

# JAPAN

## EMPLOYMENT AND ENVIRONMENTAL SUSTAINABILITY FACT SHEETS 2017

The *Employment and Environmental Sustainability Fact Sheets* series provides key features of employment and environmental sustainability performance. Jobs that are green and decent are central to sustainable development and resource productivity. They respond to the global challenges of environmental protection, economic development and social inclusion. Such jobs create decent employment opportunities, enhance resource efficiency and build low-carbon, sustainable societies. The fact sheets include the most recent available data for selected indicators<sup>1</sup> on employment and environmental sustainability: (i) employment in environmental sectors; (ii) skill levels; (iii) vulnerability of jobs; (iv) jobs in renewable energy; and (v) scoring on the Environmental Performance Index.

Figure 1. Map of Japan



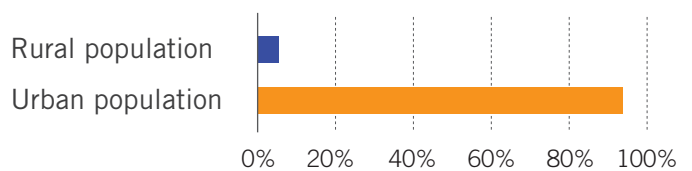
Japan<sup>2</sup> is a mountainous country in East Asia and comprising four major islands and many smaller ones (Fig. 1). Its population is mostly urban, with a fertility rate of 1.5 children and life expectancy at 83.8 years. Around 60 per cent of the population is of legal working age (15–64 years). With 27 per cent of its population older than 65 years and a negative population growth rate, Japan is facing issues related to its ageing population (Fig. 2).

Figure 2. Demographics for Japan

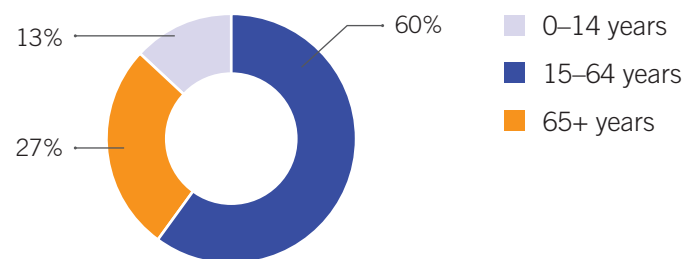
Population: 127 million



Population growth rate	Fertility rate	Life expectancy at birth
-0.1%	1.5 children	83.8 years



Population age categories



Note: All data for 2016, except fertility and life expectancy, which are 2015.

Source: ILO compilation using World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org> (accessed 30 July 2017).

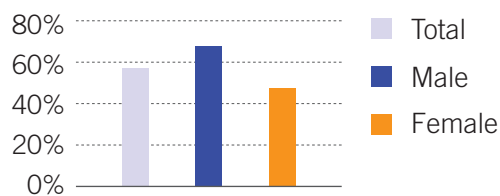
1. The fact sheet is based on available data only.

2. Japan was a member of the International Labour Organization from 1919 to 1940 and re-joined in 1951.

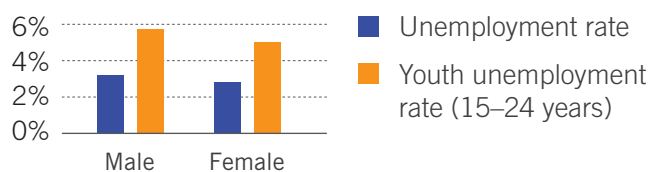
As of 2017, the labour force participation rate is 58.9 per cent and the employment-to-population ratio is 57.2 per cent. Both of those rates are more than 20 percentage points higher for men than for women. The total unemployment rate is 3 per cent, and the youth unemployment rate is 5.3 per cent, with the female youth rate 0.7 percentage points higher than the male rate (Fig. 3). The youth (aged 15–24 years) not in employment, education or training rate was 3.6 per cent in 2015. Formal employment is heavily reliant on services<sup>3</sup> and on medium-skilled occupations, although more than 25 per cent of the labour force is employed in highly skilled occupations (Fig. 3).

