 | 40 | 0 | 100 | 2.92 | 48 |
| | UK | 96 | 7.3 | 19.8 | 27.1 | 38.5 | 26 | 8.3 | 34.4 | 0 | 100 | 2.92 | 47.92 |
| | IT | 93 | 9.7 | 15.1 | 24.7 | 38.7 | 28 | 8.6 | 36.6 | 0 | 100 | 2.89 | 47.31 |
| | AT | 98 | 2 | 25.5 | 27.6 | 40.8 | 28.6 | 3.1 | 31.6 | 0 | 100 | 2.95 | 48.72 |
| | DK | 97 | 7.2 | 24.7 | 32 | 40.2 | 22.7 | 5.2 | 27.8 | 0 | 100 | 3.06 | 51.55 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 9.7 | 26.3 | 36.1 | 35.1 | 22.7 | 5.9 | 28.5 | 0.3 | 100 | 3.11 | 52.86 |
| | EUROPE | 584 | 7.7 | 20.4 | 28.1 | 41.8 | 24.3 | 5.8 | 30.1 | 0 | 100 | 3 | 49.96 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

***[Table 5-3-6] Level of Policy Needs - Tax Incentives for Purchase of Eco-friendly Products***

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 20.7 | 34.3 | 55 | 28.5 | 11.4 | 5.1 | 16.4 | 0.1 | 100 | 3.54 | 63.55 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 13 | 41 | 54 | 32 | 6 | 7 | 13 | 1 | 100 | 3.47 | 61.87 |
| | CN | 96 | 14.6 | 34.4 | 49 | 38.5 | 11.5 | 1 | 12.5 | 0 | 100 | 3.5 | 62.5 |
| | JP | 99 | 13.1 | 30.3 | 43.4 | 37.4 | 15.2 | 4 | 19.2 | 0 | 100 | 3.33 | 58.33 |
| | IN | 101 | 15.8 | 29.7 | 45.5 | 40.6 | 6.9 | 6.9 | 13.9 | 0 | 100 | 3.41 | 60.15 |
| | ID | 100 | 22 | 24 | 46 | 32 | 13 | 9 | 22 | 0 | 100 | 3.37 | 59.25 |
| | VN | 100 | 18 | 24 | 42 | 39 | 19 | 0 | 19 | 0 | 100 | 3.41 | 60.25 |
| | DE | 100 | 29 | 38 | 67 | 24 | 9 | 0 | 9 | 0 | 100 | 3.87 | 71.75 |
| | FR | 100 | 20 | 34 | 54 | 16 | 16 | 14 | 30 | 0 | 100 | 3.3 | 57.5 |
| | UK | 96 | 20.8 | 45.8 | 66.7 | 20.8 | 2.1 | 10.4 | 12.5 | 0 | 100 | 3.65 | 66.15 |
| | IT | 93 | 31.2 | 35.5 | 66.7 | 25.8 | 7.5 | 0 | 7.5 | 0 | 100 | 3.9 | 72.58 |
| | AT | 98 | 16.3 | 46.9 | 63.3 | 15.3 | 13.3 | 8.2 | 21.4 | 0 | 100 | 3.5 | 62.5 |
| | DK | 97 | 35.1 | 28.9 | 63.9 | 19.6 | 16.5 | 0 | 16.5 | 0 | 100 | 3.82 | 70.62 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 16.1 | 30.5 | 46.6 | 36.6 | 11.9 | 4.7 | 16.6 | 0.2 | 100 | 3.42 | 60.38 |
| | EUROPE | 584 | 25.3 | 38.2 | 63.5 | 20.2 | 10.8 | 5.5 | 16.3 | 0 | 100 | 3.67 | 66.78 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-7] Level of Policy Needs - Stricter Green Public Procurement*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 12.5 | 31.2 | 43.6 | 36.1 | 14.7 | 5.4 | 20.2 | 0.1 | 100 | 3.31 | 57.63 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 9 | 35 | 44 | 35 | 13 | 7 | 20 | 1 | 100 | 3.26 | 56.57 |
| | CN | 96 | 10.4 | 37.5 | 47.9 | 37.5 | 14.6 | 0 | 14.6 | 0 | 100 | 3.44 | 60.94 |
| | JP | 99 | 11.1 | 32.3 | 43.4 | 37.4 | 13.1 | 6.1 | 19.2 | 0 | 100 | 3.29 | 57.32 |
| | IN | 101 | 9.9 | 31.7 | 41.6 | 34.7 | 17.8 | 5.9 | 23.8 | 0 | 100 | 3.22 | 55.45 |
| | ID | 100 | 8 | 25 | 33 | 37 | 23 | 7 | 30 | 0 | 100 | 3.04 | 51 |
| | VN | 100 | 9 | 23 | 32 | 42 | 14 | 12 | 26 | 0 | 100 | 3.03 | 50.75 |
| | DE | 100 | 9 | 38 | 47 | 53 | 0 | 0 | 0 | 0 | 100 | 3.56 | 64 |
| | FR | 100 | 18 | 24 | 42 | 29 | 19 | 10 | 29 | 0 | 100 | 3.21 | 55.25 |
| | UK | 96 | 25 | 22.9 | 47.9 | 29.2 | 16.7 | 6.3 | 22.9 | 0 | 100 | 3.44 | 60.94 |
| | IT | 93 | 9.7 | 44.1 | 53.8 | 36.6 | 9.7 | 0 | 9.7 | 0 | 100 | 3.54 | 63.44 |
| | AT | 98 | 11.2 | 34.7 | 45.9 | 32.7 | 19.4 | 2 | 21.4 | 0 | 100 | 3.34 | 58.42 |
| | DK | 97 | 19.6 | 26.8 | 46.4 | 28.9 | 16.5 | 8.2 | 24.7 | 0 | 100 | 3.33 | 58.25 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 9.6 | 30.7 | 40.3 | 37.2 | 15.9 | 6.4 | 22.3 | 0.2 | 100 | 3.21 | 55.29 |
| | EUROPE | 584 | 15.4 | 31.7 | 47.1 | 34.9 | 13.5 | 4.5 | 18 | 0 | 100 | 3.4 | 60.02 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-8] Level of Policy Needs - Support for eco-labelling*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 9.6 | 24.2 | 33.7 | 37.1 | 23.4 | 5.7 | 29.1 | 0.1 | 100 | 3.09 | 52.14 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 13 | 44 | 57 | 22 | 12 | 8 | 20 | 1 | 100 | 3.42 | 60.61 |
| | CN | 96 | 7.3 | 25 | 32.3 | 33.3 | 28.1 | 6.3 | 34.4 | 0 | 100 | 2.99 | 49.74 |
| | JP | 99 | 9.1 | 24.2 | 33.3 | 31.3 | 30.3 | 5.1 | 35.4 | 0 | 100 | 3.02 | 50.51 |
| | IN | 101 | 10.9 | 23.8 | 34.7 | 28.7 | 25.7 | 10.9 | 36.6 | 0 | 100 | 2.98 | 49.5 |
| | ID | 100 | 8 | 17 | 25 | 29 | 33 | 13 | 46 | 0 | 100 | 2.74 | 43.5 |
| | VN | 100 | 7 | 14 | 21 | 17 | 50 | 12 | 62 | 0 | 100 | 2.54 | 38.5 |
| | DE | 100 | 9 | 23 | 32 | 59 | 9 | 0 | 9 | 0 | 100 | 3.32 | 58 |
| | FR | 100 | 11 | 16 | 27 | 40 | 23 | 10 | 33 | 0 | 100 | 2.95 | 48.75 |
| | UK | 96 | 10.4 | 17.7 | 28.1 | 42.7 | 29.2 | 0 | 29.2 | 0 | 100 | 3.09 | 52.34 |
| | IT | 93 | 4.3 | 25.8 | 30.1 | 46.2 | 21.5 | 2.2 | 23.7 | 0 | 100 | 3.09 | 52.15 |
| | AT | 98 | 16.3 | 37.8 | 54.1 | 41.8 | 4.1 | 0 | 4.1 | 0 | 100 | 3.66 | 66.58 |
| | DK | 97 | 8.2 | 21.6 | 29.9 | 55.7 | 14.4 | 0 | 14.4 | 0 | 100 | 3.24 | 55.93 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 9.2 | 24.7 | 33.9 | 26.8 | 29.9 | 9.2 | 39.1 | 0.2 | 100 | 2.95 | 48.7 |
| | EUROPE | 584 | 9.9 | 23.6 | 33.6 | 47.6 | 16.8 | 2.1 | 18.8 | 0 | 100 | 3.23 | 55.65 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-9] Level of Policy Needs - Support for product and service marketing*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 10.3 | 28.5 | 38.8 | 31.6 | 19.7 | 9.8 | 29.5 | 0.1 | 100 | 3.1 | 52.46 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 13 | 39 | 52 | 30 | 10 | 7 | 17 | 1 | 100 | 3.41 | 60.35 |
| | CN | 96 | 10.4 | 37.5 | 47.9 | 33.3 | 18.8 | 0 | 18.8 | 0 | 100 | 3.4 | 59.9 |
| | JP | 99 | 9.1 | 37.4 | 46.5 | 24.2 | 16.2 | 13.1 | 29.3 | 0 | 100 | 3.13 | 53.28 |
| | IN | 101 | 10.9 | 34.7 | 45.5 | 30.7 | 18.8 | 5 | 23.8 | 0 | 100 | 3.28 | 56.93 |
| | ID | 100 | 10 | 33 | 43 | 29 | 18 | 10 | 28 | 0 | 100 | 3.15 | 53.75 |
| | VN | 100 | 12 | 32 | 44 | 39 | 17 | 0 | 17 | 0 | 100 | 3.39 | 59.75 |
| | DE | 100 | 12 | 19 | 31 | 32 | 16 | 21 | 37 | 0 | 100 | 2.85 | 46.25 |
| | FR | 100 | 10 | 22 | 32 | 28 | 30 | 10 | 40 | 0 | 100 | 2.92 | 48 |
| | UK | 96 | 13.5 | 12.5 | 26 | 33.3 | 27.1 | 13.5 | 40.6 | 0 | 100 | 2.85 | 46.35 |
| | IT | 93 | 11.8 | 26.9 | 38.7 | 32.3 | 19.4 | 9.7 | 29 | 0 | 100 | 3.12 | 52.96 |
| | AT | 98 | 4.1 | 22.4 | 26.5 | 24.5 | 25.5 | 23.5 | 49 | 0 | 100 | 2.58 | 39.54 |
| | DK | 97 | 7.2 | 24.7 | 32 | 43.3 | 19.6 | 5.2 | 24.7 | 0 | 100 | 3.09 | 52.32 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 10.9 | 35.6 | 46.5 | 31 | 16.4 | 5.9 | 22.3 | 0.2 | 100 | 3.29 | 57.31 |
| | EUROPE | 584 | 9.8 | 21.2 | 31 | 32.2 | 22.9 | 13.9 | 36.8 | 0 | 100 | 2.9 | 47.52 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

