



Japan: Global Warming – Emerging Market

Koji Sudo
08/2008

Summary

This report describes an emerging market segment in Japan, which will be created by Government of Japan (GOJ) initiatives over the next few years in order to cope with global warming issues and to attain promised reductions in the volume of CO₂ emissions.

Japan has promised to reduce 86 million metric tons of CO₂ emissions by the end of 2012. Considering that Japan is already one of the most energy efficient societies in the world, an additional 86 million metric tons of reduction, which is 6.8% of the total emissions of CO₂ in 2006, will require strong political will, and incentives for all elements of businesses and society. This situation will create a new, and potentially huge market for many products and services that can be supplied by U.S. companies.

The GOJ has identified that commercial establishments and residential buildings are the major segments that showed a rapid increase of energy consumption in last ten years. Therefore, GOJ has designated these market segments as priority segments for energy reduction and has started to implement measures, starting with a national work plan, revising existing laws and regulations. GOJ is also adding more incentive and subsidy programs to reinforce efforts in improving energy efficiency or shifting to low-carbon emission energy sources.

With GOJ initiatives creating a large market segment, there are opportunities for U.S. companies to profit. However, U.S. companies need to plan carefully to take advantage of GOJ measures while avoiding hidden risks of barriers to market.

Market Demand

The target volume for reduction, 86 million metric tons or 6.8 % of CO₂ emissions in 2006, is so big that the GOJ has started encouraging further efforts in reducing CO₂ emissions in all market segments by all possible means. In this sense, the market demand is for any product or service that can:

- 1) Improve energy efficiency
- 2) Shift to low-carbon energy resources
- 3) Absorb, Store or Decompose CO₂
- 4) Counter possible effects of climate change

The GOJ has particularly emphasized commercial establishments and residential buildings as priority market segments, as these were responsible for the majority increase in energy consumption over the past ten years. (Refer to Chart-1). GOJ has also identified lighting and heat related power usage such as air conditioning and hot water supply as the major energy consumption areas in the residential market segment. (Refer to Chart-2) The market demand, therefore, would be strongest for products and services that achieve higher energy efficiency and/or utilize low-carbon emission energy sources, such as photovoltaic power generation, fuel cells and heat pumps in commercial and residential buildings.

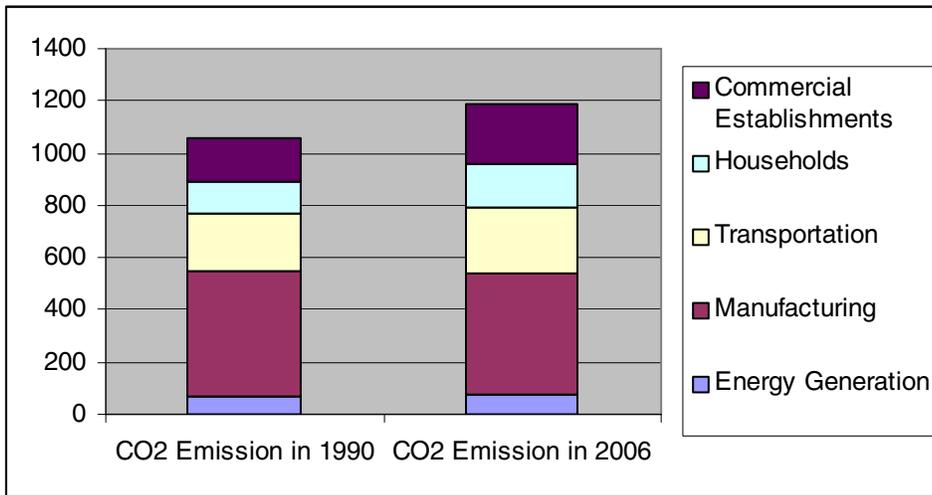
In April 2008, the GOJ provided guidance to Japanese light bulb industries to phase out production of standard light bulbs and to promote a shift to fluorescent bulbs. Even considering the longer life of fluorescent bulbs, the market for an additional 27 million fluorescent bulbs (approximately 20% of 134 million standard light bulbs currently produced annually) may be created by just this one initiative. Japanese light bulb manufacturers are planning further ahead and have started to market LED lighting fixtures for commercial establishments, which may consume only 1/7 of the electricity of standard light bulbs. This indicates the market for retrofit of lighting fixtures both for the commercial and residential markets may increase with the adoption of LED lighting.