**Figure 3. Basic employment statistics for Japan, 2017**

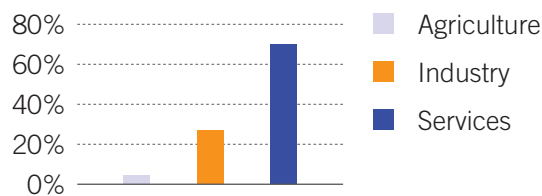
#### Employment-to-population ratio (15+ years)



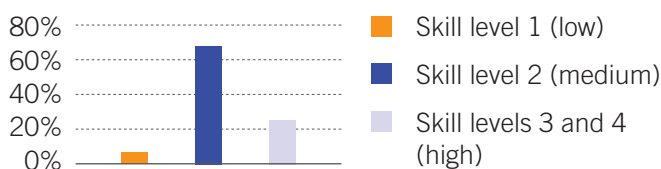
#### Unemployment



#### Employment by sector (15+ years)



#### Employment by occupation

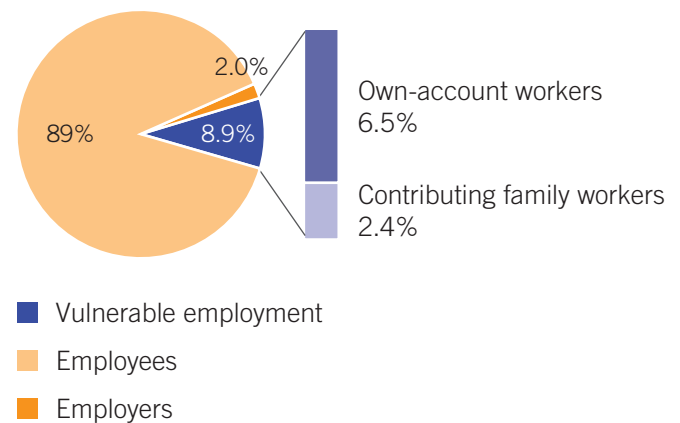


Note: ILO estimates. Labour force participation rate and unemployment: aged 15 years and older. Youth unemployment: aged 15–24 years. Employment by occupation: skill level 1 (low) for elementary occupations; skill level 2 (medium) for clerical, service and sales workers, skilled agricultural and trade workers, plant machinists and assemblers; and skill level 3 and 4 (high) for managers, professionals and technicians.

Source: ILO compilation using ILOSTAT, <http://www.ilo.org/ilostat> (accessed 17 July 2017).

Vulnerable employment in Japan accounts for 8.9 per cent of the labour force, with the majority of those workers having own-account status (Fig. 4). Own-account and contributing family workers are more likely to experience low job and income security than employees and employers, as well as lower coverage by social protection systems and employment regulation.

**Figure 4. Vulnerable employment, by status, 2017**



Note: Vulnerable employment includes own-account workers and contributing family workers.

Source: ILO compilation using ILOSTAT, <http://www.ilo.org/ilostat> (accessed 17 July 2017).

According to the *World Risk Report*,<sup>4</sup> Japan has a very high World Risk Index score. It ranks 17 (out of 171 countries) because of its high exposure to natural hazards, despite the country having very low vulnerability due to its coping and adaptive capacity. Part of the country's vulnerability is due to the 12.6 per cent of the total population who lived in the 3.4 per cent of total land area below 5 meters above sea level as of 2010.<sup>5</sup> According to the Emergency Events Database,<sup>6</sup> there has been an increase in natural disasters<sup>7</sup> and associated damage costs since the 1940s (Fig. 5). The natural disasters in that time were mostly tropical cyclones, storms, floods, droughts and a few heat waves, which resulted in more than 36,200 deaths. Further developing preventive measures to limit infrastructure and property damage and increase institutional capacity, particularly for small businesses to respond to climate events, can be a source of decent job creation while building resilience.