***[Table 5-3-10] Level of Policy Needs - Support for Certification of Environment Management System for Enterprise***

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1179 | 9.6 | 21.5 | 31.1 | 37.1 | 25.2 | 6.4 | 31.6 | 0.1 | 100 | 3.03 | 50.74 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 9 | 41 | 50 | 32 | 12 | 5 | 17 | 0 | 100 | 3.37 | 59.34 |
| | CN | 96 | 14.6 | 28.1 | 42.7 | 26 | 24 | 6.3 | 30.2 | 1 | 100 | 3.25 | 56.25 |
| | JP | 98 | 9.2 | 28.6 | 37.8 | 28.6 | 17.3 | 16.3 | 33.7 | 0 | 100 | 2.97 | 49.23 |
| | IN | 101 | 8.9 | 24.8 | 33.7 | 30.7 | 30.7 | 5 | 35.6 | 0 | 100 | 3.02 | 50.5 |
| | ID | 100 | 8 | 23 | 31 | 37 | 28 | 4 | 32 | 0 | 100 | 3.03 | 50.75 |
| | VN | 100 | 7 | 17 | 24 | 47 | 20 | 9 | 29 | 0 | 100 | 2.93 | 48.25 |
| | DE | 100 | 14 | 12 | 26 | 38 | 36 | 0 | 36 | 0 | 100 | 3.04 | 51 |
| | FR | 100 | 8 | 12 | 20 | 36 | 34 | 10 | 44 | 0 | 100 | 2.74 | 43.5 |
| | UK | 96 | 10.4 | 10.4 | 20.8 | 30.2 | 36.5 | 12.5 | 49 | 0 | 100 | 2.7 | 42.45 |
| | IT | 93 | 7.5 | 29 | 36.6 | 39.8 | 14 | 9.7 | 23.7 | 0 | 100 | 3.11 | 52.69 |
| | AT | 98 | 10.2 | 10.2 | 20.4 | 42.9 | 36.7 | 0 | 36.7 | 0 | 100 | 2.94 | 48.47 |
| | DK | 97 | 8.2 | 22.7 | 30.9 | 56.7 | 12.4 | 0 | 12.4 | 0 | 100 | 3.27 | 56.7 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 595 | 9.4 | 27.1 | 36.5 | 33.6 | 22 | 7.6 | 29.6 | 0.2 | 100 | 3.09 | 52.36 |
| | EUROPE | 584 | 9.8 | 15.9 | 25.7 | 40.6 | 28.4 | 5.3 | 33.7 | 0 | 100 | 2.96 | 49.1 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

***[Table 5-3-11] Level of Policy Needs - Sharing Best Practice for Eco-innovation***

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 18.5 | 38 | 56.4 | 25.8 | 10.6 | 7 | 17.6 | 0.1 | 100 | 3.5 | 62.57 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 6 | 30 | 36 | 44 | 13 | 6 | 19 | 1 | 100 | 3.17 | 54.29 |
| | CN | 96 | 14.6 | 40.6 | 55.2 | 34.4 | 10.4 | 0 | 10.4 | 0 | 100 | 3.59 | 64.84 |
| | JP | 99 | 17.2 | 34.3 | 51.5 | 19.2 | 10.1 | 19.2 | 29.3 | 0 | 100 | 3.2 | 55.05 |
| | IN | 101 | 16.8 | 35.6 | 52.5 | 24.8 | 15.8 | 6.9 | 22.8 | 0 | 100 | 3.4 | 59.9 |
| | ID | 100 | 16 | 37 | 53 | 26 | 14 | 7 | 21 | 0 | 100 | 3.41 | 60.25 |
| | VN | 100 | 12 | 37 | 49 | 31 | 20 | 0 | 20 | 0 | 100 | 3.41 | 60.25 |
| | DE | 100 | 19 | 41 | 60 | 17 | 11 | 12 | 23 | 0 | 100 | 3.44 | 61 |
| | FR | 100 | 15 | 49 | 64 | 16 | 10 | 10 | 20 | 0 | 100 | 3.49 | 62.25 |
| | UK | 96 | 29.2 | 37.5 | 66.7 | 20.8 | 6.3 | 6.3 | 12.5 | 0 | 100 | 3.77 | 69.27 |
| | IT | 93 | 29 | 34.4 | 63.4 | 26.9 | 0 | 9.7 | 9.7 | 0 | 100 | 3.73 | 68.28 |
| | AT | 98 | 21.4 | 32.7 | 54.1 | 31.6 | 7.1 | 7.1 | 14.3 | 0 | 100 | 3.54 | 63.52 |
| | DK | 97 | 26.8 | 46.4 | 73.2 | 18.6 | 8.2 | 0 | 8.2 | 0 | 100 | 3.92 | 72.94 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 596 | 13.8 | 35.7 | 49.5 | 29.9 | 13.9 | 6.5 | 20.5 | 0.2 | 100 | 3.36 | 59.08 |
| | EUROPE | 584 | 23.3 | 40.2 | 63.5 | 21.7 | 7.2 | 7.5 | 14.7 | 0 | 100 | 3.65 | 66.14 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-12] Level of Policy Needs – More Personnel Training Support for Eco-innovation*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1179 | 13.1 | 27.9 | 41 | 36.6 | 16.2 | 6.2 | 22.4 | 0.1 | 100 | 3.25 | 56.37 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 7 | 32 | 39 | 39 | 15 | 6 | 21 | 1 | 100 | 3.19 | 54.8 |
| | CN | 96 | 13.5 | 28.1 | 41.7 | 36.5 | 19.8 | 2.1 | 21.9 | 0 | 100 | 3.31 | 57.81 |
| | JP | 98 | 9.2 | 34.7 | 43.9 | 25.5 | 16.3 | 14.3 | 30.6 | 0 | 100 | 3.08 | 52.04 |
| | IN | 101 | 12.9 | 32.7 | 45.5 | 25.7 | 21.8 | 6.9 | 28.7 | 0 | 100 | 3.23 | 55.69 |
| | ID | 100 | 10 | 31 | 41 | 27 | 25 | 7 | 32 | 0 | 100 | 3.12 | 53 |
| | VN | 100 | 17 | 24 | 41 | 29 | 24 | 6 | 30 | 0 | 100 | 3.22 | 55.5 |
| | DE | 100 | 11 | 29 | 40 | 46 | 10 | 4 | 14 | 0 | 100 | 3.33 | 58.25 |
| | FR | 100 | 18 | 26 | 44 | 30 | 16 | 10 | 26 | 0 | 100 | 3.26 | 56.5 |
| | UK | 96 | 18.8 | 18.8 | 37.5 | 40.6 | 7.3 | 14.6 | 21.9 | 0 | 100 | 3.2 | 54.95 |
| | IT | 93 | 12.9 | 32.3 | 45.2 | 45.2 | 9.7 | 0 | 9.7 | 0 | 100 | 3.48 | 62.1 |
| | AT | 98 | 10.2 | 20.4 | 30.6 | 45.9 | 20.4 | 3.1 | 23.5 | 0 | 100 | 3.14 | 53.57 |
| | DK | 97 | 16.5 | 25.8 | 42.3 | 49.5 | 8.2 | 0 | 8.2 | 0 | 100 | 3.51 | 62.63 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 595 | 11.6 | 30.4 | 42 | 30.4 | 20.3 | 7.1 | 27.4 | 0.2 | 100 | 3.19 | 54.8 |
| | EUROPE | 584 | 14.6 | 25.3 | 39.9 | 42.8 | 12 | 5.3 | 17.3 | 0 | 100 | 3.32 | 57.96 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-13] Level of Policy Needs – Eco-innovation Consulting*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1179 | 8.1 | 22.1 | 30.2 | 33.1 | 24.4 | 12.2 | 36.6 | 0.1 | 100 | 2.89 | 47.37 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 8 | 33 | 41 | 41 | 10 | 7 | 17 | 1 | 100 | 3.25 | 56.31 |
| | CN | 96 | 9.4 | 27.1 | 36.5 | 33.3 | 26 | 4.2 | 30.2 | 0 | 100 | 3.11 | 52.86 |
| | JP | 98 | 7.1 | 26.5 | 33.7 | 29.6 | 19.4 | 17.3 | 36.7 | 0 | 100 | 2.87 | 46.68 |
| | IN | 101 | 7.9 | 23.8 | 31.7 | 28.7 | 29.7 | 9.9 | 39.6 | 0 | 100 | 2.9 | 47.52 |
| | ID | 100 | 12 | 19 | 31 | 36 | 22 | 11 | 33 | 0 | 100 | 2.99 | 49.75 |
| | VN | 100 | 6 | 22 | 28 | 36 | 24 | 12 | 36 | 0 | 100 | 2.86 | 46.5 |
| | DE | 100 | 7 | 17 | 24 | 33 | 33 | 10 | 43 | 0 | 100 | 2.78 | 44.5 |
| | FR | 100 | 10 | 12 | 22 | 23 | 35 | 20 | 55 | 0 | 100 | 2.57 | 39.25 |
| | UK | 96 | 8.3 | 19.8 | 28.1 | 35.4 | 15.6 | 20.8 | 36.5 | 0 | 100 | 2.79 | 44.79 |
| | IT | 93 | 7.5 | 19.4 | 26.9 | 46.2 | 17.2 | 9.7 | 26.9 | 0 | 100 | 2.98 | 49.46 |
| | AT | 98 | 9.2 | 20.4 | 29.6 | 19.4 | 37.8 | 13.3 | 51 | 0 | 100 | 2.74 | 43.62 |
| | DK | 97 | 5.2 | 24.7 | 29.9 | 36.1 | 22.7 | 11.3 | 34 | 0 | 100 | 2.9 | 47.42 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 595 | 8.4 | 25.2 | 33.6 | 34.1 | 21.8 | 10.3 | 32.1 | 0.2 | 100 | 3 | 49.92 |
| | EUROPE | 584 | 7.9 | 18.8 | 26.7 | 32 | 27.1 | 14.2 | 41.3 | 0 | 100 | 2.79 | 44.78 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-3-14] Level of Policy Needs - Introduction of Green Supply Chain Management*

