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**INDUSTRY OPPORTUNITIES:
JAPAN 2020 OLYMPICS**



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MAINE INTERNATIONAL TRADE CENTER

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I. Overview of the Economic Impact of the Olympics

Understanding the economic climate within the host city is paramount to analyzing the potential opportunities when entering an economy near an Olympic event. Japan will see smaller benefits to the GDP as a whole, meaning lower influence to consumer confidence and domestic spending, as well as the effect on tourism. What Japan has invested significantly in is green energy and clean production, as it looks to transform into a much more appealing city environmentally. Top investment opportunities in the short term will come within the **green energy sector**, although you will see short-term opportunities in the tourism and hotel sectors. Although the tourism sector seems like a no-brainer for investment opportunities, investors should be weary of the bubble effect that the Olympics have on these industries, as their investments may only pay off in the very-short term. Clean energy is a transformation that Tokyo looks to achieve over a long-term basis, and may have more reliable prospects. The cost of production and travel will decrease as green infrastructure and modes for **shipping and transportation** are being built up prior to the Games. This may present opportunities for manufacturing at a lower cost, along with ease of doing business as one looks to travel to Tokyo.¹

Based on the Tokyo Conference on Science and Technology Innovation (STI) of efforts to Task Force held in 2014, the Cabinet Office defined this month 9 areas of STI to develop in perspective of the Games. These areas include the following and represent areas of with potential for business:

- energy
- next generation urban mobility
- big data & sensors
- weather forecast
- smart hospitality
- health monitoring
- accessibility for handicapped individuals
- audio visual technology
- green and flower arrangement

Tokyo Vision 2020

Tokyo's basic plan for the Olympics is to combine legacy buildings with new facilities to house athletes and host events. Meaningful and economic post-game usage of the sporting venues and facilities as a means to renew and reinvigorate areas of the city is a major point of focus and top priority for Tokyo Organizing Committee for the Olympic Games (TOCOG). In this respect, TOCOG sees the London Games 2012 as a huge success story and wants to "copy-paste" these concepts. This has already led to a close cooperation between the Cities London and Tokyo and both governments.



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Members of the Olympic bid committee say their plan will make sure “journey times for athletes, officials, and all members of the Olympic family” are minimized, while “the experience of all those touched by the unique spirit of the Games” is maximized. Infrastructure efficiency will be improved and work will be done to get everyone in the city involved in the Games, but the plan is for these efforts to be conducted in a cost minimizing way.

Action Program 2013 for Tokyo Vision 2020 – Goals:

1. Achieve a sophisticated disaster resistant city:
 - Safety measures against earthquakes
 - Safety measures against urban-type disasters such as floods by territorial heavy rain caused by climate change
2. Create a low carbon society with a highly efficient, independent and distributed energy system
 - Construction of a high efficiency, natural gas-fired power plant with 1-million kW capacity
 - Expand independent and distributed power sources
 - Promote solar power systems for buildings owned by TMG and private households
3. Restore Tokyo surrounded by water and greenery
 - Create 1000 ha of new greenery and plant 1 million trees at roadsides
 - Redevelopment Sumida River waterfront
4. Connect land, air and sea to raise Tokyo’s international competitiveness
 - Create high-quality transportation network: Upgrade of the infrastructure of subway stations (barrier-free) and services provided by Tokyo Metro. Internationalization of the Haneda airport.
5. Put Tokyo on a new track on growth by raising industrial power
 - Foster core industries and create the best business hub of Asia
 - Increase foreign travelers/tourists
6. Build up an urban model for a society with a low birthrate and aging population
 - Increase the capacity of child daycare facilities
 - Build senior care residences, medical facilities
7. Raise globally competent individuals
 - Establish courses in metropolitan high schools to nurture leaders of the next generation, support overseas studies and training.
8. Sports society
 - Promote talents in competitive sports
 - Create a society where everyone can enjoy sports

Opportunities for Foreign Firms

Direct Opportunities

Infrastructure projects directly related to the Olympic and Paralympic Games



Indirect Opportunities

Tourism and hospitality business: refurbishing of hotels, event management, food and beverage services, etc. e.g. Redevelopment Hotel Okura

Security and safety business: stadium security, public safety and security, people flow management, etc.

IT: tourism software and applications, mobile payment solutions, stadium security, cyber security, etc

Transportation infrastructure: renewal of public transportation infrastructure and vehicles, traffic management solutions, eco-friendly transportation services, etc.