3. Informal employment (self-employed and contributing family members) is excluded from the agriculture calculations.

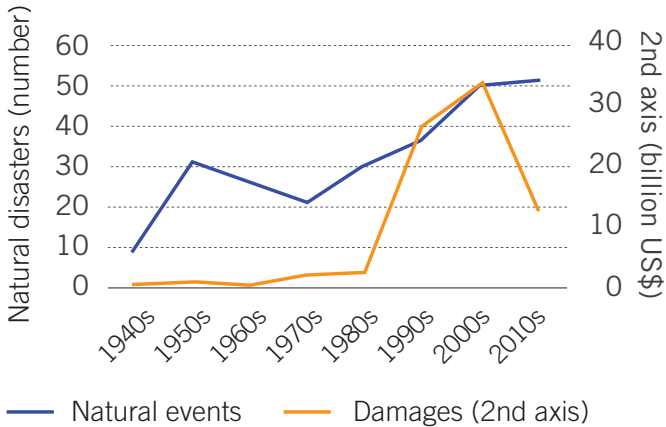
4. Bündnis Entwicklung Hilft and United Nations University: *World risk report 2016* (Berlin, 2016), <http://weltrisikobericht.de/english/>.

5. World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org/> (accessed 30 July 2017).

6. EM-DAT: The Emergency Events Database – Université catholique de Louvain (UCL) – CRED, D. Guha-Sapir – [www.emdat.be](http://www.emdat.be), Brussels, Belgium.

7. Climatological, hydrological and meteorological disasters.

**Figure 5. Natural disaster occurrence and damage costs in Japan, 1940s–2010s**

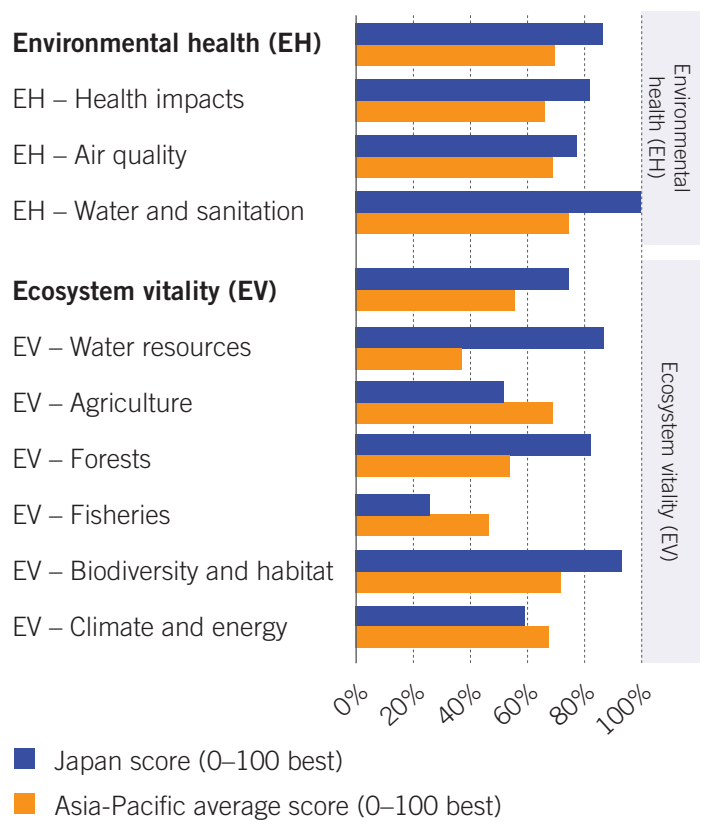


Note: Natural events include climatological, hydrological and meteorological disasters. 2010s data are only for the first half of the decade.

Source: ILO compilation using EM-DAT: The Emergency Events Database – Université catholique de Louvain (UCL) – CRED, D. Guha-Sapir – www.emdat.be, Brussels, Belgium.