| | | Number of cases | ① Very high 5points (%) | ② High 4points (%) | ①+② (%) | ③ Average 3points (%) | ④ Low 2points (%) | ⑤ Very low 1points (%) | ④+⑤ (%) | N/A (%) | Total (%) | Average (points) | 100points Average (points) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1179 | 9.2 | 21.4 | 30.6 | 36.5 | 23 | 9.8 | 32.8 | 0.1 | 100 | 2.97 | 49.3 |
| ***By country*** | | | | | | | | | | | | | |
| | KR | 100 | 6 | 35 | 41 | 39 | 13 | 6 | 19 | 1 | 100 | 3.22 | 55.56 |
| | CN | 96 | 4.2 | 29.2 | 33.3 | 32.3 | 27.1 | 7.3 | 34.4 | 0 | 100 | 2.96 | 48.96 |
| | JP | 98 | 8.2 | 25.5 | 33.7 | 37.8 | 12.2 | 16.3 | 28.6 | 0 | 100 | 2.97 | 49.23 |
| | IN | 101 | 5.9 | 22.8 | 28.7 | 35.6 | 23.8 | 11.9 | 35.6 | 0 | 100 | 2.87 | 46.78 |
| | ID | 100 | 9 | 27 | 36 | 29 | 24 | 11 | 35 | 0 | 100 | 2.99 | 49.75 |
| | VN | 100 | 7 | 14 | 21 | 33 | 33 | 13 | 46 | 0 | 100 | 2.69 | 42.25 |
| | DE | 100 | 11 | 16 | 27 | 35 | 38 | 0 | 38 | 0 | 100 | 3 | 50 |
| | FR | 100 | 9 | 12 | 21 | 37 | 32 | 10 | 42 | 0 | 100 | 2.78 | 44.5 |
| | UK | 96 | 18.8 | 14.6 | 33.3 | 37.5 | 14.6 | 14.6 | 29.2 | 0 | 100 | 3.08 | 52.08 |
| | IT | 93 | 10.8 | 20.4 | 31.2 | 41.9 | 19.4 | 7.5 | 26.9 | 0 | 100 | 3.08 | 51.88 |
| | AT | 98 | 10.2 | 18.4 | 28.6 | 37.8 | 21.4 | 12.2 | 33.7 | 0 | 100 | 2.93 | 48.21 |
| | DK | 97 | 11.3 | 21.6 | 33 | 42.3 | 16.5 | 8.2 | 24.7 | 0 | 100 | 3.11 | 52.84 |
| ***By region*** | | | | | | | | | | | | | |
| | ASIA | 595 | 6.7 | 25.5 | 32.3 | 34.5 | 22.2 | 10.9 | 33.1 | 0.2 | 100 | 2.95 | 48.74 |
| | EUROPE | 584 | 11.8 | 17.1 | 28.9 | 38.5 | 23.8 | 8.7 | 32.5 | 0 | 100 | 2.99 | 49.87 |

*Q5-3: Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).*

## *[Table 5-4] Purposes of Eco-innovation Activities (Select 3 answers)*

| | | Number of cases | Improvement of company/product image (%) | Compliance of environmental regulations/standards (%) | Secure or increase market share (%) | Cost reduction or more efficient production (%) | development of eco-friendly products (%) | Government support' such as funding' tax favors or fiscal incentives (%) | Introduction of eco-friendly production method (%) | Reduction of resources used in process (%) | Other (%) | Needs for required equipment (%) | No (%) | N/A (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 67.6 | 50.6 | 40 | 36.6 | 26.9 | 23.5 | 22.5 | 16.2 | 4 | 0.1 | 0.2 | 0.1 |
| ***By country*** | | | | | | | | | | | | | | |
| | KR | 100 | 52 | 39 | 52 | 42 | 32 | 16 | 25 | 14 | 0 | 1 | 2 | 1 |
| | CN | 96 | 53.1 | 44.8 | 43.8 | 30.2 | 28.1 | 18.8 | 34.4 | 36.5 | 0 | 0 | 0 | 0 |
| | JP | 99 | 60.6 | 33.3 | 39.4 | 41.4 | 18.2 | 32.3 | 27.3 | 21.2 | 9.1 | 0 | 0 | 0 |
| | IN | 101 | 54.5 | 48.5 | 45.5 | 13.9 | 28.7 | 47.5 | 41.6 | 19.8 | 0 | 0 | 0 | 0 |
| | ID | 100 | 66 | 38 | 46 | 27 | 27 | 47 | 25 | 21 | 0 | 0 | 0 | 0 |
| | VN | 100 | 100 | 0 | 0 | 100 | 0 | 67 | 0 | 0 | 33 | 0 | 0 | 0 |
| | DE | 100 | 70 | 80 | 53 | 19 | 29 | 0 | 19 | 10 | 0 | 0 | 0 | 0 |
| | FR | 100 | 60 | 55 | 32 | 30 | 30 | 21 | 32 | 20 | 0 | 0 | 0 | 0 |
| | UK | 96 | 63.5 | 64.6 | 43.8 | 27.1 | 19.8 | 16.7 | 9.4 | 20.8 | 5.2 | 0 | 0 | 0 |
| | IT | 93 | 75.3 | 68.8 | 41.9 | 32.3 | 33.3 | 3.2 | 22.6 | 18.3 | 0 | 0 | 0 | 0 |
| | AT | 98 | 65.3 | 81.6 | 51 | 23.5 | 40.8 | 1 | 21.4 | 11.2 | 0 | 0 | 0 | 0 |
| | DK | 97 | 91.8 | 55.7 | 32 | 52.6 | 37.1 | 8.2 | 11.3 | 2.1 | 0 | 0 | 0 | 0 |
| ***By region*** | | | | | | | | | | | | | | |
| | ASIA | 596 | 64.4 | 33.9 | 37.8 | 42.4 | 22.3 | 38.3 | 25.5 | 18.6 | 7 | 0.2 | 0.3 | 0.2 |
| | EUROPE | 584 | 70.9 | 67.6 | 42.3 | 30.7 | 31.7 | 8.4 | 19.3 | 13.7 | 0.9 | 0 | 0 | 0 |

*Q5-4: For what purposes did your company introduce technology, provide improvement methods, and make efforts for eco-innovation ? (select 3 answers)*