Building industry: upgrading of existing buildings, i.e. isolation, energy management, weatherproof exteriors, eco-friendly interiors, etc.²

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II. Environment, Energy, and Transportation Technology

Boeing (NYSE: BA) and Japanese aviation industry stakeholders have charted a course to develop sustainable aviation biofuel for flights during the 2020 Olympic and Paralympic Games in Tokyo, when millions of people are expected to visit Japan.

The Initiatives for Next Generation Aviation Fuels (INAF) – a consortium of 46 organizations including Boeing, ANA (All Nippon Airways), Japan Airlines, Nippon Cargo Airlines, Japan's government and the University of Tokyo – laid out a five-year "roadmap" to develop biofuel by 2020 as a way to reduce aviation's environmental footprint.

Using sustainably produced biofuel reduces lifecycle carbon dioxide emissions by 50 to 80 percent compared to conventional petroleum fuel, according to the U.S. Department of Energy.



"Boeing is proud to work with Japan's aviation sector, including customers and the Japanese government, to achieve their ambitious goals for developing sustainable aviation biofuel," said George Maffeo, president, Boeing Japan. "Building on our longstanding relationships in Japan, we are committed to help reduce aviation's carbon emissions and its reliance on fossil fuel."

INAF said the Olympics and Paralympics are "the perfect opportunity" for Japan and its airlines to showcase their environmental commitment.

"Developing and using sustainable aviation biofuel is an excellent way for Japan to show its commitment to the environment and technologies that can reduce aviation's environmental impact," said Shinji Suzuki, Professor of Aeronautics and Astronautics, University of Tokyo. "And, as the new aviation biofuel 'roadmap' indicates, Japan is ready to accelerate development and use of sustainable aviation fuels by the 2020 Olympics."⁴

Hydrogen Powered Olympic Village

Three main projects have been announced so far, and are scheduled to be completed by 2020. One project is the Olympic Village in Harumi (Chuo ward) which should be hydrogen powered: hydrogen should be distributed to support the activities of some 17,000 athletes and other guests. Residential facilities, training centres and buses should be hydrogen powered. After 2020, the Olympic Village will be converted to a high class residential area. A number of technical issues yet remain to be solved, such as affordable pipeline network construction. The Strategic Roadmap for Hydrogen and Fuel Cell also outlines the cost, stability and safety of hydrogen generation, and the integration of hydrogen in the energy mix alongside RE, as serious challenges.

Fuel Cell Vehicle Deployment

The second major project launched in Tokyo has broader targets: the deployment of 6,000 fuel cell vehicles (FCV) and 35 stations by 2020 in a ¥45.2 billion (about \$360 million) plan. Since January 2015, subsidies from the national and local governments are available so that the FCV costs ¥4.2 million (almost \$34,000) to the buyer. As the first carmaker to commercialise a FCV with the launch of its Mirai in December 2014, Toyota Motor Co. benefits directly from this initiative. Toyota is represented in all three sub-committees of the Tokyo 2020 Committee, and the long term close ties between the TMG and Toyota Motor Co. are making the latter a champion of the hydrogen cause. Competition will gradually grow on that section, as Honda and Nissan Motor Co. plan to release their own FCV respectively this year and in 2017. Tokyo Gas and JX Nippon Oil & Energy are the two main competitors present on the market for the hydrogen supply of the stations, as Tokyo Gas launched the first hydrogen filling station at the same time the Mirai was released and JX Nippon Oil & Energy became a Gold Partner of the Tokyo 2020 Committee in March 2015.



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Hydrogen use will also be promoted in Saitama prefecture with the deployment of 60,000 FCVs by 2025, with a subsidy of one million JPY per vehicle.

Residential Fuel Cell Generated Energy

The third hydrogen based initiative is the hydrogen fuel cell production of electricity in the residential sector. The goal is to equip 150,000 new houses by 2020, in order to reach a generation capacity of 100 MW, and to have one million new apartment blocks provided by hydrogen FC, amounting to a 700 MW capacity in Tokyo. The use of FC generated electricity in the commercial and industrial sectors will be introduced by 2017. The main fuel cell generation system in Japan is the Ene-farm (“energy farm”, see glossary).