Japan ranks 39<sup>th</sup> out of 180 countries in the Environmental Performance Index (EPI), with a score of 80.6 (with 0 being furthest from the high-performance benchmark target of 100). The country outperforms the average scores for Asia and the Pacific in a majority of the EPI categories (Fig. 6). Still, there is room for improvement, especially in ecosystem vitality (in agriculture, fisheries and climate and energy). Action to improve environmental health, ecosystem vitality, climate change and resilience to weather disasters all have the potential to provide job creation, green economy growth and innovation in the country.

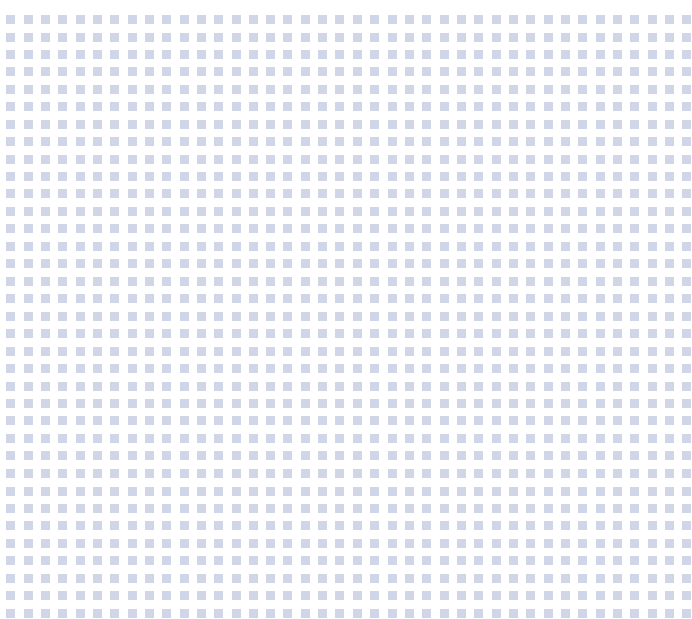
**Figure 6. Environmental Performance Index 2016 for Japan**



Note: Score 0–100 best. Asia-Pacific: Each score is an average of all data for ILO member States in the region, excluding four countries with no data (Cook Islands, Marshall Islands, Palau and Tuvalu).

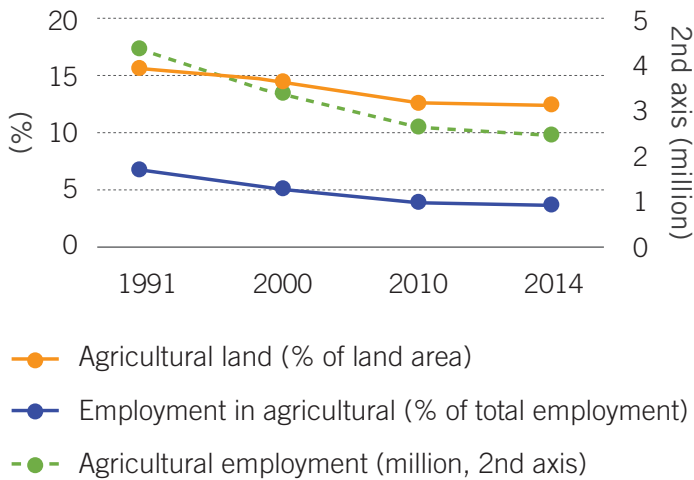
Source: ILO compilation using, A. Hsu et al.: 2016 *Environmental Performance Index* (New Haven, CT, Yale University, 2016), www.epiyale.edu.