***[Table 5-5-1] Level of Barriers to Eco-innovation - Difficulty in Developing or Acquiring Original Technology***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1160 | 6.1 | 23.4 | 29.5 | 37.4 | 21.0 | 9.9 | 30.8 | 2.3 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 80 | 3.8 | 2.5 | 6.3 | 18.8 | 55 | 20 | 75 | 0 | 100 |
| | CN | 96 | 12.5 | 32.3 | 44.8 | 24 | 22.9 | 4.2 | 27.1 | 4.2 | 100 |
| | JP | 99 | 4 | 23.2 | 27.2 | 34.3 | 20.2 | 4 | 24.2 | 14.1 | 100 |
| | IN | 101 | 8.9 | 31.7 | 40.6 | 28.7 | 15.8 | 5.9 | 21.7 | 8.9 | 100 |
| | ID | 100 | 16 | 29 | 45 | 30 | 19 | 6 | 25 | 0 | 100 |
| | VN | 100 | 2 | 36 | 38 | 48 | 10 | 4 | 14 | 0 | 100 |
| | DE | 100 | 0 | 28 | 28 | 45 | 17 | 10 | 27 | 0 | 100 |
| | FR | 100 | 4 | 14 | 18 | 43 | 25 | 14 | 39 | 0 | 100 |
| | UK | 96 | 12.5 | 22.9 | 35.4 | 31.3 | 18.8 | 14.6 | 33.4 | 0 | 100 |
| | IT | 93 | 9.7 | 17.2 | 26.9 | 48.4 | 9.7 | 15.1 | 24.8 | 0 | 100 |
| | AT | 98 | 0 | 27.6 | 27.6 | 44.9 | 10.2 | 17.3 | 27.5 | 0 | 100 |
| | DK | 97 | 0 | 16.5 | 16.5 | 52.6 | 27.8 | 3.1 | 30.9 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 576 | 7.9 | 25.8 | 33.7 | 30.6 | 23.8 | 7.4 | 31.2 | 4.5 | 100 |
| | EUROPE | 584 | 4.4 | 21.0 | 25.4 | 44.2 | 18.1 | 12.4 | 30.4 | 0.0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-2] Level of Barriers to Eco-innovation - Difficulty in Developing Technologies related Eco-design and PPMs***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1152 | 9.8 | 18.3 | 28.1 | 28.8 | 26 | 15.4 | 41.5 | 1.7 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 73 | 1.4 | 4.1 | 5.5 | 17.8 | 57.5 | 19.2 | 76.7 | 0 | 100 |
| | CN | 96 | 13.5 | 17.7 | 31.2 | 22.9 | 33.3 | 10.4 | 43.7 | 2.1 | 100 |
| | JP | 98 | 12.2 | 16.3 | 28.5 | 21.4 | 26.5 | 13.3 | 39.8 | 10.2 | 100 |
| | IN | 101 | 12.9 | 13.9 | 26.8 | 20.8 | 20.8 | 25.7 | 46.5 | 5.9 | 100 |
| | ID | 100 | 13 | 16 | 29 | 27 | 29 | 13 | 42 | 2 | 100 |
| | VN | 100 | 0 | 29 | 29 | 35 | 24 | 12 | 36 | 0 | 100 |
| | DE | 100 | 0 | 23 | 23 | 43 | 18 | 16 | 34 | 0 | 100 |
| | FR | 100 | 11 | 13 | 24 | 36 | 24 | 16 | 40 | 0 | 100 |
| | UK | 96 | 16.7 | 31.3 | 48 | 20.8 | 14.6 | 16.7 | 31.3 | 0 | 100 |
| | IT | 93 | 17.2 | 9.7 | 26.9 | 34.4 | 19.4 | 19.4 | 38.8 | 0 | 100 |
| | AT | 98 | 0 | 24.5 | 24.5 | 42.9 | 16.3 | 16.3 | 32.6 | 0 | 100 |
| | DK | 97 | 19.6 | 20.6 | 40.2 | 23.7 | 28.9 | 7.2 | 36.1 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 8.8 | 16.2 | 25.0 | 24.2 | 31.9 | 15.6 | 47.5 | 3.4 | 100 | 100 |
| | EUROPE | 10.8 | 20.4 | 31.1 | 33.5 | 20.2 | 15.3 | 35.5 | 0.0 | 100 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-3] Level of Barriers to Eco-innovation - Difficulty in Assessing Products and Process Reliability***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1147 | 4.4 | 15.6 | 19.9 | 34.8 | 31.8 | 12.0 | 43.8 | 1.5 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 68 | 1.5 | 2.9 | 4.4 | 29.4 | 54.4 | 11.8 | 66.2 | 0 | 100 |
| | CN | 96 | 7.3 | 22.9 | 30.2 | 28.1 | 32.3 | 7.3 | 39.6 | 2.1 | 100 |
| | JP | 98 | 2 | 25.5 | 27.5 | 30.6 | 23.5 | 8.2 | 31.7 | 10.2 | 100 |
| | IN | 101 | 5.9 | 16.8 | 22.7 | 41.6 | 21.8 | 7.9 | 29.7 | 5.9 | 100 |
| | ID | 100 | 6 | 19 | 25 | 37 | 26 | 12 | 38 | 0 | 100 |
| | VN | 100 | 0 | 10 | 10 | 49 | 34 | 7 | 41 | 0 | 100 |
| | DE | 100 | 0 | 13 | 13 | 38 | 40 | 9 | 49 | 0 | 100 |
| | FR | 100 | 13 | 8 | 21 | 37 | 32 | 10 | 42 | 0 | 100 |
| | UK | 96 | 7.3 | 17.7 | 25 | 24 | 26 | 25 | 51 | 0 | 100 |
| | IT | 93 | 0 | 14 | 14 | 34.4 | 29 | 22.6 | 51.6 | 0 | 100 |
| | AT | 98 | 0 | 27.6 | 27.6 | 32.7 | 26.5 | 13.3 | 39.8 | 0 | 100 |
| | DK | 97 | 9.3 | 9.3 | 18.6 | 36.1 | 36.1 | 9.3 | 45.4 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 563 | 3.8 | 16.2 | 20 | 36 | 32 | 9 | 41 | 3 | 100 |
| | EUROPE | 584 | 4.9 | 14.9 | 19.9 | 33.7 | 31.6 | 14.9 | 46.5 | 0.0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-4] Level of Barriers to Eco-innovation - Lack of Funds within Enterprise for Eco-innovation***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1149 | 5.9 | 14.4 | 20.3 | 27.9 | 31.0 | 19.8 | 50.8 | 1.1 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 70 | 0 | 2.9 | 2.9 | 14.3 | 45.7 | 37.1 | 82.9 | 0 | 100 |
| | CN | 96 | 7.3 | 16.7 | 24 | 24 | 31.3 | 17.7 | 49 | 3.1 | 100 |
| | JP | 98 | 6.1 | 20.4 | 26.5 | 26.5 | 24.5 | 15.3 | 39.8 | 7.1 | 100 |
| | IN | 101 | 5.9 | 11.9 | 17.8 | 30.7 | 25.7 | 23.8 | 49.5 | 2 | 100 |
| | ID | 100 | 6 | 11 | 17 | 24 | 37 | 21 | 58 | 1 | 100 |
| | VN | 100 | 6 | 10 | 16 | 24 | 33 | 27 | 60 | 0 | 100 |
| | DE | 100 | 0 | 16 | 16 | 38 | 37 | 9 | 46 | 0 | 100 |
| | FR | 100 | 19 | 11 | 30 | 30 | 23 | 17 | 40 | 0 | 100 |
| | UK | 96 | 8.3 | 18.8 | 27.1 | 20.8 | 27.1 | 25 | 52.1 | 0 | 100 |
| | IT | 93 | 7.5 | 19.4 | 26.9 | 29 | 20.4 | 23.7 | 44.1 | 0 | 100 |
| | AT | 98 | 4.1 | 20.4 | 24.5 | 29.6 | 36.7 | 9.2 | 45.9 | 0 | 100 |
| | DK | 97 | 0 | 14.4 | 14.4 | 43.3 | 30.9 | 11.3 | 42.2 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 565 | 5.2 | 12.2 | 17.4 | 23.9 | 32.9 | 23.7 | 56.5 | 2.2 | 100 |
| | EUROPE | 584 | 6.5 | 16.7 | 23.2 | 31.8 | 29.2 | 15.9 | 45.1 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

## *[Table 5-5-5] Level of Barriers to Eco-innovation - Lack of external finance*

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1120 | 7.7 | 19.6 | 27.3 | 26.9 | 27.6 | 16.5 | 44.1 | 1.8 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 41 | 0 | 0 | 0 | 26.8 | 39 | 31.7 | 70.7 | 2.4 | 100 |
| | CN | 96 | 10.4 | 17.7 | 28.1 | 25 | 28.1 | 16.7 | 44.8 | 2.1 | 100 |
| | JP | 98 | 7.1 | 14.3 | 21.4 | 25.5 | 33.7 | 10.2 | 43.9 | 9.2 | 100 |
| | IN | 101 | 11.9 | 8.9 | 20.8 | 20.8 | 29.7 | 22.8 | 52.5 | 5.9 | 100 |
| | ID | 100 | 10 | 24 | 34 | 21 | 27 | 16 | 43 | 2 | 100 |
| | VN | 100 | 10 | 9 | 19 | 30 | 33 | 18 | 51 | 0 | 100 |
| | DE | 100 | 0 | 41 | 41 | 20 | 32 | 7 | 39 | 0 | 100 |
| | FR | 100 | 11 | 18 | 29 | 34 | 25 | 12 | 37 | 0 | 100 |
| | UK | 96 | 25 | 12.5 | 37.5 | 27.1 | 20.8 | 14.6 | 35.4 | 0 | 100 |
| | IT | 93 | 0 | 26.9 | 26.9 | 34.4 | 19.4 | 19.4 | 38.8 | 0 | 100 |
| | AT | 98 | 2 | 50 | 52 | 11.2 | 18.4 | 18.4 | 36.8 | 0 | 100 |
| | DK | 97 | 5.2 | 12.4 | 17.6 | 46.4 | 24.7 | 11.3 | 36 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 536 | 8.2 | 12.3 | 20.6 | 24.9 | 31.8 | 19.2 | 51 | 3.6 | 100 |
| | EUROPE | 584 | 7.2 | 26.8 | 34 | 28.9 | 23.4 | 13.8 | 37.2 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-6] Level of Barriers to Eco-innovation - Lack of R&D Personnel and Technological Capabilities***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1152 | 7.6 | 12.6 | 20.2 | 24.8 | 35.0 | 18.3 | 53.3 | 1.8 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 73 | 2.7 | 4.1 | 6.8 | 17.8 | 49.3 | 24.7 | 74 | 1.4 | 100 |
| | CN | 96 | 5.2 | 18.8 | 24 | 20.8 | 36.5 | 15.6 | 52.1 | 3.1 | 100 |
| | JP | 98 | 5.1 | 20.4 | 25.5 | 23.5 | 30.6 | 12.2 | 42.8 | 8.2 | 100 |
| | IN | 101 | 8.9 | 7.9 | 16.8 | 22.8 | 41.6 | 11.9 | 53.5 | 6.9 | 100 |
| | ID | 100 | 9 | 19 | 28 | 23 | 31 | 16 | 47 | 2 | 100 |
| | VN | 100 | 9 | 18 | 27 | 26 | 28 | 19 | 47 | 0 | 100 |
| | DE | 100 | 0 | 13 | 13 | 34 | 39 | 14 | 53 | 0 | 100 |
| | FR | 100 | 12 | 10 | 22 | 30 | 32 | 16 | 48 | 0 | 100 |
| | UK | 96 | 8.3 | 17.7 | 26 | 20.8 | 25 | 28.1 | 53.1 | 0 | 100 |
| | IT | 93 | 19.4 | 14 | 33.4 | 12.9 | 37.6 | 16.1 | 53.7 | 0 | 100 |
| | AT | 98 | 4.1 | 5.1 | 9.2 | 32.7 | 25.5 | 32.7 | 58.2 | 0 | 100 |
| | DK | 97 | 7.2 | 3.1 | 10.3 | 33 | 43.3 | 13.4 | 56.7 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 568 | 6.7 | 14.7 | 21.4 | 22.3 | 36.2 | 16.6 | 52.7 | 3.6 | 100 |
| | EUROPE | 584 | 8.5 | 10.5 | 19 | 27.2 | 33.7 | 20.1 | 53.8 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

## *[Table 5-5-7] Level of Barriers to Eco-innovation - Lack of Production Workers*

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1145 | 6.0 | 12.0 | 18.1 | 28.8 | 33.8 | 17.4 | 51.2 | 1.9 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 65 | 0 | 3.1 | 3.1 | 24.6 | 56.9 | 15.4 | 72.3 | 0 | 100 |
| | CN | 96 | 9.4 | 14.6 | 24 | 18.8 | 38.5 | 17.7 | 56.2 | 1 | 100 |
| | JP | 99 | 9.1 | 11.1 | 20.2 | 18.2 | 34.3 | 12.1 | 46.4 | 15.2 | 100 |
| | IN | 101 | 7.9 | 6.9 | 14.8 | 23.8 | 38.6 | 16.8 | 55.4 | 5.9 | 100 |
| | ID | 100 | 6 | 10 | 16 | 23 | 38 | 22 | 60 | 1 | 100 |
| | VN | 100 | 7 | 10 | 17 | 27 | 34 | 22 | 56 | 0 | 100 |
| | DE | 100 | 0 | 0 | 0 | 44 | 38 | 18 | 56 | 0 | 100 |
| | FR | 100 | 10 | 20 | 30 | 22 | 10 | 38 | 48 | 0 | 100 |
| | UK | 96 | 8.3 | 14.6 | 22.9 | 29.2 | 39.6 | 8.3 | 47.9 | 0 | 100 |
| | IT | 93 | 5.4 | 8.6 | 14 | 32.3 | 36.6 | 17.2 | 53.8 | 0 | 100 |
| | AT | 98 | 0 | 9.2 | 9.2 | 36.7 | 32.7 | 21.4 | 54.1 | 0 | 100 |
| | DK | 97 | 9.3 | 36.1 | 45.4 | 46.4 | 8.2 | 0 | 8.2 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 561 | 6.6 | 9.3 | 15.9 | 22.6 | 40.1 | 17.7 | 57.7 | 3.9 | 100 |
| | EUROPE | 584 | 5.5 | 14.8 | 20.3 | 35.1 | 27.5 | 17.2 | 44.7 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