Waste Management

Japan is already in advance in terms of management. For instance Tokyo has been doing remarkably well in reducing waste production (Fujita and Hill, 2007). The Olympics require further organisation, especially because of the massive flow of tourists in public areas, and because some points of the current system need to be upgraded, such as the communication about waste sorting. Nonetheless, the waste management is a sector with a good market potential for European SMEs, as Tokyo and Japan in general have a keen interest in better solutions to deal with waste in a limited land area.⁵

III. Tourism and Hospitality Industry

Tourism

The contribution of tourism and its related business to GDP is lower in Japan than the world average (industry contribution to GDP worldwide is 9.1% avg. and only 4.7% in Japan). Tourism, leisure and foods & beverage sectors will benefit through mediums such as the internet and media because of the Games. Japan is likely to see the proliferations of this in the medium and long term, as well as domestic demand as money is circulated throughout the countrywide economy.⁶

Smart Hospitality

Smartphone applications for translation, geolocalisation, information access and any other devices (such as translatable menus on tablets to order in restaurants) to facilitate the stay of foreigners in Tokyo are high in demand as improving the friendliness of the city to non-Japanese is a priority of the TMG in perspective of 2020.⁷

Demand-Side Benefits

- Attracts visitors from within the host country and around the globe, ranging from participants, spectators, sponsors and the media



- The promotion of the city creates an induced tourism effect as further visitors are attracted by the city's additional media exposure and enhanced international reputation
 - Tourism sustains throughout the process, and well after the games
- The tourists bring additional demand to the regional and national economy. Visitors spend money on food, accommodation, transport and tickets
 - This causes a secondary effect as the new money is respent within the borders of the host economy. Additional games-related employment and purchasing by local companies as well as the impact of everyday household spending by employees creates a multiplier effect⁸

IV. Tech Industry

Pushed by a desire to showcase their expertise to the world, some of the country's biggest companies are now targeting 2020 for the deployment of new technologies that could revolutionize mobile telecommunications, consumer electronics, automobiles and even the way people watch the Olympic Games on television.

In a series of presentations at the Ceatec 2013 electronics expo in Japan, companies outlined their plans for cell phones that transmit data 100 times faster than today, TV pictures with 16 times as much detail as current high-definition and cars that drive themselves.

While TV makers are currently promoting "4K" or "Ultra HD" sets, which offer four times the level of detail of current HDTVs, Japan's national public broadcaster NHK (Nippon Hoso Kyokai) is close to beginning trial service of a system with 16 times the level of detail. Called "Super Hi-Vision" or "8K," the technology has been under development for years and test transmissions are due to begin in 2016.

By 2020, NHK hopes it will be able to cover the Olympic Games using the new system. Super Hi-Vision already received a limited trial at the 2012 London Olympics, where NHK and the BBC produced several hours of programming per day and beamed it to public viewing sites in each country, so the chances are good that NHK will meet its plan.⁹

Cyber security

The mega-event requires massive preparation and with the quantity of online information is increasing with each Olympic and Paralympic Games, with online sales, online results, and maybe online competition watching by 2020. Such data requires top notch protection.

Big Data and Sensing

Big data, in other words centralising data from multiple sources and processing it, can contribute to identify patterns, define problems, and making decisions. For example, traffic can be better regulated



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thanks to large data gathering about real time congestion level by street and preferred and alternative GPS routes. In case of earthquake, it can also be useful to map the damage in terms of building and transportation networks, to access information about the evacuation routes and zones, the weather forecast, and the remaining available RE sources, and so on.

Such information is extremely valuable for metropolis as large as Tokyo where data is massive, because of the population figures and the number of sources. Sensors are key in gathering data. Structures and infrastructure need to be maintained and sensors can be used to make the maintenance more efficient, for instance to detect where defects in roads are by measuring the vibrations made by vehicles with sensors.

Connectivity

There are two existing projects funded by the EU and Japan, which are related to Tokyo or the 2020 Olympic and Paralympic Games: ClouT and the 1 gigabit Olympics initiative. Inaugurated in 2013, the ClouT is a joint research initiative aiming at empowering citizens through a collaborative communication platform. It involves industries, research centres, universities and municipalities from Japan and three EU Member States: Italy, Spain and France. The 1 Gigabit Olympic project goal is to deliver 1 gigabit connection during the 2020 Games. It was launched in November 2014.¹⁰

V. Infrastructure

In 2020, Tokyo will host the Summer Olympics for the second time in history; the first time was in 1964, when massive infrastructure investment in bullet trains, highways and ports helped underpin Japan's "economic miracle." To a large extent, the infrastructure from back then still exists today however, it is aging and deteriorating. A White Paper published by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), in June 2014 says Japan's capital is lagging rapidly emerging Asian cities in terms of convenience for businesspersons and other global players. The paper concludes that action is necessary if Tokyo is to remain at all attractive for the long haul. Among the action items it mentioned are: leveraging the 2020 Tokyo Olympics, developing infrastructure, taking precautionary measures against the possibility of strong earthquakes and doing something about the city's aging buildings. Against this backdrop, the government hopes that Tokyo 2020 will act as a trigger for a new wave of infrastructure investment.