Rural population growth was a negative 7.2 per cent in 2015. The share of agricultural land in total land area decreased between 1991 and 2014, while agricultural employment dropped from 4.35 million to 2.45 million people. The share of agricultural employment in total employment fell by approximately 3 percentage points due to the combination of declining agricultural employment and job creation in other sectors (Fig. 7). The share of forest area remained stable between 1990 and 2014, at approximately 68.6 per cent of total land area. During that same time, terrestrial protected area increased slightly, to 19.4 per cent, while the share of marine protected area was stable at about 5 per cent of total territorial waters (Fig. 8). In 2016, 3.5 per cent of employment was in the agriculture, forestry and fishing sector (Fig. 9). Although reliance on agriculture is small, there are opportunities for job creation for sustainable production and organic farming. There will be greater prospects for employment opportunities with continued



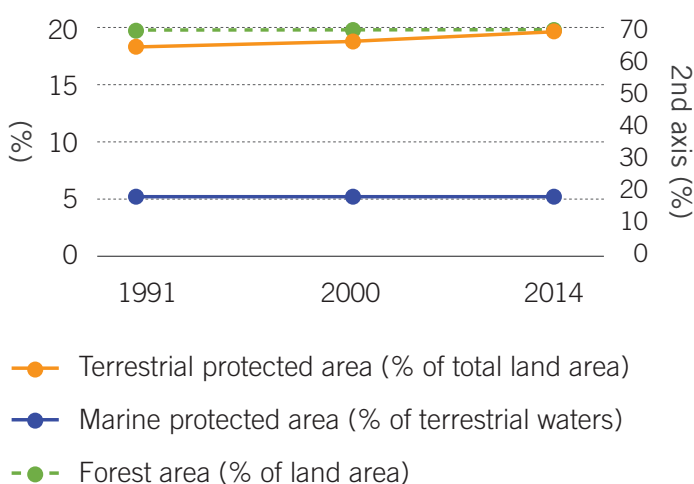
commitment to transition to a low-carbon and resource-efficient economy, such as jobs in resource management and environmental services.<sup>8</sup>

**Figure 7. Agricultural land and agricultural employment, 1991–2014**



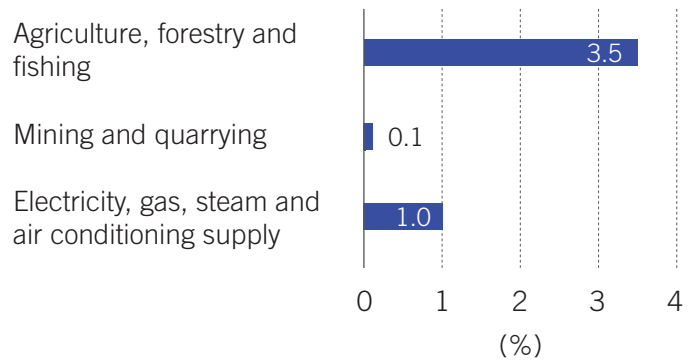
Source: ILO compilation using World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org/>; ILOSTAT, <http://www.ilo.org/ilostat> (accessed 30 July 2017).

**Figure 8. Forest area and terrestrial and marine protected areas, 1990–2014**



Source: ILO compilation using World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org/> (accessed 30 July 2017).

**Figure 9. Employment in sectors with strong green jobs potential, 2016**

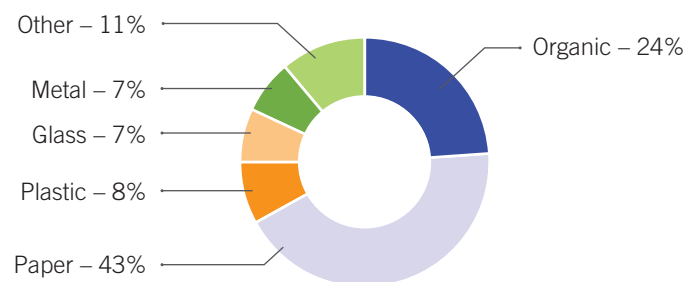


Note: These sectors have the most potential for green job opportunities. Employment by selected 1-digit sector level (ISIC-Rev. 4, 2008). The electricity, gas, steam and air conditioning supply category also includes water supply, sewage, waste management and remediation activities.

Source: ILO compilation using ILOSTAT, <http://www.ilo.org/ilostat> (accessed 16 November 2017).