## *[Table 5-5-8] Level of Barriers to Eco-innovation - Lack of Cooperative Partners*

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1121 | 6.4 | 17.4 | 23.8 | 25.4 | 33.9 | 15.2 | 49.1 | 1.7 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 41 | 2.4 | 4.9 | 7.3 | 31.7 | 46.3 | 14.6 | 61 | 0 | 100 |
| | CN | 96 | 7.3 | 30.2 | 37.5 | 24 | 29.2 | 7.3 | 36.5 | 2.1 | 100 |
| | JP | 99 | 7.1 | 25.3 | 32.4 | 28.3 | 21.2 | 7.1 | 28.3 | 11.1 | 100 |
| | IN | 101 | 4 | 5 | 9 | 28.7 | 44.6 | 10.9 | 55.5 | 6.9 | 100 |
| | ID | 100 | 12 | 17 | 29 | 22 | 37 | 12 | 49 | 0 | 100 |
| | VN | 100 | 6 | 9 | 15 | 30 | 41 | 14 | 55 | 0 | 100 |
| | DE | 100 | 0 | 26 | 26 | 21 | 38 | 15 | 53 | 0 | 100 |
| | FR | 100 | 12 | 15 | 27 | 18 | 42 | 13 | 55 | 0 | 100 |
| | UK | 96 | 8.3 | 17.7 | 26 | 35.4 | 24 | 14.6 | 38.6 | 0 | 100 |
| | IT | 93 | 14 | 5.4 | 19.4 | 22.6 | 40.9 | 17.2 | 58.1 | 0 | 100 |
| | AT | 98 | 0 | 31.6 | 31.6 | 21.4 | 23.5 | 23.5 | 47 | 0 | 100 |
| | DK | 97 | 4.1 | 21.6 | 25.7 | 21.6 | 19.6 | 33 | 52.6 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 537 | 6.5 | 15.2 | 21.7 | 27.5 | 36.6 | 11.0 | 47.6 | 3.4 | 100 |
| | EUROPE | 584 | 6.4 | 19.6 | 26 | 23.3 | 31.3 | 19.4 | 50.7 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-9] Level of Barriers to Eco-innovation – Uncertainty of Market Demand for Eco-innovation***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1144 | 5.8 | 15.8 | 21.6 | 33.0 | 29.1 | 14.1 | 43.2 | 2.3 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 64 | 1.6 | 4.7 | 6.3 | 25 | 56.3 | 12.5 | 68.8 | 0 | 100 |
| | CN | 96 | 2.1 | 22.9 | 25 | 34.4 | 24 | 13.5 | 37.5 | 3.1 | 100 |
| | JP | 99 | 3 | 11.1 | 14.1 | 36.4 | 23.2 | 10.1 | 33.3 | 16.2 | 100 |
| | IN | 101 | 4 | 6.9 | 10.9 | 29.7 | 37.6 | 15.8 | 53.4 | 5.9 | 100 |
| | ID | 100 | 2 | 19 | 21 | 33 | 31 | 13 | 44 | 2 | 100 |
| | VN | 100 | 11 | 15 | 26 | 27 | 30 | 17 | 47 | 0 | 100 |
| | DE | 100 | 0 | 13 | 13 | 44 | 25 | 18 | 43 | 0 | 100 |
| | FR | 100 | 10 | 38 | 48 | 12 | 30 | 10 | 40 | 0 | 100 |
| | UK | 96 | 12.5 | 7.3 | 19.8 | 63.5 | 12.5 | 4.2 | 16.7 | 0 | 100 |
| | IT | 93 | 16.1 | 14 | 30.1 | 26.9 | 23.7 | 19.4 | 43.1 | 0 | 100 |
| | AT | 98 | 0 | 18.4 | 18.4 | 35.7 | 28.6 | 17.3 | 45.9 | 0 | 100 |
| | DK | 97 | 7.2 | 19.6 | 26.8 | 27.8 | 26.8 | 18.6 | 45.4 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 560 | 4.0 | 13.3 | 17.2 | 30.9 | 33.7 | 13.7 | 47.3 | 4.5 | 100 |
| | EUROPE | 584 | 7.6 | 18.4 | 26 | 35 | 24.4 | 14.6 | 39 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-10] Level of Barriers to Eco-innovation - Difficulty in Finding a point of entry in markets***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1152 | 7.3 | 18.5 | 25.8 | 30.3 | 29.6 | 12.6 | 42.2 | 1.7 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 72 | 1.4 | 4.2 | 5.6 | 23.6 | 58.3 | 12.5 | 70.8 | 0 | 100 |
| | CN | 96 | 7.3 | 24 | 31.3 | 20.8 | 30.2 | 15.6 | 45.8 | 2.1 | 100 |
| | JP | 99 | 8.1 | 18.2 | 26.3 | 21.2 | 26.3 | 13.1 | 39.4 | 13.1 | 100 |
| | IN | 101 | 7.9 | 6.9 | 14.8 | 23.8 | 38.6 | 17.8 | 56.4 | 5 | 100 |
| | ID | 100 | 7 | 14 | 21 | 19 | 41 | 19 | 60 | 0 | 100 |
| | VN | 100 | 6 | 11 | 17 | 26 | 37 | 20 | 57 | 0 | 100 |
| | DE | 100 | 9 | 22 | 31 | 42 | 18 | 9 | 27 | 0 | 100 |
| | FR | 100 | 10 | 25 | 35 | 40 | 15 | 10 | 25 | 0 | 100 |
| | UK | 96 | 6.3 | 41.7 | 48 | 22.9 | 20.8 | 8.3 | 29.1 | 0 | 100 |
| | IT | 93 | 9.7 | 16.1 | 25.8 | 45.2 | 22.6 | 6.5 | 29.1 | 0 | 100 |
| | AT | 98 | 10.2 | 21.4 | 31.6 | 37.8 | 18.4 | 12.2 | 30.6 | 0 | 100 |
| | DK | 97 | 5.2 | 17.5 | 22.7 | 41.2 | 28.9 | 7.2 | 36.1 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 568 | 6.3 | 13.1 | 19.3 | 22.4 | 38.6 | 16.3 | 54.9 | 3.4 | 100 |
| | EUROPE | 584 | 8.4 | 24 | 32.4 | 38.2 | 20.6 | 8.9 | 29.5 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-11] Level of Barriers to Eco-innovation - Difficulty in coping with regulations***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1126 | 10.7 | 13.5 | 24.2 | 33.0 | 27.6 | 13.7 | 41.3 | 1.5 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 46 | 0 | 2.2 | 2.2 | 28.3 | 50 | 19.6 | 69.6 | 0 | 100 |
| | CN | 96 | 9.4 | 19.8 | 29.2 | 20.8 | 34.4 | 13.5 | 47.9 | 2.1 | 100 |
| | JP | 99 | 6.1 | 16.2 | 22.3 | 25.3 | 30.3 | 12.1 | 42.4 | 10.1 | 100 |
| | IN | 101 | 5.9 | 6.9 | 12.8 | 22.8 | 41.6 | 16.8 | 58.4 | 5.9 | 100 |
| | ID | 100 | 13 | 18 | 31 | 23 | 31 | 15 | 46 | 0 | 100 |
| | VN | 100 | 8 | 14 | 22 | 34 | 31 | 13 | 44 | 0 | 100 |
| | DE | 100 | 2 | 14 | 16 | 52 | 16 | 16 | 32 | 0 | 100 |
| | FR | 100 | 20 | 20 | 40 | 31 | 20 | 9 | 29 | 0 | 100 |
| | UK | 96 | 16.7 | 12.5 | 29.2 | 37.5 | 14.6 | 18.8 | 33.4 | 0 | 100 |
| | IT | 93 | 17.2 | 18.3 | 35.5 | 37.6 | 15.1 | 11.8 | 26.9 | 0 | 100 |
| | AT | 98 | 21.4 | 5.1 | 26.5 | 37.8 | 22.4 | 13.3 | 35.7 | 0 | 100 |
| | DK | 97 | 8.2 | 15.5 | 23.7 | 46.4 | 24.7 | 5.2 | 29.9 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 542 | 7.1 | 12.9 | 19.9 | 25.7 | 36.4 | 15 | 51.4 | 3. | 100 |
| | EUROPE | 584 | 14.3 | 14.2 | 28.5 | 40.4 | 18.8 | 12.4 | 31.2 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-12] Level of Barriers to Eco-innovation - Insufficient Support from Local and National Governments***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1132 | 9.2 | 17.3 | 26.5 | 28.2 | 29.9 | 14.3 | 44.2 | 1.1 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 52 | 0 | 1.9 | 1.9 | 32.7 | 42.3 | 23.1 | 65.4 | 0 | 100 |
| | CN | 96 | 8.3 | 22.9 | 31.2 | 22.9 | 28.1 | 15.6 | 43.7 | 2.1 | 100 |
| | JP | 99 | 5.1 | 20.2 | 25.3 | 21.2 | 30.3 | 15.2 | 45.5 | 8.1 | 100 |
| | IN | 101 | 5 | 6.9 | 11.9 | 25.7 | 41.6 | 17.8 | 59.4 | 3 | 100 |
| | ID | 100 | 11 | 17 | 28 | 27 | 30 | 15 | 45 | 0 | 100 |
| | VN | 100 | 14 | 16 | 30 | 24 | 37 | 9 | 46 | 0 | 100 |
| | DE | 100 | 10 | 12 | 22 | 41 | 20 | 17 | 37 | 0 | 100 |
| | FR | 100 | 13 | 19 | 32 | 33 | 23 | 12 | 35 | 0 | 100 |
| | UK | 96 | 8.3 | 32.3 | 40.6 | 19.8 | 30.2 | 9.4 | 39.6 | 0 | 100 |
| | IT | 93 | 9.7 | 19.4 | 29.1 | 25.8 | 28 | 17.2 | 45.2 | 0 | 100 |
| | AT | 98 | 16.3 | 21.4 | 37.7 | 29.6 | 21.4 | 11.2 | 32.6 | 0 | 100 |
| | DK | 97 | 9.3 | 18.6 | 27.9 | 36.1 | 26.8 | 9.3 | 36.1 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 548 | 7.2 | 14.2 | 21.4 | 25.6 | 34.9 | 16 | 50.8 | 2.2 | 100 |
| | EUROPE | 584 | 11.1 | 20.5 | 31.6 | 30.9 | 24.9 | 12.7 | 37.6 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-5-13] Level of Barriers to Eco-innovation - Insufficient Infrastructure for Eco-innovation***