The Ministry of Economy, Trade and Industry (METI) plans to increase the installation of photovoltaic power generation systems in the residential segment by reducing the price of systems by a half with efforts to develop higher efficiency systems, in combination with a new subsidy program. The goal is to increase the market for residential photovoltaic power generation systems by tenfold over the next several years, to four million units.

Heat pump systems are still relatively a new technology, but can reduce CO₂ emissions by a half compared to standard gas water heaters. The total number of installation is only around 1,000 systems in the residential segment. However, Tokyo Electric Power Co., Inc. (TEPCO) alone plans to increase sales to 2.5 million units over several years, again, relying on improved production cost and design, efficiency and government subsidies.

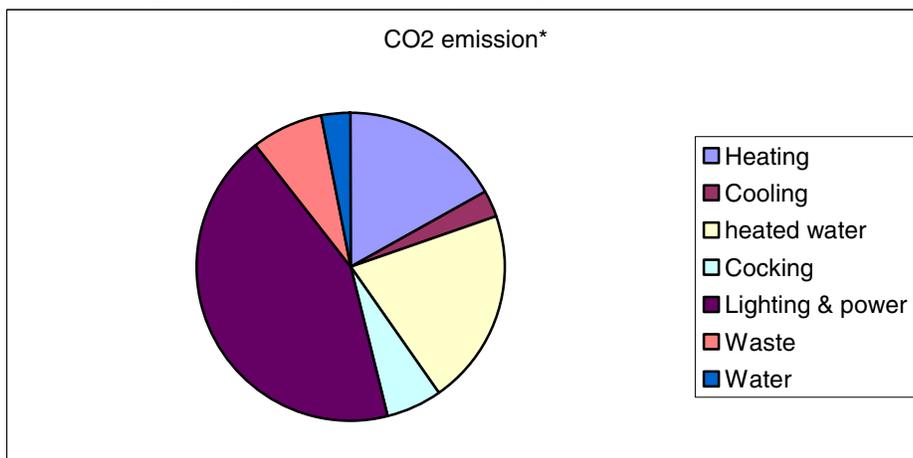
At this stage, it is too early to accurately determine the total size of the market, as the driving factor will be GOJ policy and subsidies, as well as the cost of fuel and the state of the economy.

Chart-1 CO₂ Emission by Market Segment (Unit: million ton CO₂)



Source: Greenhouse Gas Inventory Office of Japan, July 9, 2008

Chart-2 Energy Usage in Households (Unit: %)



Source: Greenhouse Gas Inventory Office of Japan, July 9, 2008

Market Data

The GOJ initiatives driving market growth will take hold over next few years; however, there is no market data currently available for these emerging market segments. The following is a list of GOJ target figures, measures and policies that may provide an idea of the potential market size and how rapidly the GOJ plans to achieve its goals- first to achieve the 6.8% emissions reduction by 2012, then a 50% reduction by 2050.

1). Photovoltaic Power Generation Systems for the residential market *¹:

Target number of new installations: Ten-fold increase by 2020, 40-fold increase by 2030.
(Total number of systems presently installed: app. 400,000 units in 2008)
Target price: Fifty percent reduction over three to five years.

2). Switching to higher efficiency lighting fixtures – to Fluorescent light bulb first and then to LED*¹:

Target date to terminate production of regular light bulbs is 2012.
Additional measures needed to promote the development of high efficiency LED lighting fixtures.

3). Home Appliances*¹:

Maintain a “Top Runner” program (similar to Energy Star in the U.S.) to keep improving the energy efficiency of home appliances.
Adding more home appliances to the “Top Runner” program.

4). Heat Pump Systems for the residential market*¹:

Target number of installations is 7.4 to 8.3 million new installations for the residential market by 2010.

5). Energy Saving Plans for commercial establishments*²

Revising the classification of the size of business to cover all commercial and industrial establishments, which consume more 3,000 kiloliters/year oil or equivalent electricity (converted to oil consumption).

Mandate the above establishments to report the energy saving plan and results.
Add small to medium contractors and large home builders for planning and reporting programs.
Promote the development of “environmentally friendly” building materials

Notes:

*¹ Source: All figures, measures and policies were cited from “Action Plan for forming Low-Carbon Society” announced by Global Warming Prevention Headquarters (The Cabinet) on July 29, 2008.

*² Source: The measures are cited from “ Law on Temporary measures to Promote Business Activities for the Rational use of Energy and the Utilization of Recycled Resources” (in short, Energy Saving Law), revised on April 1, 2006.

