

Project Progress for Group 3

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Project Process Book Progress

12 2021 12,138

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Diagram 2.2: Cleaned dataset with only 2011 to 2021 year of Electricity Generation from Solar Photovoltaics only in United Kingdom

Solar photovoltaics deployment August 2022.xlsx

In this dataset, it shows the capacity and number of solar photovoltaic schemes installed in the United Kingdom. Within the dataset, there are multiple different excel worksheets which display different solar photovoltaics deployment by supporting scheme and capacity based on each year's months up until August 2022. For this dataset, I will be only using the solar photovoltaics deployment by capacity worksheet as it contains data that can be useful for the data visualization on the website. In the solar photovoltaics deployment by capacity worksheet, I removed unnecessary rows and only included the total solar photovoltaics cumulated capacity for deployment that can be consumed. Not only that, only above 2011 years are included as most values before 2011 are mainly 0 values or close to 0 values so all of them are excluded from the cleaned dataset. Lastly, I totaled up all the total values to separate the data based on years instead of months. This makes it easier to show the data in the data visualization in the website. The cleaned datasets are then renamed as Total Solar Photovoltaics Deployed of Each Year in UK 2011 to 2021.csv as the finalised cleaned dataset.

Raw Dataset:

Solar photovoltaics deployment by capa

1. This worksheet contains two tables one on top of each the other.
2. Freeze panes is active for the first column only. This can be disabled.
3. Units are specified in the top left cell of each table.

CUMULATIVE CAPACITY (MW) (June 21)	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021
GB						
0 to < 4 kW	2,718.4	2,725.6	2,731.2	2,744.7	2,754.7	2,764.1
4 to < 10 kW	772.3	777.8	782.7	786.9	791.2	795.4
10 to < 50 kW	882.6	886.9	890.3	893.5	896.4	899.4
50 kW to < 1.5 MW	3,496.2	3,496.2	3,496.2	3,496.2	3,496.2	3,496.2
1.5 to < 25 MW	4,404.9	4,413.9	4,421.9	4,431.9	4,441.9	4,451.9
> 25 MW	1,521.0	1,528.0	1,538.0	1,548.0	1,558.0	1,568.0
TOTAL	13,095.4	13,159.4	13,225.2	13,293.3	13,366.4	13,436.9
0 to < 4 kW	57.9	57.9	58.0	58.1	58.1	58.4

KNIME

As for the last dataset, which is called Global Power Plant.csv, KNIME is used as the dataset contains multiple countries and its power plant. It also includes the various primary energy used as the fuel for the power plant. Since this dataset contains United States and United Kingdom values with solar energy being used as the primary fuel, it will be cleaned and filtered into two different datasets. This dataset requires using KNIME to clean and filter data as KNIME can easily clean and filter datasets if the datasets are too large to be manually filtered using Microsoft Excel. Based on the screenshot of the KNIME workflow, the dataset is cleaned and filtered to include United States and United Kingdom data that uses solar energy as its primary fuel to two different datasets respectively.

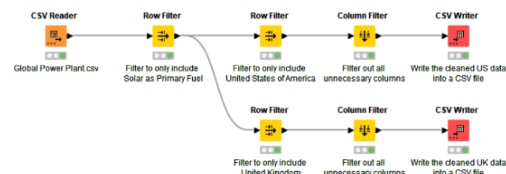


Diagram 2.3.1: KNIME workflow for the Global Power Plant.csv file

The first node is used to read the Global Power Plant.csv file and show the original contents of the dataset before it is filtered and cleaned. The row filter following that, will filter to only include data that uses solar energy as the primary fuel. After that, two different workflows are created to

Cleaned Datasets Screenshots

United States Cleaned Datasets

Global Power Plant.csv

Raw Data:

	A	B	C	D	E	F	G	H	I	J	K
1	Country	Powerplant	gppd_idnr	Capacity (M	Latitude	Longitude	Primary Fu	Owner	Source		
2	Afghanistan	Kajaki Hyd	GEODB004	33	32.322	65.119	Hydro		GEODB		
3	Afghanistan	Mahipar H	GEODB004	66	34.556	69.4787	Hydro		GEODB		
4	Afghanistan	Naghlu Da	GEODB004	100	34.641	69.717	Hydro		GEODB		
5	Afghanistan	Nangarhar	GEODB004	11.55	34.4847	70.3633	Hydro		GEODB		
6	Afghanistan	Northwest	GEODB004	42	34.5638	69.1134	Gas		GEODB		
7	Afghanistan	Pul-e-Khur	GEODB004	6	35.9416	68.71	Hydro		GEODB		
8	Afghanistan	Sarobi Dar	GEODB004	22	34.5865	69.7757	Hydro		GEODB		
9	Albania	Bistrica 1	WRI10021	27	39.9116	20.1047	Hydro		Energy Charter Secretariat		
10	Albania	Fierza	WRI10021	500	42.2514	20.0431	Hydro		Energy Charter Secretariat		
11	Albania	Koman	WRI10021	600	42.1033	19.8224	Hydro		Energy Charter Secretariat		
12	Albania	Lanabrega	WRI10021	5	41.3428	19.8964	Hydro		Energy Charter Secretariat		
13	Albania	Shkopet	WRI10021	24	41.6796	19.8305	Hydro		Energy Charter Secretariat		
14	Albania	Ulez	WRI10021	25	41.6796	19.8936	Hydro		Energy Charter Secretariat		
15	Albania	Vau i Djes	WRI10021	250	42.0137	19.6359	Hydro		Energy Charter Secretariat		
16	Albania	Vlora	WRI10021	98	40.4874	19.434	Other		Energy Charter Secretariat		
17	Algeria	Ain Djasse	WRI10237	520	35.8665	6.0262	Gas	Soci�t�	Arab Union of Electricity		
18	Algeria	Annaba	WRI10237	71	36.8924	7.7634	Gas	Soci�t�	Arab Union of Electricity		
19	Algeria	Arbaa	WRI10237	560	36.5988	3.1375	Gas	Sonelgaz	Arab Union of Electricity		
20	Algeria	Boufarik 1	WRI10237	100	36.5914	2.9223	Gas		Arab Union of Electricity		
21	Algeria	Boufarik 2	WRI10237	450	36.596	2.878	Gas		Arab Union of Electricity		
22	Algeria	Boutelilis	WRI10237	450	35.5658	-0.9386	Gas		Arab Union of Electricity		
23	Algeria	F'Krina	WRI10237	292	35.7666	7.3619	Gas	Sonelgaz P	Arab Union of Electricity		
24	Algeria	Hadjret En	WRI10237	1200	36.5767	2.0797	Gas	Sharikat K�	Arab Union of Electricity		
25	Algeria	Hamma 2	WRI10237	418	36.7489	3.0823	Gas	Sonelgaz P	Arab Union of Electricity		
26	Algeria	Hassi Mess	WRI10237	72	31.6703	6.0531	Gas	Sonelgaz P	Arab Union of Electricity		
27	Algeria	Hassi Mess	WRI10237	600	31.6703	6.0531	Gas	Sonelgaz P	Arab Union of Electricity		
28	Algeria	Hassi Mess	WRI10237	300	31.6703	6.0531	Gas	Sonelgaz P	Arab Union of Electricity		

Cleaned Dataset:

US

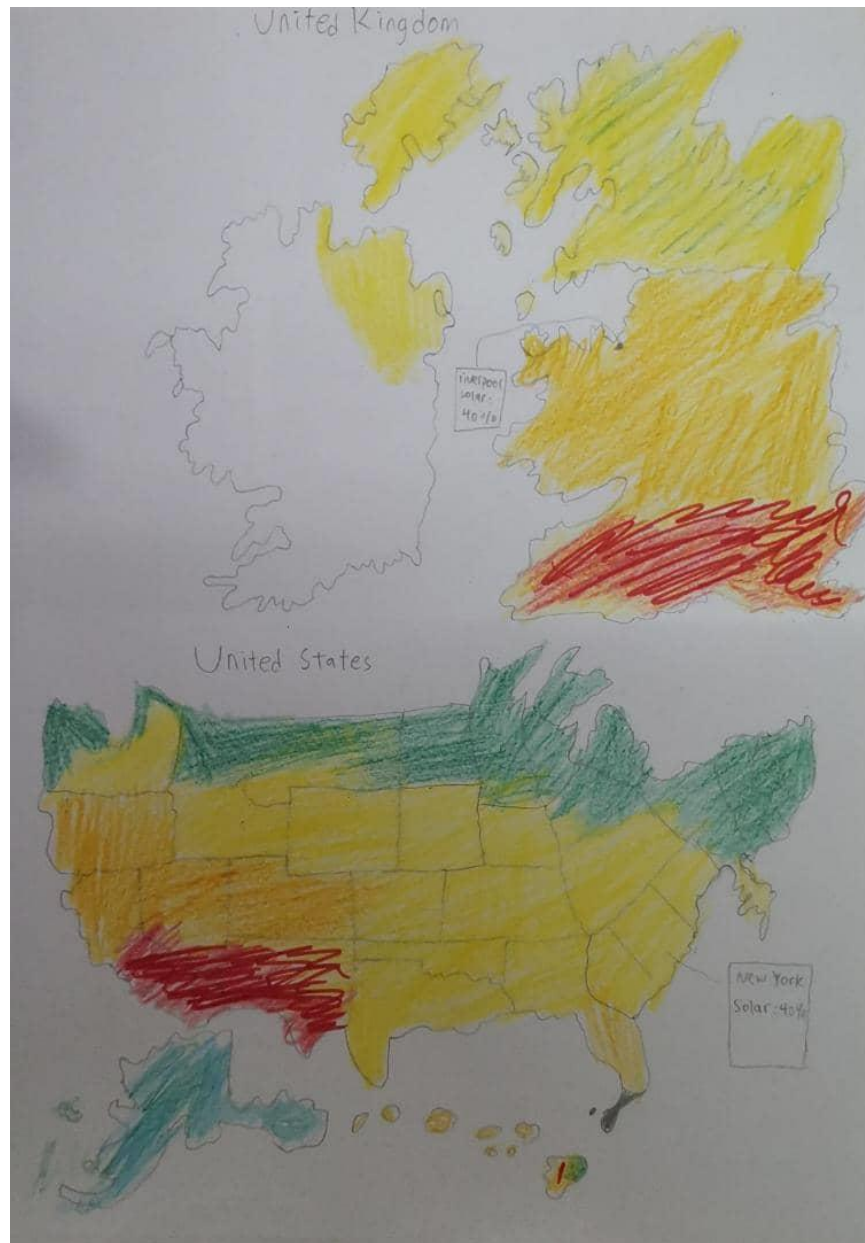
	A	B	C	D	E	F	G
1	Country	Powerplan	Capacity (f	Latitude	Longitude	Primary Fuel	
2	United Sta	12 Applega	1.9	40.2003	-74.5761	Solar	
3	United Sta	126 Grove	2	42.0761	-71.4227	Solar	
4	United Sta	1420 Coil /	1.3	33.7943	-118.241	Solar	
5	United Sta	145 Talma	3.8	40.5358	-74.3913	Solar	
6	United Sta	158th Figh	1.3	44.4777	-73.1534	Solar	
7	United Sta	180 Rarita	1.9	40.5161	-74.34	Solar	
8	United Sta	201 Sturbr	2	42.1091	-72.1712	Solar	
9	United Sta	205 Sturbr	3	42.1093	-72.1705	Solar	
10	United Sta	2081 Terzi	1.2	36.67	-119.416	Solar	
11	United Sta	2097 Helte	1.5	37.3522	-120.507	Solar	
12	United Sta	2127 Harri	1.3	39.2917	-121.67	Solar	
13	United Sta	231 Dixon	2	35.2441	-81.4304	Solar	
14	United Sta	24 Applega	4.9	40.2058	-74.5797	Solar	
15	United Sta	2555 E Oly	1	34.0269	-118.224	Solar	
16	United Sta	265 Pleasa	2.2	42.5814	-71.7622	Solar	
17	United Sta	301 Chestn	4.3	42.0552	-72.5218	Solar	
18	United Sta	350 Clark S	1.8	40.8942	-74.7302	Solar	

