■ Training Data

Types of Training Data

No.	Type	Contents
1	Total solar power output (each area)	Period: 2016/1/1~2017/12/31 Total solar power output measured in each area (S1, S2)
2	Temperature and global solar radiation values	Period: 2016/1/1~2017/12/31 Temperature and global solar radiation values of 4 measurement locations.

Data 1: Targeted Solar Power Plants

No.	Area	Solar Power Plant	Latitude (degrees)	Longitude (degrees)	Capacity (MW)	Azimuth (ave.) (degrees)	Tilt angle (ave.) (degrees)
1	S1	A	42.6559	141.6747	23.0	178	25
2		B	42.6365	141.6947	15.2		
3		C	42.6268	141.8433	15.2		
4		D	42.6608	141.7260	29.8		
5		E	42.7165	141.7940	111.0		
6		F	42.5628	141.3348	18.8		
7		G	43.1709	141.7012	9.0		
8		H	42.7050	141.7678	45.6		
1	S2	I	42.9937	144.1850	30.0	182	31
2		J	43.6810	145.0409	10.2		
3		K	43.8694	144.4827	9.1		
4		L	42.7971	143.4906	22.0		
5		M	43.0228	144.2990	21.7		
6		N	42.9087	143.9677	24.7		
7		O	42.6300	143.2911	22.0		

Data2: Measurement Locations (Temperature and Global Solar Radiation Values)

No.	Area	Measurement Location	Latitude (degrees)	Longitude (degrees)
1	S1	q1	43.1190	141.5388
2		q2	42.6347	141.5563
3	S2	q3	43.8087	143.8913
4		q4	42.9849	144.4130

■ Specification

(1) Training Data 1: Actual power output data from targeted solar power plants

Data format

The first line of data: header (column names)

The second and subsequent lines: data

Example

DATE	TIME	S1 [MW]	S2 [MW]
2016/1/1	0:00	0.0	0.0

Specification

Item	Description
Filename	LD1_P201601~201712.csv
File format	CSV (Comma-Separated Value)
Measurement interval	30minutes (Every hour 00 minutes, 30minutes)
Calculation	Actual power output from each plant is time-averaged every 30 minutes; the mean values are then aggregated as the total output for each area (S1, S2). Time of calculation of the mean values: (Time stamp) : (Time range) Every hour 00 minutes：0 min 00 sec ~ 29 min 59 sec Every hour 30 minutes：30 min 00 sec ~ 59 min 59 sec
DATE	YYYY/M/D (2016/1/1 ~ 2017/12/31)
TIME	h:mm (0:00 ~ 23:30)
S1[MW]	Total power output of area S1 Unit: MW Positive/Negative: positive value only Decimal point: 1st decimal place
S2[MW]	Total power output of area S2 Unit: MW Positive/Negative: positive value only Decimal point: 1st decimal place
Number of lines	35,089（including the header line） All data are packed in a single file.
Notation for data loss	“NA” (excluding “”)

(2) Training Data 2　Temperature and global solar radiation values

Data format

First two lines of data: header (measurement location notations and column names)

Third and subsequent lines: data

Example

		q1		q2		q3		q4	
DATE	TIME	solar[kW/m2]	temp[deg C]	solar[kW/m2]	temp[deg C]	solar[kW/m2]	temp[deg C]	solar[kW/m2]	temp[deg C]
2016/1/1	0:00	−0.00078	−2.3	−0.0009	−2.5	−0.00072	−8.8	−0.00205	−4.4

Specification

Item	Description
Filename	LD2_QT201601~201712.csv
File format	CSV (Comma-Separated Value)
Measurement interval	30minutes (Every hour 00 minutes, 30minutes)
Calculation	The sum of data calculated by averaging the temperature and global solar radiation every 30 minutes in each measurement location. Time of calculation of the mean values: (Time stamp): (Time range) Every hour 00 minutes: 0 min 00 sec ~ 29 min 59 sec Every hour 30 minutes: 30 min 00 sec ~ 59 min 59 sec
DATE	YYYY/M/D　(2016/1/1～2017/12/31)
TIME	h:mm　　(0:00～23:30)
q1 ~ q4 solar [kW/m^2]	Global solar radiation at q$_n$*th* location (n=1,2,3,4) Unit: kW/m^2 Positive/Negative: positive or negative value Decimal point : 9th decimal place The value may be negative due to measurement tolerance.
q1 ~ q4 temp [deg C]	Temperature at q$_n$*th* location (n=1,2,3,4) Unit : Degree centigrade (Celsius) Positive/Negative: positive or negative value Decimal point: 1st decimal place
Number of lines	35,090 (including the two header lines) All data are packed in a single file.
Notation for data loss	“NA” (excluding “”)

■Locations

■ : Locations of Targeted Solar Power Plants

▲ : Measurement Locations of Temperature and Global Solar Radiation Values