| | | Number of cases | ① Very low 1points (%) | ② Low 2points (%) | ①+② (%) | ③ Average 3points (%) | ④ High 4points (%) | ⑤ Very high 5points (%) | ④+⑤ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1148 | 7.4 | 19.3 | 26.7 | 33.3 | 27.5 | 10.5 | 38.0 | 2.0 | 100 |
| ***By country*** | | | | | | | | | | | |
| | KR | 68 | 0 | 2.9 | 2.9 | 33.8 | 44.1 | 19.1 | 63.2 | 0 | 100 |
| | CN | 96 | 5.2 | 20.8 | 26 | 27.1 | 31.3 | 13.5 | 44.8 | 2.1 | 100 |
| | JP | 99 | 6.1 | 17.2 | 23.3 | 23.2 | 29.3 | 12.1 | 41.4 | 12.1 | 100 |
| | IN | 101 | 9.9 | 17.8 | 27.7 | 20.8 | 30.7 | 12.9 | 43.6 | 7.9 | 100 |
| | ID | 100 | 7 | 18 | 25 | 31 | 29 | 13 | 42 | 2 | 100 |
| | VN | 100 | 10 | 18 | 28 | 29 | 30 | 13 | 43 | 0 | 100 |
| | DE | 100 | 1 | 33 | 34 | 37 | 21 | 8 | 29 | 0 | 100 |
| | FR | 100 | 10 | 20 | 30 | 43 | 19 | 8 | 27 | 0 | 100 |
| | UK | 96 | 17.7 | 20.8 | 38.5 | 25 | 29.2 | 7.3 | 36.5 | 0 | 100 |
| | IT | 93 | 7.5 | 19.4 | 26.9 | 52.7 | 15.1 | 5.4 | 20.5 | 0 | 100 |
| | AT | 98 | 9.2 | 22.4 | 31.6 | 34.7 | 23.5 | 10.2 | 33.7 | 0 | 100 |
| | DK | 97 | 5.2 | 21.6 | 26.8 | 42.3 | 27.8 | 3.1 | 30.9 | 0 | 100 |
| ***By region*** | | | | | | | | | | | |
| | ASIA | 564 | 6.4 | 15.8 | 22.2 | 27.5 | 32.4 | 13.9 | 46.3 | 4 | 100 |
| | EUROPE | 584 | 8.4 | 22.9 | 31.3 | 39.1 | 22.6 | 7 | 29.6 | 0 | 100 |

*Q5-5: Please evaluate the level of barriers to an accelerated uptake of eco-innovation.*

***[Table 5-6-1] Level of Importance of Drivers for Eco-innovation - Future increase in energy and raw material prices***

| | | Number of cases | ① Very important (%) | ② Important (%) | ①+② (%) | ③ Slightly important (%) | ④ Not at all (%) | ③+④ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 56.4 | 30.8 | 87.3 | 10.2 | 2.5 | 12.6 | 0.1 | 100 |
| ***By country*** | | | | | | | | | | |
| | KR | 100 | 84 | 12 | 96 | 3 | 1 | 4 | 0 | 100 |
| | CN | 96 | 71.9 | 24 | 95.8 | 3.1 | 0 | 3.1 | 1 | 100 |
| | JP | 99 | 69.7 | 18.2 | 87.9 | 7.1 | 5.1 | 12.1 | 0 | 100 |
| | IN | 101 | 64.4 | 28.7 | 93.1 | 0 | 6.9 | 6.9 | 0 | 100 |
| | ID | 100 | 68 | 24 | 92 | 3 | 5 | 8 | 0 | 100 |
| | VN | 100 | 42 | 38 | 80 | 19 | 1 | 20 | 0 | 100 |
| | DE | 100 | 43 | 39 | 82 | 18 | 0 | 18 | 0 | 100 |
| | FR | 100 | 40 | 50 | 90 | 0 | 10 | 10 | 0 | 100 |
| | UK | 96 | 54.2 | 37.5 | 91.7 | 8.3 | 0 | 8.3 | 0 | 100 |
| | IT | 93 | 46.2 | 24.7 | 71 | 29 | 0 | 29 | 0 | 100 |
| | AT | 98 | 38.8 | 36.7 | 75.5 | 24.5 | 0 | 24.5 | 0 | 100 |
| | DK | 97 | 54.6 | 37.1 | 91.8 | 8.2 | 0 | 8.2 | 0 | 100 |
| ***By region*** | | | | | | | | | | |
| | ASIA | 596 | 66.6 | 24.2 | 90.8 | 5.9 | 3.2 | 9.1 | 0.2 | 100 |
| | EUROPE | 584 | 46.1 | 37.7 | 83.7 | 14.6 | 1.7 | 16.3 | 0 | 100 |

*Q5-6: Please evaluate the importance of drivers that motivate or facilitate eco-innovation.*

***[Table 5-6-2] Level of Importance of Drivers for Eco-innovation – Efforts to Secure or increase existing market share***

| | | Number of cases | ① Very important (%) | ② Important (%) | ①+② (%) | ③ Slightly important (%) | ④ Not at all (%) | ③+④ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 46.1 | 35.5 | 81.6 | 11.3 | 7 | 18.3 | 0.1 | 100 |
| ***By country*** | | | | | | | | | | |
| | KR | 100 | 54 | 36 | 90 | 7 | 3 | 10 | 0 | 100 |
| | CN | 96 | 49 | 36.5 | 85.4 | 10.4 | 3.1 | 13.5 | 1 | 100 |
| | JP | 99 | 47.5 | 33.3 | 80.8 | 9.1 | 10.1 | 19.2 | 0 | 100 |
| | IN | 101 | 66.3 | 20.8 | 87.1 | 0 | 12.9 | 12.9 | 0 | 100 |
| | ID | 100 | 52 | 33 | 85 | 15 | 0 | 15 | 0 | 100 |
| | VN | 100 | 47 | 37 | 84 | 15 | 1 | 16 | 0 | 100 |
| | DE | 100 | 41 | 22 | 63 | 19 | 18 | 37 | 0 | 100 |
| | FR | 100 | 40 | 40 | 80 | 10 | 10 | 20 | 0 | 100 |
| | UK | 96 | 27.1 | 54.2 | 81.3 | 14.6 | 4.2 | 18.8 | 0 | 100 |
| | IT | 93 | 36.6 | 46.2 | 82.8 | 17.2 | 0 | 17.2 | 0 | 100 |
| | AT | 98 | 37.8 | 22.4 | 60.2 | 18.4 | 21.4 | 39.8 | 0 | 100 |
| | DK | 97 | 53.6 | 46.4 | 100 | 0 | 0 | 0 | 0 | 100 |
| ***By region*** | | | | | | | | | | |
| | ASIA | 596 | 52.7 | 32.7 | 85.4 | 9.4 | 5 | 14.4 | 0.2 | 100 |
| | EUROPE | 584 | 39.4 | 38.4 | 77.7 | 13.2 | 9.1 | 22.3 | 0 | 100 |

*Q5-6: Please evaluate the importance of drivers that motivate or facilitate eco-innovation.*

***[Table 5-6-3] Level of Importance of Drivers for Eco-innovation - Will of management***

| | | Number of cases | ① Very important (%) | ② Important (%) | ①+② (%) | ③ Slightly important (%) | ④ Not at all (%) | ③+④ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 42.4 | 39.7 | 82 | 15 | 2.9 | 17.9 | 0.1 | 100 |
| ***By country*** | | | | | | | | | | |
| | KR | 100 | 42 | 46 | 88 | 9 | 3 | 12 | 0 | 100 |
| | CN | 96 | 41.7 | 44.8 | 86.5 | 9.4 | 3.1 | 12.5 | 1 | 100 |
| | JP | 99 | 53.5 | 35.4 | 88.9 | 5.1 | 6.1 | 11.1 | 0 | 100 |
| | IN | 101 | 60.4 | 30.7 | 91.1 | 0 | 8.9 | 8.9 | 0 | 100 |
| | ID | 100 | 54 | 31 | 85 | 11 | 4 | 15 | 0 | 100 |
| | VN | 100 | 65 | 32 | 97 | 2 | 1 | 3 | 0 | 100 |
| | DE | 100 | 42 | 49 | 91 | 9 | 0 | 9 | 0 | 100 |
| | FR | 100 | 33 | 48 | 81 | 19 | 0 | 19 | 0 | 100 |
| | UK | 96 | 45.8 | 18.8 | 64.6 | 29.2 | 6.3 | 35.4 | 0 | 100 |
| | IT | 93 | 26.9 | 29 | 55.9 | 44.1 | 0 | 44.1 | 0 | 100 |
| | AT | 98 | 13.3 | 72.4 | 85.7 | 12.2 | 2 | 14.3 | 0 | 100 |
| | DK | 97 | 28.9 | 38.1 | 67 | 33 | 0 | 33 | 0 | 100 |
| ***By region*** | | | | | | | | | | |
| | ASIA | 596 | 52.9 | 36.6 | 89.4 | 6 | 4.4 | 10.4 | 0.2 | 100 |
| | EUROPE | 584 | 31.7 | 42.8 | 74.5 | 24.1 | 1.4 | 25.5 | 0 | 100 |

*Q5-6: Please evaluate the importance of drivers that motivate or facilitate eco-innovation.*

