Calculate CDR Requirements

The purpose of this Web page (https://fairallocation.org/calccdr.aspx) is to allow the user to calculate the carbon dioxide removal (CDR) requirements for a variety of CO2 emissions pathways and a variety of global warming targets (either temperature increase or atmospheric CO2 PPM). The possible end years for the analysis are limited to 2040, 2050, and 2060 as the quantity of net CO2 emissions over the next 40 years are key to limiting the temperature increase to a level that prevents catastrophic climate change – if the temperature increases by over 2.0°C before 2060 it is almost certain that our efforts stabilize the climate will fail.

The process for calculating the CDR requirements is very simple – in the "specification area" of the Web page (see Figure 1):

1. Select an emissions pathway
2. Specify the climate goal
3. Specify other "items" that will affect the net emissions (for feedbacks, direct air capture, etc.)
4. Click the "Submit" button.

The results are displayed below the "specification area" in both a table (see Figure 2) and graphs (see Figure 3). (Note that the temperature increase shown for 2020 is often a bit high as the model does not do a good job of calculating the temperature increase before the year 2030, possibly due to the "ramp up" of CDR.)

(The model - used to make the calculations - is described in Appendix C below.)

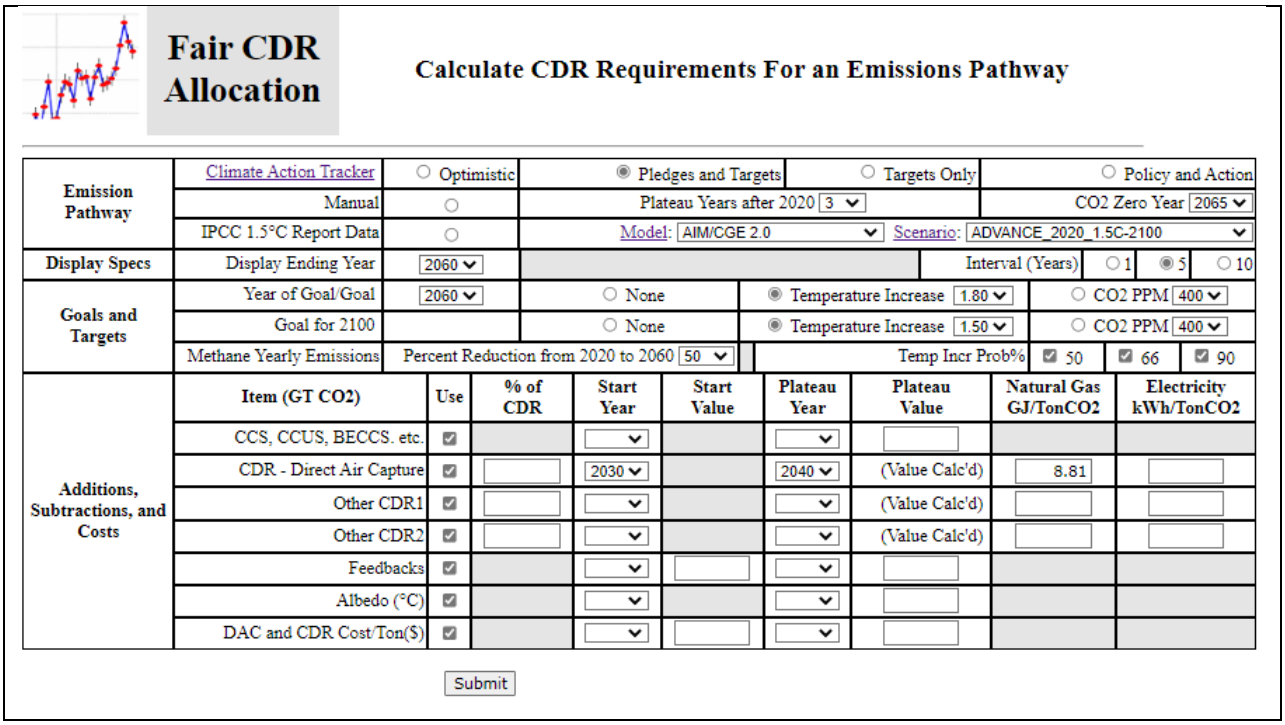

Figure 1

	2020	2025	2030	2035	2040	2045	2050	2055	2060
CO2 Emissions	35.00	35.00	35.00	31.85	28.70	25.55	22.40	19.25	16.10
Cum CO2 Emissions	0.00	175.00	350.00	518.70	671.65	808.85	930.29	1036.00	1125.95
Results for 50% Chance of the Temparature not Exceeding 1.5°C in 2060									
Direct Air Capture (DAC)	0.00	0.00	3.18	17.35	31.88	31.88	31.88	31.88	31.88
Net CO2 Emissions	35.00	35.00	31.81	14.49	-3.18	-6.33	-9.48	-12.63	-15.78
Cumulative CDR	0.00	0.00	0.00	44.28	159.42	318.84	478.26	637.68	797.10
Cumulative Net Emissions	0.00	175.00	350.00	474.41	512.22	490.00	452.03	398.31	328.84
CO2 PPM	408.06	421.38	433.01	438.96	437.17	430.84	423.97	416.51	408.36
Temperature Increase	1.34	1.44	1.55	1.63	1.65	1.63	1.60	1.55	1.50

Figure 2 (results for both 66% chance and 90% chance are also shown on the Web page)

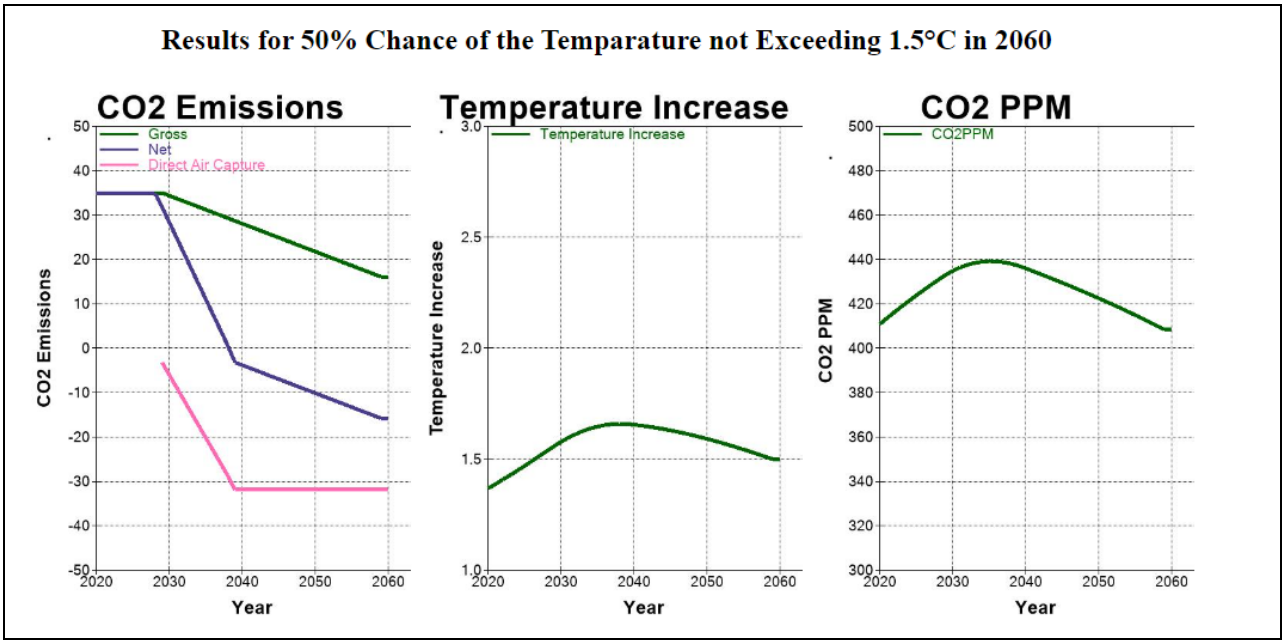

Figure 3 (results for both 66% chance and 90% chance are also shown on the Web page)