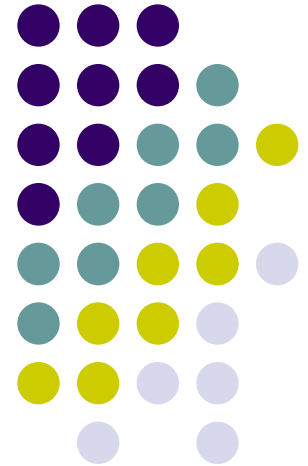


Scottsdale Solar Energy Trends 2024

City of Scottsdale Green Building Program

January 13, 2025

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Office of Environmental Initiatives



Solar Permits - 2024

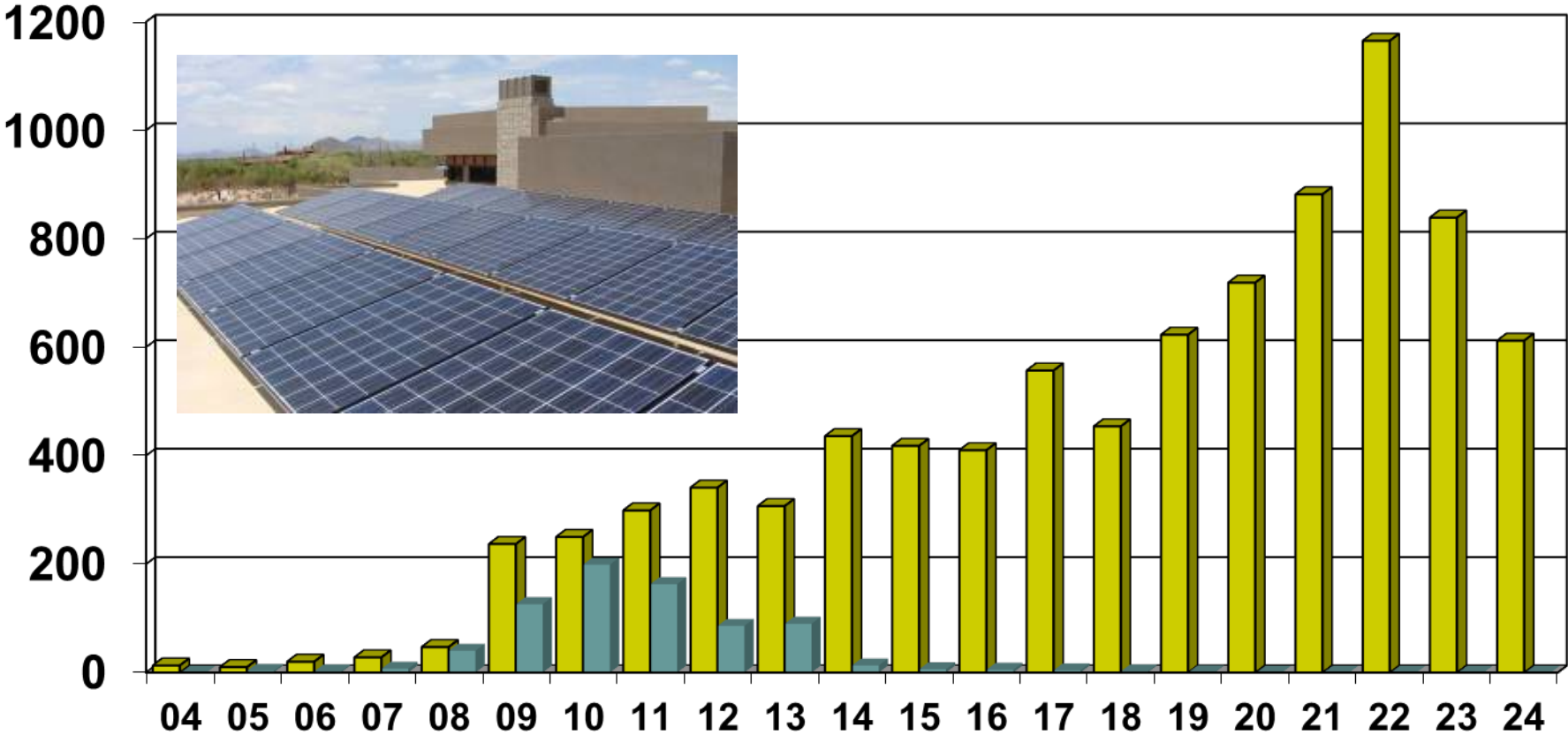
2022 Quarter	Solar Electric PV Permits Residential	Solar Electric PV Permits Commercial	Solar Hot Water Permits	Total Permits
1st	182	0	0	182
2nd	133	0	0	133
3rd	144	0	0	144
4th	148	5	0	153
Total	607	5	0	612

Source: Scottsdale CDS permit records

Solar installations 2002 to 2024



8,672 solar PV installations (9.3% of 92,760 owner-occupied homes)



Source: Scottsdale CDS permit records and US Census 2023 housing estimates

Solar Permits 2002 to 2024

Solar Electric (PV)

8,672 total solar PV permits issued

Year	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Permits	2	3	13	10	20	28	47	237	250	299	341	307	436	418	410	557	454	623	719	882	1165	839	612

Solar Hot Water

748 total solar hot water permits issued

Year	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Permits	-	1	0	3	2	7	40	126	199	163	86	90	13	6	5	4	2	1	0	0	0	0	0

Note: Many early solar permits (2002 – 2008) were designated as minimum electrical, plumbing or water heater permits.

Source: Scottsdale CDS permit records

On-Site Energy Generation and Environmental Impact Reduction of Solar Electric (PV) Systems

Estimated energy savings and equivalent greenhouse gas reduction resulting from installed roof top solar PV systems in **2024**.

Green Home Energy Measures	Annual Energy Savings and Pollution Reduction	
	Per Home	Total Savings for 612 solar PV roof tops in 2024
Average PV system size	10 kW	6.12 MW
Average Annual On-Site Energy Generation¹	17,528 Kilowatt hours (kWh)	10,727,136 Kilowatt hours (kWh)
Average Annual Energy Value based on 11.96 cents/kWh	\$2,096.35	\$1,282,966.2
Equivalent Annual Greenhouse Gas Reduction²	11.1 tons of carbon dioxide (CO ₂) avoided	6,723.2 tons of carbon dioxide (CO ₂) avoided
Equivalent average passenger vehicles removed from Street²	2.4 cars	1,468.8 cars
Equivalent home's energy use for one year²	1.4	856.8

Sources: ¹pwwatts.nrel.gov; ²epa.gov/energy/greenhouse-gas-equivalencies-calculator

On-Site Energy Generation and Environmental Impact Reduction of Solar Electric (PV) Systems

Estimated energy savings and equivalent greenhouse gas reduction resulting from installed roof top solar PV systems from **2002 to 2024**.

Green Home Energy Measures	Annual Energy Savings and Pollution Reduction	
	Per Home	Total Savings for <u>8,672</u> solar PV roof tops
Average PV system size	10 kW	80.6 MW
Average Annual On-Site Energy Generation¹	17,528 Kilowatt hours (kWh)	152,002,816 Kilowatt hours (kWh)
Average Annual Energy Value based on 11.96 cents/kWh	\$2,096.35	\$18,179,547.20
Equivalent Annual Greenhouse Gas Reduction²	11.1 tons of carbon dioxide (CO ₂) avoided	96,259.2 tons of carbon dioxide (CO ₂) avoided
Equivalent average passenger vehicles removed from Street²	2.4 cars	20,812.8 cars
Equivalent home's energy use for one year²	1.4	12,140.8

Sources: ¹pwwatts.nrel.gov; ²epa.gov/energy/greenhouse-gas-equivalencies-calculator