***[Table 5-6-4] Level of Importance of Drivers for Eco-innovation - Subsidy or Fiscal Incentive for Eco-innovation***

| | | Number of cases | ① Very important (%) | ② Important (%) | ①+② (%) | ③ Slightly important (%) | ④ Not at all (%) | ③+④ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 25.9 | 36.2 | 62.1 | 27 | 10.7 | 37.7 | 0.2 | 100 |
| ***By country*** | | | | | | | | | | |
| | KR | 100 | 39 | 41 | 80 | 15 | 4 | 19 | 1 | 100 |
| | CN | 96 | 39.6 | 45.8 | 85.4 | 12.5 | 1 | 13.5 | 1 | 100 |
| | JP | 99 | 40.4 | 33.3 | 73.7 | 18.2 | 8.1 | 26.3 | 0 | 100 |
| | IN | 101 | 17.8 | 49.5 | 67.3 | 13.9 | 18.8 | 32.7 | 0 | 100 |
| | ID | 100 | 41 | 43 | 84 | 11 | 5 | 16 | 0 | 100 |
| | VN | 100 | 44 | 44 | 88 | 11 | 1 | 12 | 0 | 100 |
| | DE | 100 | 16 | 32 | 48 | 50 | 2 | 52 | 0 | 100 |
| | FR | 100 | 20 | 10 | 30 | 30 | 40 | 70 | 0 | 100 |
| | UK | 96 | 10.4 | 31.3 | 41.7 | 41.7 | 16.7 | 58.3 | 0 | 100 |
| | IT | 93 | 9.7 | 36.6 | 46.2 | 44.1 | 9.7 | 53.8 | 0 | 100 |
| | AT | 98 | 5.1 | 30.6 | 35.7 | 42.9 | 21.4 | 64.3 | 0 | 100 |
| | DK | 97 | 26.8 | 37.1 | 63.9 | 36.1 | 0 | 36.1 | 0 | 100 |
| ***By region*** | | | | | | | | | | |
| | ASIA | 596 | 36.9 | 42.8 | 79.7 | 13.6 | 6.4 | 20 | 0.3 | 100 |
| | EUROPE | 584 | 14.7 | 29.5 | 44.2 | 40.8 | 15.1 | 55.8 | 0 | 100 |

*Q5-6: Please evaluate the importance of drivers that motivate or facilitate eco-innovation.*

***[Table 5-6-5] Level of Importance of Drivers for Eco-innovation - Lack of Future Energy Resource***

| | | Number of cases | ① Very important (%) | ② Important (%) | ①+② (%) | ③ Slightly important (%) | ④ Not at all (%) | ③+④ (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 39 | 36 | 75 | 17.6 | 7.4 | 25 | 100 |
| ***By country*** | | | | | | | | | |
| | KR | 100 | 59 | 23 | 82 | 15 | 3 | 18 | 100 |
| | CN | 96 | 42.7 | 39.6 | 82.3 | 12.5 | 5.2 | 17.7 | 100 |
| | JP | 99 | 50.5 | 26.3 | 76.8 | 12.1 | 11.1 | 23.2 | 100 |
| | IN | 101 | 34.7 | 52.5 | 87.1 | 0 | 12.9 | 12.9 | 100 |
| | ID | 100 | 55 | 31 | 86 | 14 | 0 | 14 | 100 |
| | VN | 100 | 27 | 47 | 74 | 25 | 1 | 26 | 100 |
| | DE | 100 | 52 | 28 | 80 | 11 | 9 | 20 | 100 |
| | FR | 100 | 23 | 47 | 70 | 20 | 10 | 30 | 100 |
| | UK | 96 | 16.7 | 29.2 | 45.8 | 37.5 | 16.7 | 54.2 | 100 |
| | IT | 93 | 17.2 | 46.2 | 63.4 | 26.9 | 9.7 | 36.6 | 100 |
| | AT | 98 | 48 | 28.6 | 76.5 | 13.3 | 10.2 | 23.5 | 100 |
| | DK | 97 | 40.2 | 34 | 74.2 | 25.8 | 0 | 25.8 | 100 |
| ***By region*** | | | | | | | | | |
| | ASIA | 596 | 44.8 | 36.6 | 81.4 | 13.1 | 5.5 | 18.6 | 100 |
| | EUROPE | 584 | 33 | 35.4 | 68.5 | 22.3 | 9.2 | 31.5 | 100 |

*Q5-6: Please evaluate the importance of drivers that motivate or facilitate eco-innovation.*

***[Table 5-6-6] Level of Importance of Drivers for Eco-innovation - Expectations of a New System or Policy***

| | | Number of cases | ① Very important (%) | ② Important (%) | ①+② (%) | ③ Slightly important (%) | ④ Not at all (%) | ③+④ (%) | N/A (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 20.8 | 45.2 | 65.9 | 24.4 | 9.6 | 34 | 0.1 | 100 |
| ***By country*** | | | | | | | | | | |
| | KR | 100 | 18 | 60 | 78 | 18 | 4 | 22 | 0 | 100 |
| | CN | 96 | 31.3 | 46.9 | 78.1 | 13.5 | 7.3 | 20.8 | 1 | 100 |
| | JP | 99 | 18.2 | 54.5 | 72.7 | 11.1 | 16.2 | 27.3 | 0 | 100 |
| | IN | 101 | 16.8 | 57.4 | 74.3 | 5.9 | 19.8 | 25.7 | 0 | 100 |
| | ID | 100 | 22 | 52 | 74 | 13 | 13 | 26 | 0 | 100 |
| | VN | 100 | 11 | 60 | 71 | 29 | 0 | 29 | 0 | 100 |
| | DE | 100 | 32 | 31 | 63 | 28 | 9 | 37 | 0 | 100 |
| | FR | 100 | 30 | 30 | 60 | 30 | 10 | 40 | 0 | 100 |
| | UK | 96 | 8.3 | 37.5 | 45.8 | 37.5 | 16.7 | 54.2 | 0 | 100 |
| | IT | 93 | 7.5 | 63.4 | 71 | 19.4 | 9.7 | 29 | 0 | 100 |
| | AT | 98 | 25.5 | 29.6 | 55.1 | 35.7 | 9.2 | 44.9 | 0 | 100 |
| | DK | 97 | 27.8 | 19.6 | 47.4 | 52.6 | 0 | 52.6 | 0 | 100 |
| ***By region*** | | | | | | | | | | |
| | ASIA | 596 | 19.5 | 55.2 | 74.7 | 15.1 | 10.1 | 25.2 | 0.2 | 100 |
| | EUROPE | 584 | 22.1 | 34.9 | 57 | 33.9 | 9.1 | 43 | 0 | 100 |

*Q5-6: Please evaluate the importance of drivers that motivate or facilitate eco-innovation.*

***[Table 5-6-7] Level of Importance of Drivers for Eco-innovation - Strengthening of Eco-innovation Regulations and Standard***

| | | Number of cases | ① Very important (%) | ② Important (%) | ①+② (%) | ③ Slightly important (%) | ④ Not at all (%) | ③+④ (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|
| Total | | 1180 | 24.8 | 47.7 | 72.5 | 20.8 | 6.6 | 27.5 | 100 |
| ***By country*** | | | | | | | | | |
| | KR | 100 | 19 | 63 | 82 | 14 | 4 | 18 | 100 |
| | CN | 96 | 26 | 44.8 | 70.8 | 20.8 | 8.3 | 29.2 | 100 |
| | JP | 99 | 18.2 | 60.6 | 78.8 | 10.1 | 11.1 | 21.2 | 100 |
| | IN | 101 | 18.8 | 62.4 | 81.2 | 0 | 18.8 | 18.8 | 100 |
| | ID | 100 | 20 | 56 | 76 | 10 | 14 | 24 | 100 |
| | VN | 100 | 15 | 59 | 74 | 22 | 4 | 26 | 100 |
| | DE | 100 | 29 | 40 | 69 | 31 | 0 | 31 | 100 |
| | FR | 100 | 50 | 10 | 60 | 40 | 0 | 40 | 100 |
| | UK | 96 | 27.1 | 33.3 | 60.4 | 22.9 | 16.7 | 39.6 | 100 |
| | IT | 93 | 9.7 | 71 | 80.6 | 19.4 | 0 | 19.4 | 100 |
| | AT | 98 | 26.5 | 44.9 | 71.4 | 26.5 | 2 | 28.6 | 100 |
| | DK | 97 | 38.1 | 27.8 | 66 | 34 | 0 | 34 | 100 |
| ***By region*** | | | | | | | | | |
| | ASIA | 596 | 19.5 | 57.7 | 77.2 | 12.8 | 10.1 | 22.8 | 100 |
| | EUROPE | 584 | 30.3 | 37.5 | 67.8 | 29.1 | 3.1 | 32.2 | 100 |

*5-6: Please evaluate the importance of drivers that motivate or facilitate eco-innovation.*

# *Annex II*

# *Survey Questionnaire*

# Survey on the actual status of Eco-innovation in SMEs of ASEM member countries

The purpose of this survey is to analyze the actual state of eco-innovation of SMEs of some countries of ASEM (Asia-Europe Meeting). This survey is applied and used as reference for support task, such as collaborative eco-innovation efforts between Asia and Europe or information service on other countries' regulations and policies with related to eco-innovation for relevant authorities and SMEs

*'Eco-innovation' refers to the innovation of process and production methods, product(good or service), organization or management system that prevents or effectively reduces the environment effects across the whole life-cycle of good or service among various innovation activities for protecting or improving the environment or efficiently use of natural resources or energy.*

This survey is classified into 5 stages: 'general awareness', 'eco-innovation of process and production methods', 'eco-innovation of good and service', 'eco-innovation of organization and management system', and 'eco-innovation policy demand'.

ASEIC (ASEM SMEs Eco-Innovation Center), the organization carrying out this survey, was established in July 2011 with the principal mandate of promoting Asia-Europe cooperation to create and enhance eco-innovation of small and medium sized enterprises(SMEs) in both regions after the decision of the 2010 'the 8th ASEM Summit Meeting'. Your responses for this survey will be used as valuable data for supporting and promoting the eco-innovation of SMEs in ASEM member countries.