Best Prospects

The following products and services in commercial and residential buildings will have best prospects in the Japanese market over the next several years.

1). Low-carbon energy sources:

The finished product, parts and/or accessories including hardware and software for:
Photovoltaic power generation systems, mainly for households
Heat pump systems for households and small business establishments
Fuel Cell systems for automotive, residential and commercial establishments

2). High efficiency lighting fixtures both for the commercial and residential market:

LED lighting fixtures

3). Energy efficiency home appliances

4). Any equipment, facility, building material, construction method and service, which may provide higher energy efficiency, and/or less CO₂ emissions for commercial and residential buildings, such as:

Heat insulation materials with higher efficiency
Energy control systems for higher efficiency
Consulting services for improving energy efficiency (ESCO)
Building materials & equipments with low Carbon Foot Print
Building materials of a recyclable nature
Educational programs for an energy efficient life style

Key Suppliers

Many existing Japanese suppliers may be interested in handling advanced technology products from the U.S. Some of them may be particularly suitable for US companies.

1) Energy Service Company (ESCO):

ESCOs originated in the US but have since become established in Japan. Since ESCOs provide full service for improving energy efficiency of existing buildings, they may be well-qualified importer/distributors for the US equipment and facility manufacturers.

Japan Association of Energy Service Companies
Website (in Japanese): <http://www.jaesco.gr.jp/>

2) Large General Contractors:

For quicker introduction of products to the market it may be useful to deal directly with Japanese general contractors for commercial buildings. They usually have a special section for procurement from overseas and keep experienced English speaking staff on hand.

Japan Federation of Construction Contractors:
Website (in Japanese): <http://www.nikkenren.com/index.html>

3) Large Home Builders:

Similarly, large homebuilders may provide a considerable volume of sales for US companies.

Major homebuilder members of the Japan Federation of Housing Organization
English website: <http://www.judanren.or.jp/english/index.html>

Japan Housing Association
English website: <http://www1.newweb.ne.jp/wa/jha/contents/iysheng/index-e.htm>
Comment: This is an association of public housing organizations.

Prospective Buyers

1) Government agencies:

As the GOJ generated this market, government bodies themselves may be good prospective buyers. Both central and local governments have many office buildings and their own procurement guidelines to aggressively use energy efficient products and services. Applying for government recognition and procurement-listing programs will work well in this market segment.

2) Medium to Large Japanese companies:

The “Law on Temporary measures to Promote Business Activities for the Rational use of Energy and the Utilization of Recycled Resources” (in short Energy Saving Law) has been revised with a mandatory requirement for all medium to large Japanese companies to plan for energy saving plans and to report the results to the authorities. This will further pressure Japanese companies to improve their energy efficiency. The GOJ is presently compiling energy usage reports from the companies. The number of companies affected, though not yet determined, should be substantial.

3) Japanese companies with a strong policy or commitment to environmental conservation and CSR:

It is particularly strong for those companies that have been industry leaders in energy efficiency and actively adopting voluntary measures for the global warming issues. Checking the content of Environment White Papers easily identifies such companies.

Market Entry Strategies

1) Carefully studying GOJ initiatives and programs:

These emerging market segments will be solely created by the GOJ initiatives and measures. This may lead to creation of many mandatory requirements, performance standards, award/certification programs, incentive programs, procurement listings, subsidy programs and educational programs. A U.S. company should carefully study these programs to identify the market nature, advantages and possible market access issues.

2) Working with CS Japan at the early stages of business development:

CS Japan is will remain up to date on regulatory developments and to provide advice for U.S. companies on how they can take most advantage of incentive programs and how they can avoid the risk of market obstacles created by such programs.

3) Taking advantage of official recognition programs such as award/certification programs, procurement listing to create market exposure:

There are a few such programs currently available, including but not limited to:

Eco Mark: <http://www.ecomark.jp/english/index.html>

Top Runner program: http://www.eccj.or.jp/top_runner/index.html

Energy Star Program: http://www.eccj.or.jp/ene-star/index_esu.html

Green Procurement: http://210.254.215.73/jeita_eps/green/greenTOP-eg.html

4) Strategic Alliance with Japanese competitors:

Supplying a finished product may be the most profitable arrangement for a US company. However, in this market, it may not be always possible. That may be also true for Japanese competitors. They need to compete with other Japanese competitors to win a leading market position. If a supplemental relationship can be arranged with a Japanese competitor, it may create a strong advantage in the market and may provide a strategic alliance for world market competition.