All Japanese households have access to improved water supply and sanitation.<sup>9</sup> According to the World Bank and based on the most recent available data,<sup>10</sup> municipal solid waste generation was 1.71 kg per capita per day in 2005 and is expected to remain at that rate to 2025.<sup>11</sup> In 2003, all waste was collected, with most of it disposed in waste-to-energy incineration facilities (at 74 per cent), while 17 per cent was recycled and only 3 per cent went to landfill. Most of the waste in 2008 was paper (at 43 per cent), followed by organics (at 24 per cent) and other<sup>12</sup> (Fig. 10).<sup>13</sup> There is potential for further job creation in recycling and composting.

**Figure 10. Waste composition, 2008**



Source: ILO compilation using World Bank: *What a waste: A global review of solid waste management* (Washington, DC, 2012).

8. Institute for Labor Studies and Ministry of Human Resources and Social Security: *Green employment in China* (Beijing, ILO, 2010), [http://www.ilo.org/beijing/what-we-do/publications/WCMS\\_155395/lang--es/index.htm](http://www.ilo.org/beijing/what-we-do/publications/WCMS_155395/lang--es/index.htm).

9. World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org/>.

10. World Bank: *What a waste: A global review of solid waste management* (Washington, DC, 2012).

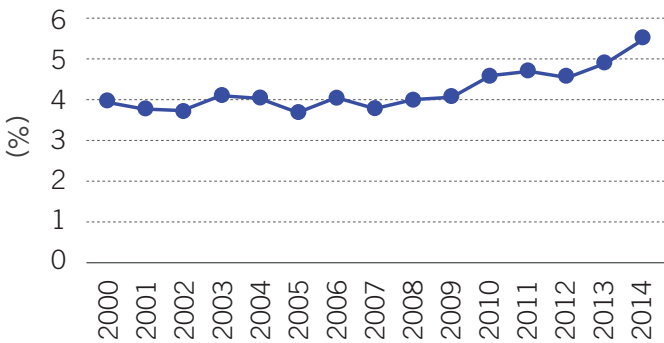
11. *ibid.*

12. Other: textiles, leather, rubber, multi-laminates, e-waste, appliances, ash and other inert materials (World Bank: *What a waste: A global review of solid waste management* (Washington, DC, 2012)).

13. *ibid.*

In 2014, more than 95 per cent of the population relied primarily on clean fuel and technology, in the sense that they do not create indoor pollution within the home.<sup>14</sup> The share of renewable energy in total energy consumption has steadily increased, although it was only 5.5 per cent in 2014 (Fig. 11). Renewable energy generation increased slightly between 2011 and 2015, with hydropower the main source of renewable energy, followed by solar in 2015 (Fig. 12). In 2016, approximately 330,400 people were employed in the renewable energy sector, with 91 per cent of them in solar photovoltaic (Fig. 13). The country's employment rate in electricity, gas, steam and air conditioning was only 1 per cent in 2016 (Fig. 9). According to the International Energy Agency,<sup>15</sup> Japan is a heavy consumer and exporter of energy; however, since the gradual shutdown of all nuclear power plants as a consequence of the Fukushima nuclear accident, there has been a significant increase in fossil fuel use and carbon dioxide emissions. Japan's energy policy is now shifting towards greater diversification of energy, with increased focus on reducing fossil fuel use, becoming more reliant on renewable energy and restarting nuclear plants when declared safe, thus curbing carbon emissions. With the push for increasing reliance on renewable energy, there will be greater potential for decent job opportunities in the future.