UK

	A	B	C	D	E	F	
1	Country	Powerplan	Capacity (f	Latitude	Longitude	Primary Fuel	
2	United Kin	289 Finvoy	5.9	54.9638	-6.493	Solar	
3	United Kin	30 Acres	4.965	53.2062	-1.1968	Solar	
4	United Kin	AMBLESTC	6	51.8992	-4.8665	Solar	
5	United Kin	Abbey Farr	9	52.4193	-0.2366	Solar	
6	United Kin	Abbey Fiel	5.3	51.3187	0.9029	Solar	
7	United Kin	Abbots An	7	51.1636	-1.5123	Solar	
8	United Kin	Abbots Rip	24.66717	52.3787	-0.1982	Solar	
9	United Kin	Abbots Rip	3.9	52.3726	-0.1943	Solar	
10	United Kin	Abergelli	7.68222	51.7007	-3.9476	Solar	
11	United Kin	Aberporth	1.5	52.1234	-4.5632	Solar	
12	United Kin	Agricultura	4	51.5238	-3.4252	Solar	
13	United Kin	Airfield Far	5	52.4746	0.9501	Solar	
14	United Kin	Alan Bartle	1.2	52.4511	0.0379	Solar	
15	United Kin	Albrighton	15.8	52.6395	-2.2507	Solar	
16	United Kin	Aldi - Card	1.5	51.5002	-3.1181	Solar	
17	United Kin	Aldi Distrib	1.3	55.8787	-3.6482	Solar	
18	United Kin	Aldi Distrib	1.2	54.5485	-1.5739	Solar	

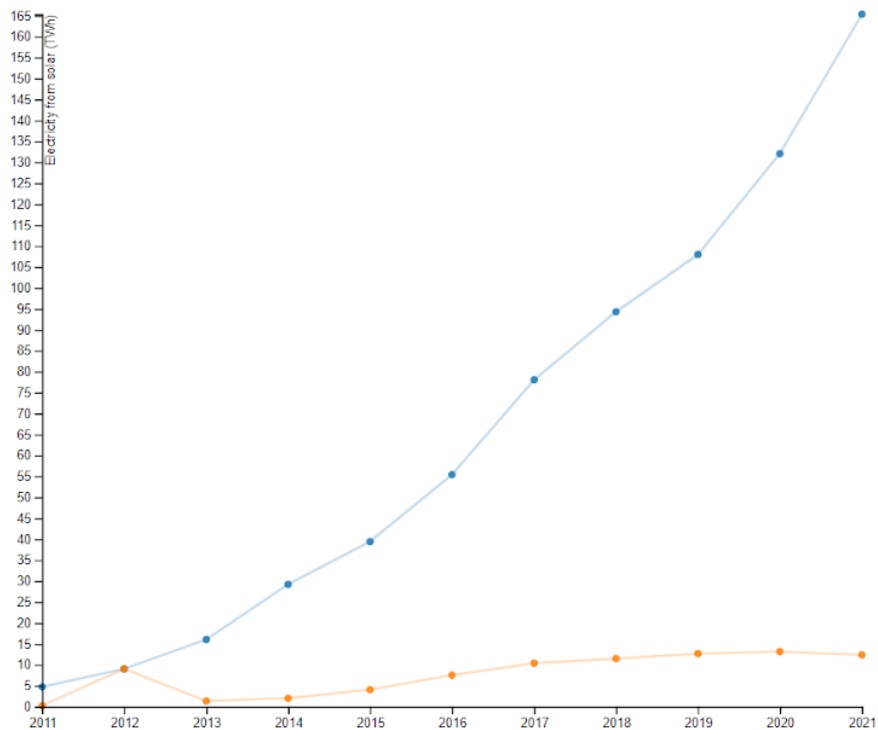
Data Visualisation Designs

Choropleth



Website Progress

Line Chart in Progress



Bar Chart In Progress