Old venues such as the Olympic Stadium will be rebuilt at the heart of a Heritage Zone, where most of the sporting events for the 1964 Olympics were held. This mostly developed area surrounding the Imperial Palace includes venues already completed; most of the expenses will involve day-to-day running of events and refurbishments. Ten new facilities will be built in the Tokyo Bay Zone, an area centered on the reclaimed land of Odaiba that will include temporary facilities and a new venue for



swimming competitions. The Olympic Village will be in the nearby Harumi area of Tokyo Bay between the two Olympic zones.

To reinforce transportation efficiency, airport, rail, and port infrastructure will be bolstered. 20 km of major urban arterial routes will be widened, one train station will be expanded and approximately 28 km of new motorways and major urban arterial routes will be constructed. The cost of the improvements is estimated at USD 5 – 6 billion. However, the continuous upgrading of infrastructure is part of Tokyo's governmental urban development plans and to be done regardless of the Olympics. There are no plans to finance any additional major transport infrastructure specifically for the 2020 Games. Because of the present scale of Tokyo's transport system and the improvements already planned under "Tokyo Vision 2020", the emphasis will be on specific Games arrangements and improvements to existing infrastructure.¹¹

Sustainable construction In consideration of the upcoming construction and urban redevelopment projects, there are business opportunities in the sustainable construction sector. For Olympic venues, it is conducted by the TMG's Bureau of Tokyo 2020 Olympic Games Preparation. The Bureau is in charge of organising the bids in accordance with WTO's agreement on government procurement, in cooperation with the TMG's Bureau of Urban Development and the Tokyo 2020 Committee.

There are also opportunities for sustainable construction for projects indirectly related to the 2020 Games. The bids are accessible on <http://www.e-procurement.metro.tokyo.jp/indexPbi.jsp> (in Japanese). The Japan Tax and Public Procurement Helpdesk is translating tenders (related or not to the Games), and national Embassies located in Tokyo can also provide some information. While many programmes have targeted the industrial sector and achieved better energy efficiency, fewer initiatives are successful in regards to the commercial and residential sectors. The TMG has launched a number of measures in those two sectors, but several interviewees of foreign companies located in Japan have agreed to say that there is a significant margin for progress yet, thus offering business opportunities in that field.

Since the Great East Japan Earthquake in 2011, there has been a surge in the offer of Business Continuation Plans (BCP), a new key comparative advantage for securing construction contracts. BCPs are emergency schemes of energy supply and consumption, which ensure a minimal energy supply for office and commercial buildings in case of electricity shortage, for businesses to be able to carry out basic activities. Storage batteries and cogeneration systems are the main technologies used in such plans.¹²



Supply-Side Benefits

- Financing construction projects is costly, but the host city benefits in the longer term from the additional infrastructure
- Productivity might be raised from the improved transport facilities for handling passengers and freight
- The creation or enhancement of sports facilities increases the city's ability to host other major national and/or international sporting events
 - Also provides for residents to participate and can generally make the city a more attractive place to live
- The infrastructure can also assist in regenerating rundown areas
- The impact of these factors is often hard to gauge, but a consideration for host cities
- Advanced countries, such as the US and Australia, see little economic impact from the Olympic Games
 - Countries in need of an industrial transition see the greatest benefit from holding the games (Japan and Korea). The boosted growth rate of GDP made Japan an advanced country and Korea a newly industrialized country. Many countries need to be weary of the debt they may incur from the Olympics, as seen in Greece's case¹³

VI. Health Industry

Health Monitoring

With an ageing population, severe weather conditions and poorly insulated buildings, remote health monitoring is a key sector in Japan. It can also be applied to check on athletes. A major sector of health monitoring is related to elderly care and the use of ICT to facilitate remote health supervision as well as the daily life of this growing part of the Japanese population. In May 2015, IBM, Apple and Japan Post (a major insurance and bank holding company in Japan) signed an agreement to 'improve elderly care'. In addition to these sectors, this report identified the following businesses with market potential in the smart city sector in perspective of 2020: sustainable construction, waste management, cyber security and urban consulting.¹⁴

VII. Landing a Bid

Although the Japanese-only procurement process poses a significant entry barrier for foreign firms, several factors could help to successfully land a bid:

- Entering a partnership with a Japanese company would significantly increase the chances of smooth sailing through the Japanese procurement process. Because regulations require staff to be present in Japan to clear all the requirements for participating in the tender process, access to Japanese speaking staff seems nearly essential for successful participation

- As the Games are to a large extent a prestige project, companies that are market leaders in their sector or product(s) or have recent experience with executing projects for the Olympics or other large sport events, would have a clear advantage.¹⁵

VIII. Conclusion: 2020 Tokyo Olympics

	Direct impact	Incidental impact
Before the Games	<ul style="list-style-type: none"> ▼ Rise of construction investment (games facilities, Olympic village, etc.) ▼ Rise of consumption expenditures (related goods, household electrical appliances, etc.) 	<ul style="list-style-type: none"> ▼ Rise of stock and land prices and the accompanying wealth effect ▼ Increase in the number of foreign tourists and international events such as conferences <ul style="list-style-type: none"> • Synergy effect created by an improved image and by promotional and other measures ▼ Acceleration in urban infrastructure improvements, revitalization of private-sector investment <ul style="list-style-type: none"> • Acceleration of public infrastructure improvements (earthquake resistance, barrier-free structures, transportation infrastructure, etc.) • Reactivation of renovation investments by private-sector entities such as hotels and retail concerns
During the Games	<ul style="list-style-type: none"> ▼ Games-related expenses (operating expenses, IT systems, etc.) ▼ Spending by spectators (accommodations, travel, transportation, meals, etc.) <ul style="list-style-type: none"> • Spending by foreign tourists (spectators) • Spending by domestic tourists (spectators) ▼ Consumer spending (Olympic-related goods, household electrical appliances, etc.) 	<ul style="list-style-type: none"> ▼ More tourists visiting regional areas <ul style="list-style-type: none"> • Promotion of regional tourism by attracting foreign Olympic spectators ▼ Increase in sports-related spending <ul style="list-style-type: none"> • Increased spending inspired by Olympic athletes
After the Games	<ul style="list-style-type: none"> ▼ Effective use of the Games facilities (such as for parks) ▼ Redevelopment of the Games sites 	<ul style="list-style-type: none"> ▼ Upward trend in the number of foreign tourists <ul style="list-style-type: none"> • Improved image due to success of Olympic Games ▼ Improved competitiveness and productivity of urban areas <ul style="list-style-type: none"> • The benefits of improved infrastructure and revitalized private-sector investments ▼ Increase in sports-related spending <ul style="list-style-type: none"> • Increased spending inspired by Olympic athletes

Source: [Mizuho Research Institute](#)

- There is an estimated economic impact of \$29.7B over several years because of the 2020 Games, along with an estimated 150K created jobs
- The economic impact appears large, but truly only accounts for about 0.1% of the Japanese GDP annually¹⁶

¹ [The Independent, UK](#)

² http://www.s-ge.com/de/filefield-private/files/167599/field_blog_public_files/64649

³ http://www.eu-japan.eu/sites/eu-japan.eu/files/Smart2020Tokyo_Final.pdf

⁴ <http://www.prnewswire.com/news-releases/boeing-japanese-aviation-industry-unveil-biofuel-roadmap-to-2020-olympics-300110743.html>

⁵ http://www.eu-japan.eu/sites/eu-japan.eu/files/Smart2020Tokyo_Final.pdf

⁶ [Sumitomo Mitsui Trust Group](#)

⁷ http://www.eu-japan.eu/sites/eu-japan.eu/files/Smart2020Tokyo_Final.pdf

⁸ [The Economic Impact of the Olympic Games](#)



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- ⁹ <http://www.techhive.com/article/2051900/why-japans-2020-olympics-will-revolutionize-tech.html>
- ¹⁰ http://www.eu-japan.eu/sites/eu-japan.eu/files/Smart2020Tokyo_Final.pdf
- ¹¹ http://www.s-ge.com/de/filefield-private/files/167599/field_blog_public_files/64649
- ¹² http://www.eu-japan.eu/sites/eu-japan.eu/files/Smart2020Tokyo_Final.pdf
- ¹³ [The Economic Impact of the Olympic Games](#)
- ¹⁴ http://www.eu-japan.eu/sites/eu-japan.eu/files/Smart2020Tokyo_Final.pdf
- ¹⁵ http://www.s-ge.com/de/filefield-private/files/167599/field_blog_public_files/64649
- ¹⁶ [International Business Times](#)