

WHAT IS RENEWABLE ENERGY ?

■ Definition

Renewable energy is energy that is derived from solar, wind, and any non-fossil fuels and can be continuously replenished.

■ Types of Renewable Energy*

Sunlight, wind, hydropower, geothermal, solar heat and other naturally existing heat, biomasses, etc.

* Ten types of renewable energy are designated under the Act on the Promotion of New Energy Usage.



Data: Website of the Agency for Natural Resource and Energy

FEED-IN TARIFF (FIT)

- Feed-in Tariff is the system which lays an obligation on operators of electric utilities to purchase electricity generated from renewable energy sources at a fixed price for a fixed term determined by the Ministry of Economy, Trade and Industry (METI) in order to promote the use of renewable energy.
- Effective from July 1, 2012
under the Act on Special Measures concerning the Procurement of Renewable Electric Energy by Operators of Electric Utilities (the “Renewable Energy Act”).
- Solar energy used to be cost-effective and sought-after in 2012 due to FIT.
⇒ Flooded with applicant, but FIT has been decreasing.
- Reduction in FIT for solar energy of 10kW and above
FIT from April 1, 2017 to March 31, 2018 has decreased to 21yen/kWh (excluding consumption tax) due to a decline in the power generating cost including solar panels and an increase in operating hours.
- Revision to the “Renewable Energy Act”
 1. Effective from April 1, 2017
 2. The approval was revoked unless an interconnection agreement with an electric utility operator had been concluded by March 31, 2017.



DECREASE IN FEED-IN TARIFF FOR SOLAR POWER GENERATION

■ Feed-in Tariff (FIT)

- Solar power energy generation of 10kW and above is recognized as an industrial use. METI revises FIT and term for renewable energies every year. As for solar energy, FIT has been decreasing.
- A public tender system will be introduced in October 2017 to promote competition and reduce FIT of energy from solar power generation with a capacity of and above 2,000 kW.

【FIT and applicable Term for FIT for Solar power energy generation of 10kW and above】

From To	July 1, 2012 March 31, 2013	April 1, 2013 March 31, 2014	April 1, 2014 March 31, 2015	April 1, 2015 June 30, 2015	June 1, 2015 March 31, 2016	April 1, 2016 March 31, 2017	April 1, 2017 March 31, 2018
FIT*	40yen/kWh	36yen/kWh	32yen/kWh	29yen/kWh	27yen/kWh	24yen/kWh	21yen/kWh
Term for FIT	20years	20years	20years	20years	20years	20years	20years

*Excluding consumption tax



RELATIONSHIP BETWEEN REVENUE AND ITS GENERATING FACTORS

■ Electricity sales revenue

$$\text{Electricity sales revenue} = \text{Sunlight} \times \text{Generating Capacity} \times \text{FIT}$$

- FIT has been fixed for 20 years, however subject to Provision 8, Article 3 of the Act on Special Measures concerning the Procurement of Renewable Electric Energy by Operators of Electric Utilities*

*The Minister of METI can revise the purchase price in the case of or in the face of apparent changes in the economic climate.

- Power Generation is almost directly correlated to the amount of sunlight*, so

Sunlight directly affects Revenue

*Data for sunlight by area is published by New Energy and Industrial Technology Development Organization (NEDO).

- Deterioration rate of solar panels

Deterioration differs by manufacturers but the average rate is recognized at 0.5 % per year.



SPREAD OF SOLAR POWER PLANTS IN JAPAN

	Number of approval			Approved capacity (unit: MW)				Number of approval			Approved capacity (unit: MW)		
	1MW and over	2MW and over	Total	1MW and over less than 2MW	2MW and over	Total		1MW and over	2MW and over	Total	1MW and over	2MW and over	Total
Hokkaido	359	62	421	542	927	1,469	Shiga	99	10	109	146	103	250
Aomori	120	44	164	195	1,236	1,432	Kyoto	81	13	94	111	188	299
Iwate	153	52	205	245	1,637	1,882	Osaka	91	10	101	146	106	252
Miyagi	276	85	361	447	2,215	2,662	Hyogo	317	67	384	455	698	1,153
Akita	73	7	80	114	108	222	Nara	51	10	61	77	159	235
Yamagata	44	8	52	64	463	527	Wakayama	44	30	74	62	597	659
Fukushima	306	124	430	494	2,754	3,248	Tottori	41	10	51	59	154	212
Ibaraki	676	71	747	1,031	1,266	2,297	Shimane	64	9	73	99	107	205
Tochigi	460	72	532	724	1,254	1,979	Okayama	177	50	227	267	1,298	1,564
Gunma	289	24	313	447	465	912	Hiroshima	135	22	157	193	332	525
Saitama	161	7	168	243	110	353	Yamaguchi	158	38	196	233	628	861
Chiba	505	47	552	790	794	1,584	Tokushima	83	3	86	118	29	147
Tokyo	10	1	11	16	15	31	Kagawa	113	7	120	180	68	248
Kanagawa	44	7	51	63	68	131	Ehime	99	9	108	142	160	301
Niigata	55	11	66	85	275	360	Kochi	91	8	99	144	178	322
Toyama	51	6	57	75	36	111	Fukuoka	374	35	409	603	447	1,050
Ishikawa	91	13	104	142	281	422	Saga	87	5	92	127	99	227
Fukui	44	0	44	67	0	67	Nagasaki	161	16	177	257	651	908
Yamanashi	78	11	89	120	130	250	Kumamoto	310	43	353	486	819	1,306
Nagano	144	24	168	213	489	702	Oita	259	45	304	403	825	1,228
Gifu	146	19	165	215	341	556	Miyazaki	270	42	312	387	998	1,385
Shizuoka	230	45	275	352	748	1,100	Kagoshima	526	53	579	798	1,039	1,838
Aichi	142	21	163	202	327	530	Okinawa	27	4	31	46	32	78
Mie	281	56	337	431	970	1,401	Total	8,396	1,356	9,752	12,856	26,623	39,480

Data as of October 31, 2016 published by the Agency for Natural Resource and Energy