MARKET OPPORTUNITY

Japan

OVERVIEW

- Japan ranks 9th in the World Global Competitiveness Report 2017-2018.
- Renewable energy capacity in Japan is heavily concentrated in large-scale PV. Wind, biomass, geothermal and small/medium-scale hydropower are also part of the mix.
- Expect higher investment in research and development in renewable energies as well as financial incentives to support the introduction of energy conservation equipment. Japan aims to reduce greenhouse gas emissions by 26% by 2030, and by 80% by 2050 (compared to 2013).

€ 31.7 billion
invested in small equipment - below 1MW

€ 33.5 billion
invested in renewable energy (2015)

Top Business Opportunities for EU Companies

1. **Offering cost-reduction technologies and products related to self-sustaining power generation facilities:** solar-related technologies (maintenance of high-efficiency power generation, recycling) ; wind power (long-term stable power generation); technology related to biomass power generation; next generation power generation (marine power etc.).
2. **Partnerships with Japanese companies for Zero Energy Building (ZEB) technologies:** cost-efficient energy-saving equipment; cogeneration (engine, turbine, fuel cell); 50 - 80 ℃ hot water utilization technology; energy saving retrofitting technologies.
3. **Collaboration with local companies on Zero Energy House (ZEH) technologies:** Home Energy Management Systems, smart meters, home solar power systems, electric vehicles, plug-in hybrid charge/discharge devices.
4. **High efficiency lighting:** the Japan government aims to replace 100% of lights with highly efficient lights including LED and organic EL lighting on a flow basis by 2020, and on a stock basis by 2030.
5. **Renovation of aging thermal power plants** to improve efficiency, heightening efficiency in logistics (ship, aviation, rail, truck, transportation systems) also present opportunities for greening the energy sector.

Market Characteristics

- **Applications using the feed-in-tariff system** total 88GW output (approximately 91% solar, 3% wind, 3% biomass, and 1% of small to medium hydropower), 36% of which is already operational. Due to issues in the power grid, restrictions are placed on connections with renewable energy with large output fluctuations
- To meet GHG emission reduction targets, **subsidies totalling over €1 billion annually are available** to promote net Zero Energy Building (ZEB) and Zero Energy House (ZEH) through retrofitting and energy conservation measures.
- Mandatory energy-efficient standards are set for various products under the **'Top Runner Approach'** which aims to develop the world's most energy-efficient products.
- **National targets set for equipment installation:**
  - Household fuel cells: 1.4m units by 2020, 5.3m units by 2030
  - LED, etc.: 760m units by 2020, 420m units by 2030
  - Co-generation: 11.34 GW by 2020, 13.2 GW by 2030

Sources:
Ministry of Economy, Trade and Industry, Japan
UNEP, Global Trends in Renewable Energy Investment

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Drivers

- EU-Japan Economic Partnership Agreement sets more favourable conditions for European businesses
- Residential power market opens up, driving demand for renewables
- Japan is the world's 4th largest PV market
- Feed-in-tariff system under review to reduce FIT; possible shift to a bidding system to promote market competition

Barriers

- Japan's cultural uniqueness such as language, business customs and local practices
- Compliance requirements for a multitude of Japanese regulations, including for environment and safety
- Shrinking domestic market will intensify competition

Market Map

Sector	Sub-sector	Needs		
Manufacturing	Renewable Energy NEC NECファシリティーズ CORONA TOYOTA CanadianSolar	**<Solar power>** ・Maintenance ・High quality construction technology ・Power generation forecast, construction evaluation **<Wind power>** Power generation equipment with high ROI	**<Biomass Power>** ・Cost-effective biomass power generating equipment ・Biomass generated fuel ・Biomass fuel procurement technology (e.g. forest management) ・New technologies (e.g. fermented methane power generation)	**<Geothermal Power>** Cost effective low-temperature difference power generation system **<Other Power>** Next generation power generation technology **<Others>** Clean energy utilisation technology
	Highly efficient machines 東京都市サービス株式会社	・Cost-effective, energy-saving equipment ・Unique green equipment, e.g. co-generation solutions ・Technologies for utilising waste hot water; middle (40℃-60℃) to high temperatures（60℃-80℃）		
	Measuring equipment azbil	Ultrasonic flow meter, etc.		
Operation	Highly efficient machines MIURA	Energy saving solutions for buildings		
	Measuring equipment MITSUBISHI	・Cost-effective and high accuracy measuring equipment ・High usage measuring technology, e.g. ultrasonic flowmeters ・Measure and control equipment linked to energy savings; high demand for equipment that can be controlled automatically		
Household	Electricity and gas supply OSAKI	Electricity deregulation; opportunity to choose green energy, sales opportunities (such as smart metres, etc)		
	Highly efficient machines ミツウロコグリーンエネルギー	Slow but increasing demand for biomass utilisation such as by using wood stove and products using natural energy		
	Measuring equipment Panasonic Homes & Living	Expanded use of HEMS (Home Energy Management System), BEMS (Building Energy Management System), and Demand Response (solutions resulting in economic merit, e.g. by suppressing the amount of electricity used during daytime with a high load time period) are encouraged and also incorporated in government planning		