5) Recognition of US certification programs such as LEED:

Unfortunately, LEED certification is not well recognized in Japan, but such records may be useful in persuading government authorities and potential customers in Japan.

Market Access Issues & Obstacles

Any measures and regulations and even incentive programs may become de-facto obstacles for US companies. Because of the urgency to achieve GOJ targets and the magnitude of the emerging market, it may be difficult for US companies to deal with such a complex and rapidly changing regulatory environment.

The GOJ naturally is keen to promote its own industry and Japanese domestic products and services, and standards or incentive programs may be created with domestic capabilities in mind. It is not possible to anticipate the obstacles that individual companies, products or services will face. Therefore, CS Japan strongly encourages US companies to coordinate with CS Japan when developing market entry and marketing strategies to minimize the risks of market access obstacles.

Trade Events

U.S. exporters may be interested in participating in CS Japan organized or sponsored events. Please refer to the CS Japan website for the updated list of CS Japan organized trade events.

CS Japan website: <http://www.buyusa.gov/japan/en/>

In addition, there are many commercial/public trade events relating to the global warming and energy efficiency, alternative energy sources, and green procurement. The below is a list of some of the major trade shows:

1). ENEX:

Organizer: The Energy Conservation Center, Japan

English website: <http://www.eccj.or.jp/eng/e3401enex.html>

Comment: The ENEX exhibition is one of the largest exhibitions of energy saving products and services, held in Tokyo and Osaka in alternating years.

2). Japan Home & Building Show

Organizer: Japan Management Association

English website: <http://www.jma.or.jp/JHBS/en/index.html>

Comment: The Japan Home & Building Show is the largest trade show for residential buildings in Japan. All building materials and construction methods are introduced. CS Japan usually hosts a pavilion for U.S. exporters.

3). Shiga Environment Business Exhibition

Co-organizers: the Shiga Prefectural Government and many cities in Shiga Prefecture, universities and businesses in Shiga Prefecture.

English website: <http://www.pref.shiga.jp/event/messe-e/index.html>

Comment: Shiga Prefecture is one of the leading prefectures in Japan for environmental initiatives. This show, therefore, attracts audiences particularly from the government sector from all over Japan.

If a U.S. exporter is interested in obtaining more information on a specific trade event or a different trade event for a specific topic or area, please contact CS Japan for assistance.

References & Key Contacts

Government Organizations:

Even though almost all central and local government agencies have a section for global warming issues, the agencies listed below are particularly important for the GOJ initiatives for global warming.

1). Global Warming Prevention Headquarters (The Cabinet)

Address: Office of the Assistant Chief Cabinet Secretaries, Cabinet Secretariat
1-6-1 Nagata-cho, Chiyoda-ku, Tokyo, 100-8968, Japan
Phone: 81/3/5253-2111

English Website: http://www.kantei.go.jp/foreign/policy/ondanka/index_e.html

Comment: The English Website is updated shortly after the Japanese version, so it may not provide the latest information.

The Global Warming Prevention Headquarters (GWPH) was established in 1997 to set national policy for global warming issues. This is the top decision making organization of the GOJ on the issue, headed by Prime Minister and all ministers are the members of this organization.

Their most recent action was taken on July 29, 2008 to adopt a report on “Action Plan for forming a Low-Carbon Society”, which provides short to medium term policy for GOJ measures against global warming. A summary of contents was provided in the Market Data & Market Demand sections of this report.

2). Ministry of Economy, Trade and Industries (METI)

Responsible division in METI:
Industrial Science Technology Policy and Environment Bureau
Environment Policy Division

Address: 1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8901, Japan
English website for METI: <http://www.meti.go.jp/english/index.html>
English website page on METI’s activities on Global Warming:
http://www.meti.go.jp/english/policy/energy_environment/global_warming/measures.html

Comment:

Ministry of Economy, Trade and Industries (METI) is the major Japanese central government agency, responsible for overseeing all manufacturing industries and one of the key agencies responsible for developing global warming

policy. There are many private (quasi-public) organizations under METI, which implement energy saving and global warming measures related regulations, incentive programs, and recognition/award programs. The Environment Policy Division is the key division in METI to coordinate all global warming related METI's activities.