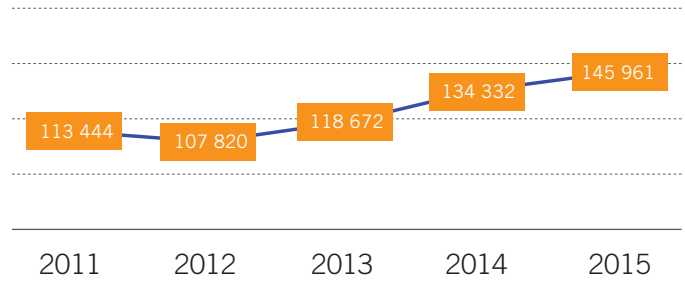
**Figure 11. Renewable energy share in total final energy consumption, 2000-14**



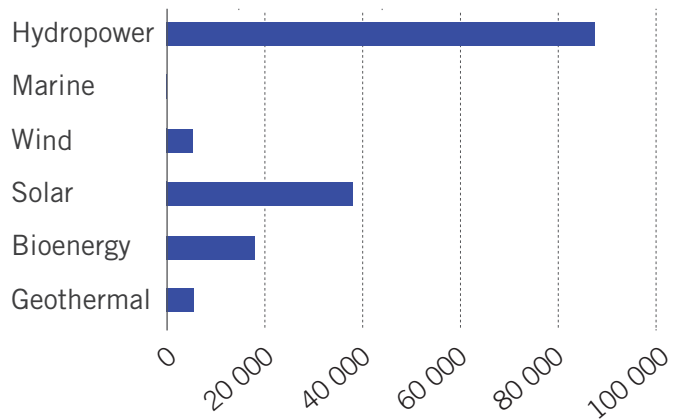
Source: ILO compilation using UN: SDG indicators: Global database (2017), <https://unstats.un.org/> (accessed 17 July 2017).

**Figure 12. Renewable energy generation, 2011-15**

**Total renewable energy electricity generation (GWh)**

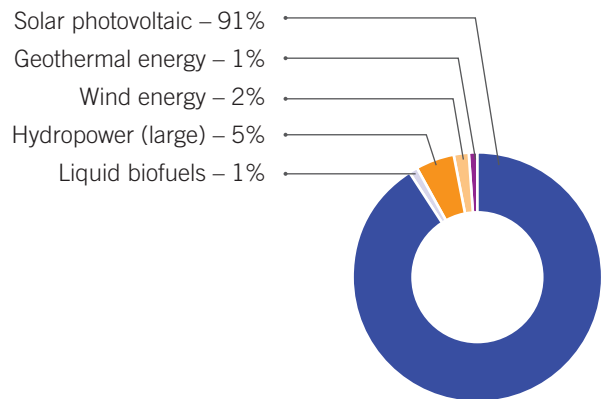


**Renewable energy electricity generation (GWh), by technology 2015**



Source: ILO compilation using International Renewable Energy Agency: Dashboards (2017), <http://resourceirena.irena.org/gateway/dashboard/> (accessed 17 July 2017).

**Figure 13. Renewable energy employment, by energy source, 2016**



Note: Data limitations apply for certain technologies in certain countries. The lack of data reported for any specific technology may thus be indicative of a data gap, rather than the absence of renewable energy jobs using that technology.

Source: ILO compilation using International Renewable Energy Agency: Dashboards (2017), <http://resourceirena.irena.org/gateway/dashboard/> (accessed 17 July 2017).

14. The proportion of population with primary reliance on clean fuels and technology is calculated as the number of people using clean fuels and technologies for cooking, heating and lighting divided by total population reporting any cooking, heating or lighting, expressed as a percentage. "Clean" is defined by the emission rate targets and specific fuel recommendations (against unprocessed coal and kerosene) included in the normative World Health Organization guidelines for indoor air quality; see the data for household fuel combustion, <https://unstats.un.org/sdgs/metadata/files/Metadata-07-01-02.pdf>.

15. See <https://www.iea.org/countries/membercountries/japan/>.

Better data collection relating to the green economy and the environmental sector would be valuable for policy-makers in Japan and Asian-Pacific countries. Better data on green and decent jobs is particularly needed to assess the impact of climate change and climate-related policies on social inclusion. Without better data, it will be difficult to determine what policy changes are needed to assure a just transition to environmental sustainability and to monitor progress going forward.

Disclaimer: The designations used in International Labour Organization publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Organization concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers