

1 Supplementary Material

2 **Table S1.** Annual average zonal (longitude-average) temperatures and their difference
3 from the IGSM outputs for percentiles of 0.5th, 5th, 50th, 95th and 99.5th for five latitudes
4 in 2050.

2050 Average Zonal Temperature (K)						
Latitude Index	Latitude	0.5%	5%	50%	95%	99.5%
1	19.6	295.3	295.3	295.9	296.6	297.5
2	27.4	292.0	291.9	292.8	293.1	294.1
3	35.2	288.2	288.4	288.6	290.0	291.1
4	43.0	282.4	282.8	283.3	284.2	285.4
5	50.9	277.3	277.8	278.2	279.1	279.8

2050 Average ΔT (K)						
Latitude Index	Latitude	0.5%-50%	5%-50%	-	95%-50%	99.5%-50%
1	19.6	-0.6	-0.6	-	0.7	1.6
2	27.4	-0.8	-0.9	-	0.3	1.3
3	35.2	-0.4	-0.2	-	1.4	2.5
4	43.0	-0.9	-0.5	-	0.9	2.1
5	50.9	-0.9	-0.4	-	0.9	1.6

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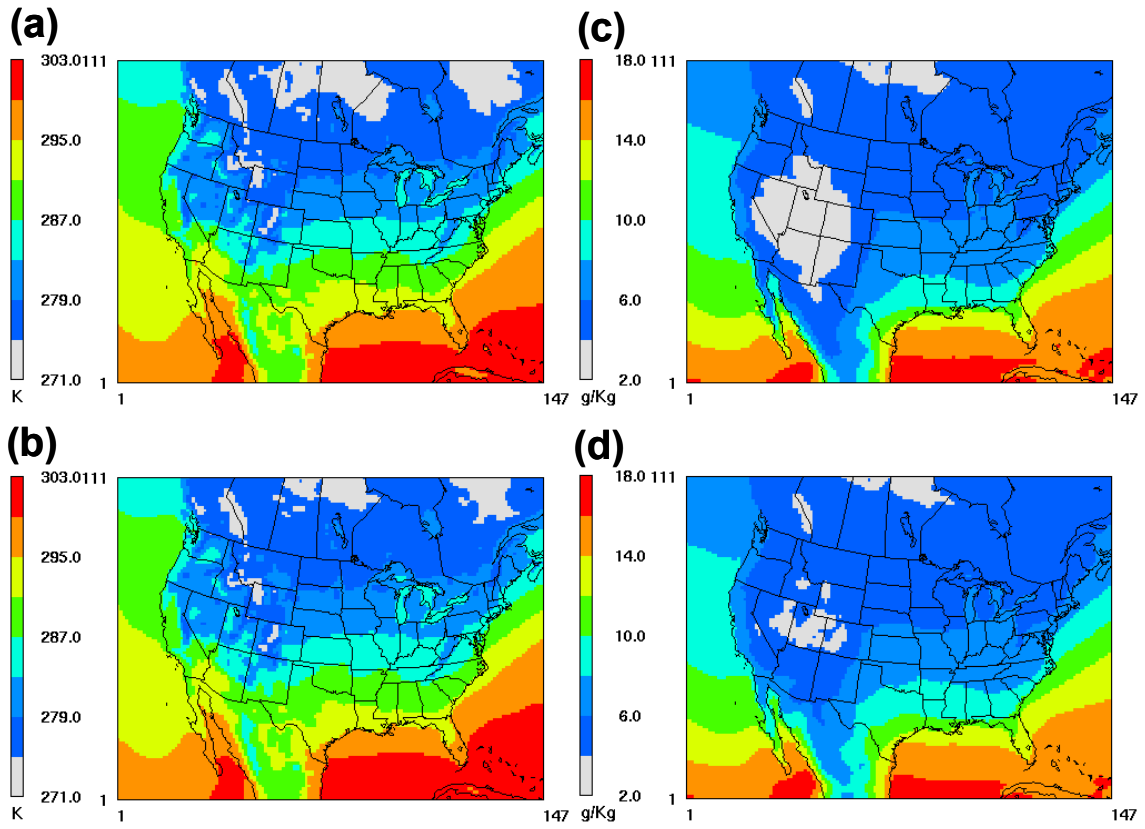
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Table S2. Annualized and summer-averaged emissions of NO_x, SO₂, NH₃, PM_{2.5}, biogenic VOC (BVOC) and anthropogenic VOC (AVOC) (tons/day) for 2001 and the base, low-extreme and high-extreme scenarios in 2050