3). Ministry of Environment (MOE)

Responsible Division in MOE:
Global Environment Bureau
Climate Change Policy Division

Address: 1-2-2 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8975
Phone: 81/3/3581-3351

English website on global warming related information in MOE: <http://www.env.go.jp/en/earth/>

Comment:

The Ministry of Environment (MOE) is the major GOJ agency responsible for overall coordination of central and local government activities relating to global warming issues and measures. MOE is also responsible for monitoring CO₂ emission/reduction records.

MOE is also responsible for the Laws relating Global Warming issues such as " Law Concerning the Promotion of Measures to Cope with Global Warming" and " Law on Temporary measures to Promote Business Activities for the Rational use of Energy and the Utilization of Recycled Resources". There are many private organizations under MOE, which are implementing energy saving and global warming measures related regulations, incentive programs, and recognition/award/education programs.

The Environment Policy Division is the key division in MOE to coordinate all global warming related MOE activities.

4). Tokyo Metropolitan Government (TMG)

Responsible Division in TMG:
Bureau of Environment

Address: NO. 2 TMG Bldg, 8 Fl., 2-8-1 Nishi-Shinjuku, Shinjuku-ku, Tokyo, 163-8001, Japan
Phone: 81/3/5321-1111

English website for C40 Secretariat office: <http://www.c40tokyo.jp/en/index.html>

English website for Global Warming related TMG initiatives:
<http://www.kankyo.metro.tokyo.jp/kouhou/english/index.html>

Comment:

The Tokyo Metropolitan Government (TMG) is the largest local government in Japan and has been active for global warming issues and measures. TMG sometimes takes initiative to implement aggressive measures on its own in global warming issues such as a plan to retrofit all traffic signals in TMG with LED lighting, and a mandatory requirement for all medium to large commercial establishments in TMG to report the CO₂ emissions and develop a work plan for reduction of CO₂ emissions. TMG is also a member of C40.

Private Organizations:

There are numerous of private organizations in Japan relating to global warming issues. The following is a short list of the major and the most important organizations for implementing major regulations, incentive programs and award/recognition programs, established by the Japanese Central Government agencies.

1). The Energy Conservation Center, Japan

Address: 3-19-9 Hachoubori, Chuo-ku, Tokyo, 104-0032
Phone: 81/3/5543-3011 Fax: 81/3/5543-3022
English Website: http://www.eccj.or.jp/index_e.html

Comment:

The Energy Conservation Center, Japan is under METI and is implementing many key programs relating to energy saving and the global warming issues and measures. Such activities include:

- (1) Energy Saving Database: Introducing energy efficient equipment, facilities and technologies
- (2) Energy consumption diagnosis program for factories and commercial establishment
- (3) Supporting Energy Service Companies (ESCO scheme)
- (4) Training and certification programs for energy inspector programs in factories and commercial establishments
- (5) Award programs for energy efficient products & services, "Shoene Taisho"
- (6) Top Runner program
- (7) Energy Saving Label program
- (8) Energy Star program
- (9) The largest trade show for Energy Saving products & Services, "ENEX"
- (10) Educational programs for consumers promoting an energy efficient life style

The Energy Conservation Center, Japan also has a very comprehensive English website for their own activities as well as related laws, regulations, incentive and award programs.

2). Japan Environment Association (Japan Center for Climate Change Actions)

Address: 1-11-9 Azabudai, Minato-ku, Tokyo, 106-0041, Japan
Phone: 81/3/5114-1251
English website: <http://www.jeas.or.jp/english/index.html>

The Japan Environment Association is a major organization under MOE for disseminating information on GOJ initiatives, particularly by MOE on the global warming issues and measures. The Japan Center for Climate Change Actions is under the Japan Environment Association, especially established for promotion of the GOJ central government initiatives for municipalities.

The Japan Environment Association has a comprehensive English website for CO₂ emissions data, government initiatives, and promotional programs under MOE such as Eco Mark and Green Procurement Network.

The Japan Center for Climate Change Actions belongs to the Japan Environment Association and is a section responsible for the promotion of measures for global warming issues to municipalities and citizens. Each prefecture has a chapter of this organization.

English website: <http://www.iccca.org/content/view/1058/620/>

For More Information

The U.S. Commercial Service in Japan can be contacted via e-mail at: koji.sudo@mail.doc.gov ;
Phone:+ 813-3224-5072; Fax: x5071 or visit our website: <http://www.buyusa.gov/japan/en/>

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