

Table 28. Barriers to Making Improvements to Reduce Energy Use or Conserve Water: 2023

[Excludes institutional, research, and experimental farms. For meaning of abbreviations and symbols see introductory text.]

Geographic area	Total ¹					Investigating improvements not a priority				
	Farms	Land in farms (acres)	Acres Equipped (see text)	Acres irrigated	Acre-feet applied ^{2,3}	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acre-feet applied ³
United States	124,043	109,235,570	31,965,301	29,930,162	45,703,633	36,382	22,295,161	5,384,141	5,026,403	7,163,013
Alabama	751	586,284	123,412	113,942	74,773	269	198,901	28,881	25,775	13,507
Alaska	195	4,714	849	585	264	101	740	304	222	106
Arizona	1,695	2,532,412	551,439	499,539	2,085,897	399	109,701	69,116	59,112	270,788
Arkansas	1,688	3,104,125	2,681,101	2,614,848	2,909,506	355	576,538	494,655	488,832	572,649
California	21,835	8,847,133	4,610,641	4,318,666	12,854,325	5,625	1,453,430	544,034	521,037	1,689,423
Colorado	8,379	7,025,047	1,532,631	1,461,308	2,285,666	2,226	683,719	229,607	217,117	350,391
Connecticut	304	19,106	4,573	2,112	3,394	132	4,448	1,003	714	1,136
Delaware	237	150,165	70,545	69,256	44,969	70	37,159	14,275	14,245	7,240
Florida	4,289	1,445,977	481,862	431,274	524,774	1,631	439,119	103,655	101,580	108,818
Georgia	2,453	1,464,195	629,629	586,956	598,737	992	431,606	114,571	113,373	72,254
Hawaii	1,055	51,466	15,747	11,082	19,346	467	5,125	2,951	2,363	2,072
Idaho	7,096	3,797,468	1,803,252	1,745,386	2,995,098	2,008	554,096	297,861	288,706	439,238
Illinois	1,211	1,116,513	359,537	351,868	212,363	443	432,320	86,569	84,549	41,504
Indiana	1,087	911,427	280,953	269,714	137,307	428	340,321	99,348	94,534	47,105
Iowa	659	548,409	144,882	139,855	79,532	307	258,300	36,513	33,279	19,336
Kansas	2,454	6,702,901	1,406,795	1,326,072	1,449,987	641	1,240,495	146,126	142,644	153,272
Kentucky	823	312,383	47,668	37,276	19,436	436	155,125	21,668	18,101	10,515
Louisiana	1,172	1,497,548	947,833	812,432	922,084	382	446,999	315,570	230,308	345,719
Maine	403	94,247	12,904	8,901	2,200	225	37,327	4,598	2,753	815
Maryland	552	179,849	70,121	67,034	31,295	229	59,938	18,785	18,200	10,744
Massachusetts	790	54,155	16,000	11,306	6,732	327	20,214	4,012	3,276	1,746
Michigan	2,542	1,337,524	488,218	435,694	234,618	948	316,720	76,755	68,600	38,549
Minnesota	1,246	738,789	308,160	303,575	218,537	406	222,289	58,695	57,127	34,938
Mississippi	882	1,048,569	811,922	784,353	651,008	202	231,526	166,534	165,220	163,822
Missouri	1,250	1,432,543	848,578	833,046	732,434	418	631,330	385,612	379,217	306,079
Montana	4,385	9,681,728	996,751	963,630	1,201,754	1,207	1,672,360	222,974	215,779	251,115
Nebraska	7,064	13,603,905	4,252,896	4,167,260	3,777,730	1,357	2,053,200	448,982	433,485	352,760
Nevada	985	1,567,775	444,319	430,794	1,309,844	249	658,532	141,541	136,395	408,955
New Hampshire	223	13,032	2,918	1,228	819	89	2,709	245	165	212
New Jersey	735	110,303	39,637	33,491	19,412	279	17,934	6,223	5,635	4,160
New Mexico	4,217	2,091,712	298,577	263,659	569,831	720	736,859	29,357	29,198	69,077
New York	1,352	182,480	52,859	36,767	16,725	717	80,118	17,018	13,647	8,602
North Carolina	1,404	470,487	107,861	74,323	58,712	589	128,273	22,662	19,744	11,314
North Dakota	296	749,572	120,505	116,307	76,798	117	214,720	23,297	20,507	10,391
Ohio	958	137,925	35,959	29,193	23,605	303	51,700	8,293	6,342	2,798
Oklahoma	1,136	2,635,332	385,845	356,258	432,841	408	733,759	103,509	93,667	85,257
Oregon	7,865	4,215,301	1,009,586	827,425	1,397,012	2,193	1,229,893	174,002	115,008	153,503
Pennsylvania	1,177	128,767	26,666	16,747	11,792	690	64,982	12,090	7,045	4,292
Rhode Island	104	3,311	1,024	802	717	41	627	126	108	81
South Carolina	878	511,692	101,166	94,085	66,670	394	292,857	37,679	35,960	16,021
South Dakota	851	1,713,198	220,679	211,941	145,343	278	421,625	52,576	51,838	38,152
Tennessee	793	491,503	105,381	99,524	50,548	306	143,881	19,009	16,004	7,227
Texas	6,821	12,802,343	2,945,665	2,549,062	3,115,476	1,636	2,154,995	333,590	315,714	387,584
Utah	6,642	2,694,861	674,305	645,659	1,403,536	1,713	282,061	79,272	77,724	187,023
Vermont	239	13,802	1,407	703	467	153	10,204	592	388	301
Virginia	693	251,996	51,058	34,141	18,980	211	47,362	8,192	6,502	2,928
Washington	5,840	2,038,958	791,573	754,457	1,557,903	1,829	258,171	119,010	110,845	210,499
West Virginia	186	13,253	1,266	996	361	81	10,788	424	364	167
Wisconsin	1,375	938,474	312,516	284,114	263,522	496	289,255	73,750	56,800	36,551
Wyoming	2,776	7,170,911	735,630	701,516	1,088,951	659	1,850,360	128,030	126,655	212,277
Water Resource Regions										
Region 01 New England	1,908	190,906	37,772	24,512	13,937	875	71,949	10,249	7,109	4,029
Region 02 Mid-Atlantic	3,804	816,136	279,563	243,837	135,402	1,651	245,757	69,455	61,177	34,798
Region 03 South Atlantic-Gulf	9,906	4,344,059	1,412,752	1,267,322	1,309,338	3,892	1,504,639	303,046	293,922	222,441
Region 04 Great Lakes	4,188	1,733,941	625,435	550,832	311,778	1,864	452,573	112,573	96,290	54,951
Region 05 Ohio	2,845	1,183,643	237,634	213,494	118,850	1,267	479,068	58,546	49,631	18,189
Region 06 Tennessee	701	362,003	73,065	67,170	40,990	188	50,245	12,001	8,995	4,043
Region 07 Upper Mississippi	4,090	3,087,015	1,039,661	1,002,941	721,535	1,443	1,232,192	285,023	265,609	156,305
Region 08 Lower Mississippi	3,405	6,157,130	4,763,715	4,555,519	4,690,884	868	1,596,179	1,253,558	1,160,318	1,293,194
Region 09 Souris-Red-Rainy	241	434,589	90,990	88,765	58,803	81	114,951	19,702	17,577	11,823
Region 10 Missouri	17,162	36,895,877	7,079,651	6,860,878	7,134,435	4,004	7,024,978	954,945	922,133	926,661
Region 11 Arkansas-White-Red	5,841	11,704,945	3,244,889	3,000,928	3,783,365	1,442	2,214,272	432,636	408,535	520,234
Region 12 Texas-Gulf	5,408	7,185,414	1,850,949	1,600,513	1,746,987	1,389	1,888,751	253,828	237,954	269,997
Region 13 Rio Grande	4,348	4,157,700	507,891	451,480	917,917	748	477,221	38,966	38,476	65,046
Region 14 Upper Colorado	6,356	4,588,996	741,826	689,041	1,133,541	1,892	369,403	139,177	135,786	247,684
Region 15 Lower Colorado	2,024	2,888,309	683,077	592,329	2,545,502	473	111,683	70,191	60,187	275,388
Region 16 Great Basin	6,674	3,802,644	1,055,185	1,013,293	2,517,118	1,646	874,565	197,967	187,801	529,734
Region 17 Pacific Northwest	21,815	10,728,150	3,645,281	3,379,933	5,932,747	6,458	2,114,440	611,989	543,281	821,375
Region 18 California	22,077	8,917,933	4,579,369	4,315,708	12,570,891	5,633	1,466,430	557,034	529,037	1,704,943
Region 19 Alaska	195	4,714	849	585	264	101	740	304	222	106
Region 20 Hawaii	1,055	51,466	15,747	11,082	19,346	467	5,125	2,951	2,363	2,072

See footnote(s) at end of table.

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Table 28. Barriers to Making Improvements to Reduce Energy Use or Conserve Water: 2023 (continued)

[Excludes institutional, research, and experimental farms. For meaning of abbreviations and symbols see introductory text.]

Geographic area	Risk of reduced yield or poorer crop quality					Physical field or crop conditions limit system improvements				
	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acres-foot applied ³	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acres-foot applied ³
United States	18,688	17,018,693	6,763,888	6,367,477	10,115,489	15,427	15,881,393	5,008,281	4,666,302	7,439,814
Alabama	115	42,212	18,154	17,730	16,729	102	66,572	17,726	16,956	7,079
Alaska	10	189	122	122	49	5	54	19	19	11
Arizona	226	296,348	158,493	150,187	614,465	295	205,481	149,551	143,945	610,058
Arkansas	253	497,622	425,170	424,880	424,240	294	604,066	488,893	470,769	468,536
California	5,028	1,632,679	1,214,034	1,138,629	3,398,047	2,724	1,323,217	863,300	789,906	2,237,123
Colorado	757	1,227,584	238,713	235,963	339,849	1,188	780,164	220,876	213,990	297,991
Connecticut	30	1,245	262	188	130	34	565	155	99	313
Delaware	45	14,120	10,144	9,794	9,115	29	31,412	13,351	13,351	9,928
Florida	873	121,144	73,491	66,475	118,448	508	99,339	57,292	37,701	47,361
Georgia	366	294,895	161,417	131,468	97,341	240	217,853	111,863	82,496	61,907
Hawaii	143	1,311	1,151	1,131	877	64	(D)	2,065	2,000	(D)
Idaho	752	1,032,625	524,667	511,743	932,751	987	686,911	405,359	383,515	689,716
Illinois	205	264,782	96,426	93,259	73,018	132	130,794	41,407	39,167	19,861
Indiana	207	208,516	75,646	75,483	39,898	140	124,482	41,301	41,253	18,375
Iowa	46	91,196	32,785	32,685	16,520	58	81,016	28,026	27,666	15,976
Kansas	607	2,009,272	485,367	459,843	526,400	263	971,495	175,100	171,052	193,475
Kentucky	45	58,785	6,173	6,154	3,269	47	21,001	14,019	14,019	8,720
Louisiana	253	258,797	167,275	147,237	160,870	158	275,286	167,113	158,249	130,002
Maine	20	6,674	1,697	1,298	481	28	6,830	(D)	1,504	555
Maryland	61	38,244	10,038	9,660	3,822	49	13,257	3,889	3,739	1,880
Massachusetts	57	6,446	2,001	1,370	1,611	77	2,020	812	722	439
Michigan	433	321,615	121,877	114,642	70,043	101	189,155	88,138	80,293	59,830
Minnesota	257	184,023	71,007	70,072	48,220	109	129,329	42,182	41,454	34,464
Mississippi	159	151,816	117,501	116,983	99,137	86	71,644	61,072	60,742	51,061
Missouri	189	178,931	97,015	95,816	100,858	63	57,547	40,766	40,795	35,551
Montana	419	1,198,640	87,564	85,416	91,413	678	1,816,235	208,225	206,185	287,354
Nebraska	1,469	2,603,605	1,147,402	1,113,197	1,039,593	1,005	1,383,112	501,902	489,479	452,331
Nevada	112	40,078	22,522	22,520	77,892	108	185,525	42,041	40,956	126,820
New Hampshire	12	3,104	1,033	319	151	21	1,522	350	149	49
New Jersey	32	11,309	6,828	5,248	2,814	128	16,747	5,560	5,364	2,352
New Mexico	578	35,445	18,314	14,686	24,107	513	76,523	39,826	35,282	87,826
New York	160	29,099	9,608	4,304	2,355	74	14,675	1,465	1,139	(D)
North Carolina	244	93,674	11,551	11,141	9,734	126	14,762	6,715	5,449	3,905
North Dakota	38	101,774	18,738	18,738	12,889	35	116,762	15,502	15,297	14,473
Ohio	118	28,243	10,290	6,937	12,137	55	12,207	5,705	4,962	4,605
Oklahoma	183	280,371	65,342	53,095	69,827	57	32,728	26,290	18,799	34,011
Oregon	842	317,597	149,824	118,516	211,656	963	527,147	139,980	120,632	199,536
Pennsylvania	99	8,337	2,583	894	300	56	11,631	4,071	2,726	1,275
Rhode Island	3	64	(D)	(D)	(D)	8	127	(D)	92	77
South Carolina	65	59,914	19,236	17,545	18,731	36	28,687	14,302	14,301	13,774
South Dakota	76	187,480	33,449	33,353	27,992	163	251,287	79,629	71,779	51,707
Tennessee	139	83,656	19,126	18,351	18,060	62	45,914	13,280	12,140	3,648
Texas	1,185	1,139,780	581,977	501,057	627,255	863	1,381,439	366,033	312,632	312,876
Utah	674	709,454	106,707	105,014	253,493	1,037	739,909	147,966	142,691	273,388
Vermont	9	2,259	(D)	(D)	(D)	23	3,681	336	247	205
Virginia	63	35,320	6,340	6,084	3,764	81	34,206	7,069	4,344	3,432
Washington	708	312,571	176,593	171,067	334,831	982	981,212	154,015	147,439	296,955
West Virginia	6	522	261	261	153	19	(D)	38	38	38
Wisconsin	109	114,086	42,555	40,066	28,852	135	68,504	30,716	29,630	20,073
Wyoming	208	681,240	115,279	106,736	151,245	418	2,041,722	159,630	149,148	242,428
Water Resource Regions										
Region 01 New England	124	17,609	5,093	3,255	2,422	176	11,140	4,409	2,590	1,441
Region 02 Mid-Atlantic	378	114,774	38,352	33,813	21,428	391	93,322	29,956	28,143	18,416
Region 03 South Atlantic-Gulf	1,593	617,859	284,499	245,161	260,942	969	429,286	207,110	153,602	132,397
Region 04 Great Lakes	655	405,326	160,574	142,763	90,480	171	213,178	94,805	85,972	61,994
Region 05 Ohio	323	307,081	58,498	58,051	36,041	214	108,903	27,086	26,563	16,692
Region 06 Tennessee	181	59,988	11,988	11,793	17,037	98	(D)	12,017	11,847	4,030
Region 07 Upper Mississippi	605	522,747	222,105	217,700	156,880	430	370,228	146,179	142,125	92,768
Region 08 Lower Mississippi	656	987,283	786,933	765,355	763,815	427	775,714	606,162	586,600	558,375
Region 09 Souris-Red-Rainy	13	39,599	9,927	9,927	7,139	23	51,044	4,443	4,443	(D)
Region 10 Missouri	2,592	6,640,623	1,697,374	1,632,812	1,639,901	2,590	6,188,344	1,047,843	1,013,079	1,150,828
Region 11 Arkansas-White-Red	853	1,636,520	491,302	461,011	585,859	683	1,281,294	451,996	413,480	447,543
Region 12 Texas-Gulf	1,002	908,930	490,813	418,681	495,006	577	900,571	252,407	217,114	202,953
Region 13 Rio Grande	580	57,079	48,213	46,246	77,782	688	282,170	93,114	88,689	167,705
Region 14 Upper Colorado	613	769,074	114,564	112,124	195,846	815	466,043	132,069	125,518	184,658
Region 15 Lower Colorado	263	313,635	175,555	162,992	673,611	335	230,376	174,219	164,186	687,758
Region 16 Great Basin	575	253,560	97,559	96,238	252,325	1,026	959,520	184,165	178,717	372,103
Region 17 Pacific Northwest	2,497	1,740,304	863,355	818,734	1,493,838	3,003	2,087,745	671,086	629,628	1,129,907
Region 18 California	5,032	1,625,202	1,205,911	1,129,568	3,344,212	2,742	1,388,709	867,131	791,987	2,201,511
Region 19 Alaska	10	189	122	122	49	5	54	19	19	11
Region 20 Hawaii	143	1,311	1,151	1,131	877	64	(D)	2,065	2,000	(D)

See footnote(s) at end of table.

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Table 28. Barriers to Making Improvements to Reduce Energy Use or Conserve Water: 2023 (continued)

[Excludes institutional, research, and experimental farms. For meaning of abbreviations and symbols see introductory text.]

Geographic area	Improvements will not reduce costs enough to cover implementation costs					Cannot finance improvements				
	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acre-feet applied ³	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acre-feet applied ³
United States	30,969	33,842,892	11,657,285	10,989,319	17,165,341	39,224	31,769,891	9,226,689	8,636,826	14,084,376
Alabama	311	155,662	48,608	45,630	28,160	248	78,733	30,647	27,342	29,267
Alaska	12	129	119	119	53	59	599	316	162	82
Arizona	329	256,438	159,488	144,382	654,536	626	437,589	172,719	160,323	657,687
Arkansas	581	1,043,816	948,093	920,363	1,010,598	585	982,831	833,539	802,832	896,312
California	5,972	2,497,026	1,783,978	1,677,080	4,943,394	6,964	2,140,534	1,537,939	1,401,889	4,160,703
Colorado	1,935	1,771,610	477,550	459,237	763,788	3,169	1,940,754	502,432	481,058	757,798
Connecticut	47	8,049	2,059	405	536	104	4,726	1,166	861	1,814
Delaware	72	40,523	22,461	21,573	12,828	54	23,039	9,494	9,071	7,313
Florida	757	679,856	205,109	183,959	218,103	1,322	185,114	113,837	109,037	100,679
Georgia	585	518,702	221,500	212,074	157,425	552	196,088	70,132	59,657	57,205
Hawaii	209	13,816	4,732	2,879	7,073	349	8,261	6,429	5,160	9,766
Idaho	1,768	1,544,909	792,189	765,771	1,371,214	2,338	1,188,960	537,016	523,588	921,100
Illinois	303	398,511	106,686	104,042	55,944	270	130,000	32,764	31,850	20,259
Indiana	179	266,765	94,957	88,223	38,470	170	112,358	29,515	29,456	16,668
Iowa	123	116,913	43,979	43,979	26,034	61	915	380	280	135
Kansas	658	2,012,869	509,935	484,942	546,615	581	1,741,475	362,265	348,123	346,839
Kentucky	178	65,668	22,989	19,086	11,999	216	58,317	10,517	4,871	1,970
Louisiana	249	323,360	212,742	201,683	176,611	294	283,716	156,366	148,320	125,295
Maine	66	8,941	804	474	124	202	47,754	5,391	5,168	975
Maryland	108	56,005	22,260	20,879	9,565	133	25,940	13,254	12,944	6,224
Massachusetts	183	9,294	4,108	2,236	1,685	292	13,963	4,502	3,271	1,940
Michigan	788	656,238	236,364	213,738	130,441	770	227,711	80,843	75,509	44,557
Minnesota	350	298,027	133,339	132,167	95,713	374	175,536	77,550	75,928	59,811
Mississippi	194	221,785	170,048	157,007	102,345	315	318,168	237,242	213,638	180,675
Missouri	361	531,963	373,301	363,150	336,749	380	280,517	280,560	205,526	221,022
Montana	1,211	3,603,536	272,474	264,165	341,880	1,652	4,140,885	394,152	384,300	456,627
Nebraska	2,445	5,155,245	1,734,489	1,708,723	1,484,114	2,040	4,792,281	1,078,206	1,047,865	1,037,359
Nevada	257	352,693	195,269	194,626	604,340	402	592,350	164,042	159,194	480,479
New Hampshire	69	4,496	1,527	714	400	53	3,864	336	152	97
New Jersey	125	44,343	16,058	15,320	8,684	285	49,649	19,766	14,838	8,461
New Mexico	803	460,139	100,064	92,929	203,451	1,261	345,832	97,940	71,260	147,135
New York	157	54,336	8,899	8,504	5,042	349	26,012	4,525	2,981	2,048
North Carolina	342	119,312	25,788	22,129	14,447	445	152,460	52,190	28,171	18,977
North Dakota	80	283,891	55,989	55,586	39,285	71	204,475	44,627	43,767	32,593
Ohio	147	46,417	12,648	12,171	9,223	206	10,761	3,735	2,563	1,328
Oklahoma	196	574,887	124,972	109,211	189,369	311	607,322	46,406	44,698	52,344
Oregon	2,141	1,986,273	396,765	302,580	512,073	2,346	2,169,594	351,363	299,299	481,519
Pennsylvania	146	22,900	6,224	4,555	3,708	259	33,651	7,056	4,954	4,400
Rhode Island	29	1,126	533	507	488	36	1,215	663	499	451
South Carolina	99	126,752	29,890	29,384	30,385	303	26,283	14,287	9,732	8,658
South Dakota	268	336,280	86,014	78,130	50,186	173	105,050	20,161	20,161	13,332
Tennessee	108	107,968	30,414	30,024	12,206	229	143,727	34,961	32,210	13,209
Texas	1,557	2,967,325	1,028,093	912,700	1,251,209	1,963	2,868,116	849,085	770,358	929,664
Utah	1,640	731,522	179,895	176,655	440,848	2,704	1,243,323	368,061	354,284	751,324
Vermont	40	4,223	585	175	158	80	4,761	575	253	177
Virginia	166	68,911	11,880	8,070	3,839	260	42,833	8,892	4,472	2,515
Washington	1,541	1,097,084	345,868	327,890	707,601	1,774	404,919	239,349	230,099	515,180
West Virginia	29	1,354	546	354	72	73	1,006	420	420	214
Wisconsin	329	272,259	113,702	103,900	140,061	438	236,586	99,517	94,475	81,777
Wyoming	726	1,922,745	281,301	265,239	412,267	1,083	2,959,338	291,559	279,957	418,412
Water Resource Regions										
Region 01 New England	422	37,982	9,123	4,380	3,251	703	71,852	12,090	9,983	5,306
Region 02 Mid-Atlantic	676	224,613	80,099	74,741	41,764	1,095	170,402	56,232	46,871	29,711
Region 03 South Atlantic-Gulf	2,069	1,553,809	509,648	471,027	435,654	2,913	661,802	287,062	236,657	215,912
Region 04 Great Lakes	1,002	789,792	287,488	261,914	164,338	1,038	266,736	95,562	88,445	48,809
Region 05 Ohio	494	367,816	78,899	68,578	35,211	670	152,350	26,101	21,392	11,259
Region 06 Tennessee	160	92,998	33,244	31,105	15,372	299	32,161	5,275	4,584	1,750
Region 07 Upper Mississippi	1,012	941,504	373,859	361,450	298,429	1,129	550,775	217,063	209,582	168,636
Region 08 Lower Mississippi	945	1,835,112	1,487,050	1,437,878	1,385,474	1,022	1,680,007	1,304,137	1,245,899	1,266,526
Region 09 Souris-Red-Rainy	61	149,557	29,181	29,181	19,070	30	71,305	19,068	18,968	11,959
Region 10 Missouri	5,103	11,866,575	2,610,078	2,533,696	2,557,327	5,347	12,040,200	1,916,543	1,857,732	2,077,733
Region 11 Arkansas-White-Red	1,483	3,651,203	1,322,599	1,241,001	1,683,554	1,825	3,369,766	848,087	805,899	1,029,298
Region 12 Texas-Gulf	1,263	2,133,653	597,887	527,834	638,870	1,576	1,780,185	537,126	475,697	472,640
Region 13 Rio Grande	697	322,078	128,679	124,944	285,484	1,469	500,081	231,768	198,111	356,418
Region 14 Upper Colorado	1,466	1,151,683	200,885	180,294	294,491	2,459	1,743,670	300,955	290,194	464,867
Region 15 Lower Colorado	495	332,918	222,446	187,494	864,069	724	493,515	225,433	196,637	875,503
Region 16 Great Basin	1,799	1,147,871	387,365	383,419	1,063,458	2,723	1,760,115	499,179	481,840	1,155,813
Region 17 Pacific Northwest	5,589	4,760,094	1,546,574	1,413,291	2,584,802	6,785	4,241,737	1,115,571	1,046,900	1,864,139
Region 18 California	6,012	2,469,689	1,747,330	1,654,094	4,787,599	7,009	2,174,372	1,522,692	1,396,113	4,018,246
Region 19 Alaska	12	129	119	119	53	59	599	316	162	82
Region 20 Hawaii	209	13,816	4,732	2,879	7,073	349	8,261	6,429	5,160	9,766

See footnote(s) at end of table.

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Table 28. Barriers to Making Improvements to Reduce Energy Use or Conserve Water: 2023 (continued)

[Excludes institutional, research, and experimental farms. For meaning of abbreviations and symbols see introductory text.]

Geographic area	Landlord will not share in cost					Uncertainty about future availability of water				
	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acre-feet applied ³	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acre-feet applied ³
United States	8,604	18,744,056	7,578,796	7,168,245	10,599,178	22,164	25,924,013	7,225,090	6,712,674	11,733,808
Alabama	59	136,530	20,910	20,310	10,508	75	50,498	16,053	13,729	13,187
Alaska	12	169	(D)	(D)	(D)	9	18	11	11	11
Arizona	216	297,301	225,333	209,924	880,074	455	228,545	157,855	123,484	455,229
Arkansas	447	1,199,463	1,067,920	1,040,961	1,173,457	102	167,481	151,436	144,458	186,545
California	1,022	1,038,061	768,102	711,676	2,204,241	4,884	3,832,853	1,809,389	1,698,260	4,978,459
Colorado	353	437,105	219,169	217,279	383,814	2,518	3,323,850	704,334	683,912	1,091,117
Connecticut	1	(D)	(D)	(D)	(D)	12	389	84	57	64
Delaware	24	25,602	12,742	12,556	7,534	12	13,759	6,324	6,324	4,176
Florida	102	71,654	45,124	45,124	47,251	163	96,087	23,611	23,131	29,686
Georgia	218	259,082	127,448	125,234	99,017	308	273,678	97,188	94,704	62,927
Hawaii	48	8,752	4,475	4,455	10,128	96	29,498	1,982	832	829
Idaho	498	803,829	511,951	498,607	960,280	1,081	934,603	338,672	328,389	592,944
Illinois	89	230,890	71,777	71,777	30,745	19	87,980	8,836	8,836	4,721
Indiana	139	188,623	65,100	63,830	35,347	1	(D)	(D)	(D)	(D)
Iowa	16	52,815	23,750	23,750	11,143	37	34,755	6,483	6,483	4,869
Kansas	421	1,628,566	398,283	382,489	394,296	762	2,753,543	669,300	605,811	649,419
Kentucky	28	70,882	21,931	19,100	10,283	15	3,504	242	92	124
Louisiana	345	709,436	385,333	344,857	380,321	89	49,812	30,824	26,652	32,917
Maine	1	(D)	(D)	(D)	(D)	12	3,597	(D)	(D)	(D)
Maryland	17	20,314	8,570	7,760	3,695	27	11,869	2,864	2,864	1,099
Massachusetts	50	2,357	1,709	831	477	47	712	357	330	170
Michigan	84	260,883	94,836	92,236	57,397	141	39,841	20,173	19,316	12,753
Minnesota	99	177,936	67,081	67,081	40,699	108	80,582	28,676	27,656	15,527
Mississippi	198	377,891	305,299	290,159	231,157	61	62,141	60,586	58,666	49,580
Missouri	105	157,695	106,169	106,169	101,043	7	7,965	7,539	7,539	9,661
Montana	224	774,719	156,816	153,645	205,238	783	2,233,030	218,365	209,477	260,507
Nebraska	1,318	2,966,384	1,452,207	1,421,646	1,431,477	708	2,747,560	518,782	511,909	361,590
Nevada	11	66,429	40,374	39,929	130,759	185	57,293	34,344	33,169	113,879
New Hampshire	4	8	8	8	6	9	57	43	(D)	(D)
New Jersey	32	18,833	6,719	4,934	1,642	4	1,400	1,204	1,204	(D)
New Mexico	139	62,843	19,645	18,452	59,858	1,899	599,078	138,648	128,227	277,764
New York	8	3,057	736	187	219	65	18,794	7,832	7,048	929
North Carolina	65	36,825	11,048	7,209	10,996	77	11,941	5,315	4,616	3,744
North Dakota	43	184,061	44,291	44,211	34,375	14	53,178	11,388	11,308	11,331
Ohio	2	(D)	(D)	(D)	(D)	24	2,808	1,296	1,296	720
Oklahoma	113	464,144	95,631	92,931	165,791	91	82,709	25,038	23,238	28,579
Oregon	384	592,852	159,985	132,043	216,876	1,931	1,046,815	341,603	282,954	478,291
Pennsylvania	4	(D)	112	72	28	25	4,080	(D)	(D)	589
Rhode Island	5	376	376	376	(D)	11	220	49	47	53
South Carolina	13	37,500	14,678	10,778	10,060	27	6,684	6,324	2,424	1,518
South Dakota	151	161,568	54,072	46,242	35,558	35	33,146	4,174	4,174	5,206
Tennessee	15	56,152	20,105	20,105	6,865	17	3,196	17	17	12
Texas	449	3,356,789	501,850	401,207	481,235	2,402	4,475,153	1,379,034	1,246,421	1,444,161
Utah	354	44,297	30,707	27,335	46,006	1,379	330,674	117,865	106,673	183,455
Vermont	6	(D)	(D)	(D)	11	14	585	(D)	14	3
Virginia	26	14,134	4,137	1,435	530	65	16,309	3,331	1,839	675
Washington	320	520,467	233,871	221,099	443,720	604	157,329	100,130	96,794	163,436
West Virginia	9	321	153	153	64	10	(D)	40	22	10
Wisconsin	102	147,762	67,184	64,808	48,631	84	17,470	1,200	1,016	2,468
Wyoming	215	1,075,131	104,652	102,442	194,778	660	1,932,718	161,408	152,442	197,269
Water Resource Regions										
Region 01 New England	61	3,079	2,367	1,489	1,964	91	4,975	1,574	1,480	721
Region 02 Mid-Atlantic	104	70,406	29,707	26,399	13,530	154	58,255	21,502	19,675	7,422
Region 03 South Atlantic-Gulf	413	441,405	209,119	195,886	172,918	641	407,369	142,609	132,722	109,370
Region 04 Great Lakes	155	325,319	129,403	124,867	85,556	180	46,718	20,836	19,772	13,056
Region 05 Ohio	151	326,920	64,744	61,763	26,015	104	75,622	7,169	6,736	2,177
Region 06 Tennessee	48	111,470	(D)	(D)	(D)	45	35,995	6,040	6,040	1,835
Region 07 Upper Mississippi	257	415,396	183,708	181,318	104,245	180	110,428	27,071	25,867	19,262
Region 08 Lower Mississippi	978	2,194,533	1,718,908	1,645,143	1,738,037	199	262,290	232,554	222,109	252,232
Region 09 Souris-Red-Rainy	18	119,668	22,540	22,540	15,190	16	14,384	9,280	9,280	3,088
Region 10 Missouri	2,162	5,825,875	2,020,684	1,971,466	2,189,684	2,708	9,581,140	1,290,157	1,228,271	1,307,705
Region 11 Arkansas-White-Red	661	2,093,904	757,833	689,109	825,803	1,727	3,963,291	1,075,381	981,525	1,267,121
Region 12 Texas-Gulf	278	618,992	284,687	248,960	265,533	1,847	3,005,027	970,100	888,422	980,650
Region 13 Rio Grande	330	2,580,240	112,410	87,121	190,643	2,026	531,206	255,138	248,263	468,019
Region 14 Upper Colorado	52	159,992	31,722	31,722	44,560	1,541	1,174,654	225,233	212,781	326,009
Region 15 Lower Colorado	220	333,301	261,333	230,344	994,074	493	230,959	158,244	123,856	455,667
Region 16 Great Basin	392	165,844	83,739	79,922	190,533	1,283	358,481	119,436	108,472	232,285
Region 17 Pacific Northwest	1,219	1,924,155	902,235	852,933	1,623,755	3,725	2,087,037	786,177	723,104	1,216,656
Region 18 California	1,045	1,024,636	745,812	699,486	2,101,966	5,099	3,946,666	1,874,596	1,753,456	5,069,692
Region 19 Alaska	12	169	(D)	(D)	(D)	9	18	11	11	11
Region 20 Hawaii	48	8,752	4,475	4,455	10,128	96	29,498	1,982	832	829

See footnote(s) at end of table.

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Table 28. Barriers to Making Improvements to Reduce Energy Use or Conserve Water: 2023 (continued)

[Excludes institutional, research, and experimental farms. For meaning of abbreviations and symbols see introductory text.]

Geographic area	Will not be farming this operation long enough to justify improvements					Improvements will increase management time or cost				
	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acre-feet applied ³	Farms	Land in farms (acres) (see text)	Acres Equipped (see text)	Acres irrigated ³	Acre-feet applied ³
United States	14,544	9,221,345	2,891,845	2,704,042	4,255,988	13,729	13,137,730	4,480,536	4,158,248	6,507,767
Alabama	40	5,553	1,460	(D)	(D)	181	44,662	17,429	14,316	20,730
Alaska	46	3,173	104	(D)	(D)	9	99	18	16	11
Arizona	281	1,640,041	116,411	104,240	455,469	96	60,296	54,982	54,433	206,170
Arkansas	183	293,208	264,334	259,035	311,756	255	564,270	520,548	504,297	585,581
California	2,548	520,141	445,410	418,344	1,195,790	3,121	1,286,908	832,781	774,074	2,195,925
Colorado	747	737,936	144,876	123,631	193,568	859	1,088,178	140,351	139,058	222,427
Connecticut	30	1,121	228	228	260	31	2,026	450	301	147
Delaware	28	22,990	10,923	10,811	5,982	28	11,489	7,763	7,417	3,381
Florida	946	123,179	75,466	72,646	100,180	415	187,699	57,740	51,968	61,881
Georgia	151	78,925	16,354	16,354	8,826	308	450,036	237,455	206,768	341,862
Hawaii	39	202	180	148	158	173	5,916	2,280	2,215	6,079
Idaho	784	317,365	183,399	180,911	325,694	675	362,128	158,841	158,516	268,415
Illinois	105	55,765	26,299	25,655	19,823	157	123,332	58,189	56,931	45,075
Indiana	205	115,405	33,045	32,501	18,117	76	83,059	23,590	23,582	14,239
Iowa	128	85,654	21,653	20,320	10,558	22	176	22	22	2
Kansas	251	500,329	72,335	67,197	69,783	285	447,233	118,905	105,971	102,856
Kentucky	119	13,465	1,980	1,246	451	127	28,416	12,627	12,446	7,959
Louisiana	83	55,670	22,165	22,152	16,982	144	194,002	108,695	94,461	128,439
Maine	11	2,280	353	198	97	12	3,624	646	341	126
Maryland	61	22,321	10,002	9,640	3,773	59	25,249	10,889	10,806	5,035
Massachusetts	132	3,284	1,401	1,030	826	121	13,929	4,662	2,806	724
Michigan	450	238,445	156,016	137,523	68,766	330	223,293	114,667	111,208	90,651
Minnesota	169	82,212	29,627	29,611	17,722	143	121,446	65,613	64,242	51,949
Mississippi	103	152,477	123,783	121,847	110,759	186	269,345	219,324	218,540	170,820
Missouri	113	79,429	50,387	49,547	52,908	180	331,081	298,253	296,934	279,056
Montana	464	808,231	65,211	61,185	76,241	446	1,524,172	95,650	95,179	136,552
Nebraska	630	767,097	259,518	249,548	237,089	557	2,254,507	357,476	348,086	336,532
Nevada	108	45,140	31,929	28,400	93,938	35	47,268	26,546	26,544	102,429
New Hampshire	26	574	104	26	10	22	1,402	40	40	13
New Jersey	155	9,869	6,392	4,951	2,946	105	16,027	4,611	4,611	2,917
New Mexico	513	235,738	17,791	14,257	25,348	304	235,640	23,181	22,081	56,458
New York	173	14,271	9,604	3,767	2,185	150	20,117	8,023	6,956	1,715
North Carolina	123	27,037	8,398	4,984	3,995	60	27,109	6,957	5,157	3,392
North Dakota	31	41,252	3,691	3,581	1,671	54	193,788	28,007	28,007	20,821
Ohio	210	8,238	3,398	3,338	2,181	101	21,253	5,974	5,537	2,779
Oklahoma	106	690,694	98,891	97,891	89,642	124	130,926	30,909	30,619	39,590
Oregon	908	251,743	75,465	60,537	108,169	800	325,094	140,634	114,225	196,339
Pennsylvania	112	17,023	1,433	994	510	95	3,609	1,271	1,100	787
Rhode Island	26	774	113	111	81	14	626	61	31	25
South Carolina	110	38,645	18,857	14,957	11,673	71	62,468	19,038	18,532	20,046
South Dakota	166	150,568	43,237	43,141	27,908	126	703,952	40,873	32,947	18,803
Tennessee	113	45,477	10,707	10,665	2,938	80	67,491	16,445	16,394	6,545
Texas	761	499,996	246,609	229,636	258,721	777	682,150	369,701	264,811	363,626
Utah	850	59,569	35,944	33,772	49,684	548	375,116	58,041	56,409	139,710
Vermont	29	1,061	89	55	22	49	2,607	189	118	59
Virginia	68	44,650	7,096	2,930	824	130	55,723	16,148	9,615	5,565
Washington	783	142,650	87,107	85,769	164,553	596	104,606	77,490	76,926	147,543
West Virginia	-	-	-	-	-	65	3,779	222	222	96
Wisconsin	86	28,680	9,950	8,146	7,041	87	41,702	12,601	12,232	6,156
Wyoming	240	141,798	42,120	35,088	99,159	340	308,706	73,728	70,290	89,726
Water Resource Regions										
Region 01 New England	230	8,058	2,204	1,598	1,278	227	27,828	5,980	3,565	1,051
Region 02 Mid-Atlantic	506	125,433	43,827	32,244	15,783	436	79,867	38,200	37,170	17,760
Region 03 South Atlantic-Gulf	1,366	275,917	121,027	110,811	125,989	1,062	786,167	342,763	297,744	448,378
Region 04 Great Lakes	714	264,106	164,794	145,037	73,453	472	264,005	128,696	124,227	96,094
Region 05 Ohio	432	114,987	32,229	31,510	17,335	353	122,264	39,452	35,504	36,246
Region 06 Tennessee	97	19,298	6,138	(D)	(D)	129	4,848	552	492	147
Region 07 Upper Mississippi	401	187,274	64,459	60,986	45,159	415	261,451	112,348	109,488	75,911
Region 08 Lower Mississippi	325	496,927	394,551	389,953	398,230	580	1,283,940	1,076,320	1,053,209	1,080,493
Region 09 Souris-Red-Rainy	34	14,770	9,362	9,362	3,126	35	92,818	25,921	25,921	20,895
Region 10 Missouri	1,727	1,967,587	487,736	465,026	560,209	1,647	5,429,964	640,407	619,394	698,534
Region 11 Arkansas-White-Red	504	1,355,236	241,721	232,962	261,858	543	828,065	390,047	321,169	349,721
Region 12 Texas-Gulf	690	437,503	219,934	211,057	215,948	608	355,468	192,797	136,396	222,449
Region 13 Rio Grande	514	202,652	38,816	27,961	60,494	424	103,007	36,166	34,626	52,000
Region 14 Upper Colorado	484	328,525	61,555	39,701	56,945	682	646,125	76,263	73,701	115,859
Region 15 Lower Colorado	315	1,641,529	116,494	104,300	455,505	108	285,045	71,476	69,070	251,302
Region 16 Great Basin	865	95,201	64,688	59,010	140,002	472	412,617	81,029	79,417	238,295
Region 17 Pacific Northwest	2,661	1,124,806	370,856	352,530	618,326	2,234	864,417	390,090	367,043	630,418
Region 18 California	2,594	558,161	451,170	423,604	1,204,696	3,120	1,283,819	829,731	767,881	2,166,124
Region 19 Alaska	46	3,173	104	(D)	(D)	9	99	18	16	11
Region 20 Hawaii	39	202	180	148	158	173	5,916	2,280	2,215	6,079

¹ Data include only positive responses and respondents could choose more than one source of information.

² Total may not add due to rounding.

³ Acres irrigated and acre-feet applied are totals for all irrigation on these farms.