	Annualized (tons/day)					Summer average (tons/day)							
	2001	Base	Low-extreme	High-extreme	2001	Base	Low-extreme	High-extreme	2001	Base	Low-extreme	High-extreme	
West	NO _x	6460	3343	3321	3370	6938	3915	3869	3934	6938	3915	3869	3934
	SO ₂	1387	827	827	827	1472	1010	1010	1010	1472	1010	1010	1010
	NH ₃	1460	1981	1981	1981	1698	2236	2236	2236	1698	2236	2236	2236
	PM _{2.5}	2183	2114	2114	2114	3484	3480	3480	3480	3484	3480	3480	3480
	BVOC	14064	15884	14740	19180	32745	35443	33097	42695	32745	35443	33097	42695
AVOC	5774	4224	4159	4228	6328	4761	4774	4774	6328	4761	4774	4774	
Plain	NO _x	12038	7232	7175	7430	13390	8722	8682	8996	13390	8722	8682	8996
	SO ₂	5915	3846	3846	3846	6317	4506	4506	4506	6317	4506	4506	4506
	NH ₃	2806	3483	3483	3483	3274	4161	4161	4161	3274	4161	4161	4161
	PM _{2.5}	3346	3215	3215	3215	3678	3633	3633	3633	3678	3633	3633	3633
	BVOC	16329	15433	14204	18963	35068	36707	34047	44913	35068	36707	34047	44913
AVOC	6551	4567	4509	4580	6653	4891	4885	4925	6653	4891	4885	4925	
Midwest	NO _x	15480	6073	6050	6159	15507	6386	6377	6537	15507	6386	6377	6537
	SO ₂	15600	8060	8060	8060	15500	8572	8572	8572	15500	8572	8572	8572
	NH ₃	2933	3376	3376	3376	3257	3874	3874	3874	3257	3874	3874	3874
	PM _{2.5}	3420	2945	2945	2945	3012	2713	2713	2713	3012	2713	2713	2713
	BVOC	11165	9687	8824	11885	27491	26862	24528	33141	27491	26862	24528	33141
AVOC	9984	6412	6353	6416	9492	6433	6430	6442	9492	6433	6430	6442	
Northeast	NO _x	8052	2986	2985	2984	7544	2772	2765	2775	7544	2772	2765	2775
	SO ₂	7594	2030	2030	2030	7093	1814	1814	1814	7093	1814	1814	1814
	NH ₃	888	1005	1005	1005	1018	1178	1178	1178	1018	1178	1178	1178
	PM _{2.5}	1450	1039	1039	1039	1098	846	846	846	1098	846	846	846
	BVOC	3694	4406	4055	5305	9219	11751	10807	14323	9219	11751	10807	14323
AVOC	6510	3905	3866	3908	5899	3730	3732	3700	5899	3730	3732	3700	
Southeast	NO _x	13513	5592	5568	5611	13463	5788	5756	5806	13463	5788	5756	5806
	SO ₂	11052	4364	4364	4364	11010	4836	4836	4836	11010	4836	4836	4836
	NH ₃	2068	2754	2754	2754	2646	3563	3563	3563	2646	3563	3563	3563
	PM _{2.5}	2969	2698	2698	2698	2556	2396	2396	2396	2556	2396	2396	2396
	BVOC	27092	24780	22830	29566	54672	60992	56542	71647	54672	60992	56542	71647
AVOC	10121	6320	6242	6338	9254	5931	5947	5851	9254	5931	5947	5851	
US	NO _x	55544	25225	25099	25553	56841	27583	27450	28048	56841	27583	27450	28048
	SO ₂	41548	19127	19127	19127	41391	20738	20738	20738	41391	20738	20738	20738
	NH ₃	10155	12598	12598	12598	11894	15013	15013	15013	11894	15013	15013	15013
	PM _{2.5}	13368	12010	12010	12010	13828	13067	13067	13067	13828	13067	13067	13067
	BVOC	72344	70190	64652	84898	159196	171755	159020	206719	159196	171755	159020	206719
AVOC	38938	25428	25123	25470	37626	25750	25755	25693	37626	25750	25755	25693	

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4 Fig. S1. Spatial distribution of annualized temperature (K) (figures (a) & (b)) and
5 absolute humidity (g/Kg) (figures (c) & (d)) for 2050 base GISS-MM5 (top) and 50%
6 IGSM climate (bottom)

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