This survey is conducted on **managers of green management/ environmental management/ sustainability management/ business strategy/ management innovation departments in your company. Please record the actual state of your company.**

For Questions

☞ Institution implementing survey : Neoecos
☞ Institution requesting survey : ASEIC (ASEM SME Eco-Innovation Center)
☞ e-mail : soleil123@neoecos.com

## ◇ Company Outline

| | | | |
|---|---|---|---|
| **E1. Company Name** | | **E2. Location (Country)** | ☐UK ☐FR ☐DE ☐AT ☐DK ☐IT ☐CN ☐JP ☐KR ☐TH ☐IN ☐ID ☐Others |
| **E3. Respondent Name** | | **E4. Position** | |
| **E5. Contact no. (Tel. or e-mail)** | | | |

**E6. Select your industry (ISIC)**

| √ | Industry | √ | Industry |
|---|---|---|---|
| | food products and beverages | | basic metals |
| | tobacco products | | fabricated metal products, except machinery and equipment |
| | textiles | | machinery and equipment n.e.c. |
| | wearing apparel; dressing and dyeing of fur | | office, accounting and computing machinery |
| | Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear | | electrical machinery and apparatus n.e.c. |
| | wood and of wood products and cork, except furniture; manufacture of articles of straw and plaiting materials | | radio, television and communication equipment and apparatus |
| | paper and paper products | | medical, precision and optical instruments, watches and clocks |
| | Publishing, printing and reproduction of recorded media | | motor vehicles, trailers and semi-trailers |
| | coke, refined petroleum products and nuclear fuel | | other transport equipment |
| | chemicals and chemical products | | furniture; manufacturing n.e.c. |
| | rubber and plastics products | | recycling |
| | other non-metallic mineral products | | |

**E7. How many people do you have working in your company?**

(Regular employees only. Excluding temporary and contract company workers)

1) Less than 50
2) 50 ~ 250
3) More than 251

## 1. General Awareness on Eco-innovation

Q1-1. Have you heard of the term “eco-innovation” prior to this survey?
1) Yes
2) No, but I can understand the meaning by reading the term.
3) No, I do not understand the meaning of the term.

☞ What is ‘eco-innovation’?
- *‘Eco-innovation’ refers to the innovation of process and production methods, product(good or service), organization or management system that prevents or effectively reduces the environment effects across the whole life-cycle of good or service among various innovation activities for protecting or improving the environment or efficiently use of natural resources or energy.*

## 2. Eco-innovation for Process and Production Methods

Q2-1. What was the percentage of material cost in the total cost of your company in 2007 and 2010?
2007: ( ) %
2010: ( ) %

☞ If the percentage of 2010 increases that of than 2007, go to Q2-1-A.
☞ If the percentage of 2010 decreases that of than 2007, go to Q2-1-B.

Q2-1-A. If the percentage of material cost of your company increased, what is the cause for the increase?
1) Various efforts were made to reduce material cost, but percentage of material cost increased due to rapid increase in material price
2) No effort was made to reduce material cost, and percentage of material cost increased due to increase in material price
3) Increase in material cost due to new business or business conversion
4) No increase

Q2-1-B. If the percentage of material cost of your company decreased, what is the cause for the decrease?
1) Increased material efficiency through introduction of new process & production methods (PPMs)
2) Increased material efficiency through improvement of existing process & production methods (PPMs)
3) Reduced cost due to decrease in material price
4) Decrease in material use due to business conversion
5) Cost did not decrease

Q2-2. Has your company carried out the following activities to reduce material cost or energy cost during in the past 3 years?

| Application Method | YES | NO |
|---|---|---|
| 1) Promotion of new business model or business conversion | ☐ | ☐ |
| 2) Improvement of supply chain (change subcontractor or vendor, etc.) | ☐ | ☐ |
| 3) Replacing one raw material or energy source for a cheaper one | ☐ | ☐ |
| 4) Introduction or development of more efficient technology | ☐ | ☐ |
| 5) Outsourcing production activities | ☐ | ☐ |
| 6) Recycling raw material | ☐ | ☐ |
| 7) Introduction of more efficient equipment/apparatus/power-saving lighting | ☐ | ☐ |
| 8) Introduction of (building) energy management system (EMS) | ☐ | ☐ |
| 9) Improvement of insulation or air-conditioning system | ☐ | ☐ |

Q2-3. What percentage of total investment cost was used for reduction of material cost and energy cost during the past 3 years?

1) Less than 3%
2) 3% ~ 5%
3) 5% ~ 10%
4) 10% ~ 30%
5) 30% ~ 50%
6) Above 50%

Q2-4. Has your company introduced the following equipment or technology for improving environment-friendliness of manufacturing or processing in the past?

| **Application Method** | **Introduced before 2005** | **Introduced after 2006** | **Has not been introduced** |
|---|---|---|---|
| Equipment or technology to reduce discharged pollutants (air pollutant, water pollutant, etc.) | ☐ | ☐ | ☐ |
| Equipment or technology to improve energy efficiency or recover remaining heat | ☐ | ☐ | ☐ |
| Equipment or technology to reduce or recycle generated waste | ☐ | ☐ | ☐ |

## 3. Eco-innovation for Products and Services

Q3-1. Has your company taken eco-innovation actions for products and/or services since 2007?

| | Taken | Not taken and no plans | Not taken with plans to apply within the next 2 years |
|---|---|---|---|
| Introduced some type of eco-design | ☐ | ☐ | ☐ |
| Minimized or reduced the amount of product packaging | ☐ | ☐ | ☐ |
| Reduced pollutant emissions or energy use in transit | ☐ | ☐ | ☐ |
| Applied a new technology to extend product life cycle | ☐ | ☐ | ☐ |
| Applied a new technology to save energy or reduce emission in use | ☐ | ☐ | ☐ |
| Used available recycling techniques | ☐ | ☐ | ☐ |
| Introduced product servicising | ☐ | ☐ | ☐ |
| Provided certification of eco-friendly products (e.g. eco-labelling) | ☐ | ☐ | ☐ |

☞ 'Product Servicising' refers to the provision of quality, and function of products in service form to reduce environmental pollution and enhance efficiency of product use.

## 4. Eco-innovation for Organization and Management Systems

Q4-1. Does your company have a specialized organization or manager for duties related to green management or eco-innovation?

1) Operation of specialized department
2) No specialized department, but manager for carrying out relevant duties is designated
3) No specialized department, but person carrying out other duties is also in charge of relevant duties
4) No specialized department or manager

Q4-2. Does your company have experience with the following items?

| | Yes | No |
|---|---|---|
| Eco-friendly enterprise certification (ISO 14001, etc.) | ☐ | ☐ |
| Management strategy which includes eco-innovation | ☐ | ☐ |
| Publication of Environment report or Sustainability report | ☐ | ☐ |
| Supporting eco-innovation for subcontractors or vendors | ☐ | ☐ |
| Demand or support for eco-innovation by clients or customers | ☐ | ☐ |

## 5. Policy Needs for Eco-innovation

Q5-1. How does your company check information on eco-innovation regulations?

1) Notice related news by chance or from acquaintances in same industry
2) Finding related information on the internet
3) Receiving free information through newsletters of association or related institutions
4) Purchasing information through consulting or related information institutions
5) Not receiving any information about regulations

Q5-2. What is the greatest difficulty in the process of collecting information on related regulation and policy for eco-innovation?

1) Difficulty to find needed information, does not know institution that provides related information
2) Credibility of provided information
3) Must collect information from various sources as it is difficult to check information from one place
4) Burdensome cost as exclusive information is not provided for free in most cases
5) Lack of qualified personnel or capabilities to interprete and apply provided information for enterprise

Q5-3. Assuming that the following policies can be supported by the government or international organization, select the policy(s) that is most required by your company and evaluate the level of necessity for the relevant policy(s).

| Policy support | | Very high | High | Average | Low | Very low |
|---|---|---|---|---|---|---|
| Process and Production Methods | Support for green technology R&D | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Subsidies and fiscal incentives in facilities and equipment | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Support for clean production process | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Support for green technology commercialization | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Support for more appropriate green technologies | ☐ | ☐ | ☐ | ☐ | ☐ |
| Product / service | Tax incentives for purchase of eco-friendly products | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Stricter green public procurement | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Support for eco-labelling | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Support for product and service marketing (e.g. participation in overseas exhibitions) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Organization / management system | Support for certification of environment management system for enterprise | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Sharing best practice for eco-innovation | ☐ | ☐ | ☐ | ☐ | ☐ |
| | More personnel training support for eco-innovation | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Eco-innovation consulting | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Introduction of green supply chain management | ☐ | ☐ | ☐ | ☐ | ☐ |

Q5-4. For what purposes did your company introduce technology, provide improvement methods, and make efforts for eco-innovation? (Select 3 answers)

1) Improvement of company or product image
2) Compliance with environmental regulations or standards
3) Securing or increasing market share
4) Introduction of eco-friendly production methods
5) Desire to develope eco-friendly products
6) Reducing costs or achieving more efficient production
7) Government support (e.g. funding, tax favors or fiscal incentives)
8) Reduction of resources used in they production process
9) Other ( )

Q5-5. Please evaluate the level of barriers to an accelerated uptake of eco-innovation.

| Barriers | | Barrier to accelerated eco-innovation | | | | | |
|---|---|---|---|---|---|---|---|
| | | Very high | High | Average | Low | Very low | Not applicable |
| Technology | Difficulty in developing or acquiring original technology | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Difficulty in developing technologies related eco-design and PPMs | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Difficulty in assessing products and process reliability | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Fund | Lack of funds within the enterprise for eco-innovation | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Lack of external finance (e.g. venture capital or governmental support) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Personnel | Lack of R&D personnel and technological capabilities within the enterprise | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Lack of production workers | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Cooperation | Lack of cooperative partners (e.g. academic, research institutions, large companies) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Market | Uncertainty of market demand for eco-innovation | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Difficulty in finding a point of entry in market | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Regulation/ system | Difficulty in coping with regulations (e.g. environmental regulations, carbon emission / energy regulations) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Insufficient support from local or national governments | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | Insufficient infrastructure for eco-innovation | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Q5-6. Please evaluate the importance of drivers that motivate or facilitate eco-innovation.

| Drivers | Very important | Important | Slightly important | Not at all |
|---|---|---|---|---|
| Future increase in energy and raw materials prices | ☐ | ☐ | ☐ | ☐ |
| Efforts to secure or increase existing market share | ☐ | ☐ | ☐ | ☐ |
| Will of management | ☐ | ☐ | ☐ | ☐ |
| Subsidy or fiscal incentive for eco-innovation | ☐ | ☐ | ☐ | ☐ |
| Lack of future energy resource | ☐ | ☐ | ☐ | ☐ |
| Expectations of a new system or policy related to eco-innovation | ☐ | ☐ | ☐ | ☐ |
| Strengthening of eco-innovation regulations and standard | ☐ | ☐ | ☐ | ☐ |

Q5-7. Please feel free to write any suggestions or recommendations you wish to make to the government or international organization in relation to the introduction or implementation of eco-innovation.

| (Suggestions) |
| --- |
| |

※ Thank you for your participation in this survey.