

TABLE 23

Companies with domestic R&D paid for by the company and others and performed by the company in the energy application area, by industry and company size: 2019

(Millions of U.S. dollars and number)

Industry and company size	NAICS code	Domestic R&D		Energy R&D							
				Total		Paid for by the company		Paid for by others			
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount		
All industries	21-23, 31-33, 42-81	28,270	492,956	3,880	i 26,162	i 3,450	i 24,054	i 640	i 2,108	i	
Manufacturing industries	31-33	15,180	285,674	2,840	i 20,925	i 2,670	i 19,780	i 310	i 1,145		
Food	311	870	4,180	70	i 40	i 60	i 39	i 10		1	
Beverage and tobacco products	312	350	1,082	20		5	20	5	0	0	
Textile, apparel, and leather products	313-16	240	904	20	i 99	20	i 99	0		0	
Wood products	321	80	186	20	i 4	i 20	i 4	0		0	
Paper	322	90	1,064	20	i 43	i 20	i 43	0		0	
Printing and related support activities	323	200	420	i 10	i 1	i 10	i 1	0		0	
Petroleum and coal products	324	80	1,306	20	405 - 421	20	406	10	i 0 - 14		
Chemicals	325	2,330	97,063	250	i 542	240	i 479	20		64	
Basic chemicals	3251	240	2,360	110	i 319	110	i 308	10		12	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	180	1,172	40	i 53	40	i 53	0		0	
Pesticide, fertilizer, and other agricultural chemicals	3253	150	1,822 - 1,846	10		17	10	*	10	17	
Pharmaceuticals and medicines	3254	1,060	87,619	10		44	10	16	10	i 27	
Soap, cleaning compound, and toilet preparation	3256	270	2,760	20	i 42	20	i 42	0		0	
Paint, coating, adhesive, and other chemicals	3255, 3259	460	1,305 - 1,333	80	i 68	80	i 59	10		8	
Plastics and rubber products	326	790	2,856	120	i 250	120	i 250	10	i 1	i	
Nonmetallic mineral products	327	170	1,508	i 30	i 169	30	i 169	0		0	
Primary metals	331	200	665	70	i 72	70	i 72	10		*	
Fabricated metal products	332	1,840	2,885	290	i 482	290	i 457	10		25	
Machinery	333	2,240	15,184	620	i 2,529	570	i 2,340	80	i 189		
Agricultural implement	33311	190	1,921	30	i 53	30	i 53	10		*	
Semiconductor machinery	333242	80	4,459	10		13	10	13	0	0	
Engine, turbine, and power transmission equipment	3336	110	1,301	70	i 808	70	i 713	20		95	
Other machinery	other 333	1,880	7,503	530	i 1,655	480	i 1,561	60	i 94		
Computer and electronic products	334	2,280	86,729	610	i 8,580	i 570	i 8,218	i 100	i 362	i	
Communications equipment	3342	300	12,595	70	i 264	70	i 262	10	i 2		
Semiconductor and other electronic components	3344	640	35,183	i 190	i 5,399	i 160	i 5,210	i 50	i 189	i	
Navigational, measuring, electromedical, and control instruments	3345	1,140	17,562	300	i 2,138	280	i 1,979	50	i 159	i	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	230	3,342	10		1	10	1	0	0	

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Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	190	9,662	40	i 1,144	40	i 1,000	10	i 144	i	
Other measuring and controlling device	other 3345	740	4,558	270	i 993	i 250	i 977	i 50	i 16		
Other computer and electronic products	other 334	220	21,388	70	i 779	70	i 767	10		12	
Electrical equipment, appliances, and components	335	900	5,263	480	i 1,729	460	i 1,656	40	i 74		
Transportation equipment	336	1,090	45,375	130	i 5,741	i 110	i 5,328	i 40		413	
Motor vehicles, bodies, trailers, and parts	3361-63	540	24,117	80	i 5,371	i 70	i 4,978	i 30		393	
Aerospace products and parts	3364	380	i 18,358	i 30	i 288	i 30	i 269	i 10		19	
Aircraft, aircraft engine, and aircraft parts	336411-13	200	i 16,891	i 20	i 284	i 20	i 267	i 10		17	
Guided missile, space vehicle, and related parts	336414-15, 336419	190	i 1,467	10	4	10	i 2	i 10		2	
Military armored vehicle, tank, and tank component	336992	30	35	10	1	0	0	10		1	
Other transportation	other 336	150	2,865	30	i 81	i 30	i 81	i 10		*	
Furniture and related products	337	190	409	20	i 10	i 20	i 10	i 0		0	
Miscellaneous	339	1,310	18,596	120	211 - 226	90	205	40	i 6 - 21		
Medical equipment and supplies	3391	790	16,014	80	i 76	50	70	40	i 7	i	
Other miscellaneous manufacturing	3399	520	2,582	40	135 - 150	40	136	10		0 - 14	
Nonmanufacturing industries	21-23, 42-81	13,100	207,283	1,040	i 5,236	780	i 4,274	340	i 963	i	
Mining, quarrying, oil and gas extraction, and support activities	21	160	2,717	50	i 2,146	40	i 2,073	10	i 72	i	
Utilities	22	40	275	40	267	40	231	10		36	
Wholesale trade	42	1,560	1,191	60	i 31	i 60	i 31	i 0		0	
Electronic shopping and electronic auctions	454111-12	60	3,131 - 15,818	i 0	0	0	0	0		0	
Transportation and warehousing	48-49	130	9,890	i 10	i 165	i 10	i 165	i 0		0	
Information	51	3,090	110,227	140	815	140	684	10		132	
Publishing	511	1,080	33,019	70	i 579	70	i 447	10		131	
Newspaper, periodical, book, and directory publishers	5111	40	61	0	0	0	0	0		0	
Software publishers	5112	1,040	32,958	70	i 579	70	i 447	10		131	
Telecommunications	517	210	3,733	10	48	10	48	0		0	

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Data processing, hosting, and related services	518	1,480	30,558	60	172	60	172	10	1
Other information	other 51	340	42,917	10	17	10	17	0	0
Finance and insurance	52	220	8,917	0	0	0	0	0	0
Real estate and rental and leasing	53	50	1,371	0	0	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	20	45	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	30	1,326	0	0	0	0	0	0
Professional, scientific, and technical services	54	6,500	53,233	710	1,510	460	790	320	720
Architectural, engineering, and related services	5413	1,450	4,207	310	639	240	377	90	263
Computer systems design and related services	5415	3,020	21,046	40	89	40	87	10	2
Scientific research and development services	5417	1,230	21,669	330	698	150	247	220	450
Research and development in biotechnology	541711	310	6,457	30	14	10	2	30	12
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	900	14,446	310	676	150	246	200	431
Research and development in the social sciences and humanities	541720	30	766	10	7	0	0	10	7
Other professional, scientific, and technical services	other 54	810	6,312	40	84	30	80	20	5
Health care services	621-23	680	2,265	0	0	0	0	0	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	680	1,380 - 14,067	70	302	70	299	10	2
All companies (number of domestic employees)	-	28,270	492,956	3,880	26,162	3,450	24,054	640	2,108
Small companies									
10-19 ^c	-	5,490	5,501	760	328	610	220	190	107
20-49	-	7,980	12,418	860	689	730	553	180	136
Medium companies									
50-99	-	4,960	14,021	620	808	580	706	60	102
100-249	-	4,580	19,793	700	1,159	640	1,021	100	138
Large companies									
250-499	-	2,140	18,883	290	839	270	746	30	93

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500–999	–	1,230	23,969	190	1,483	180	1,357	30	i	126
1,000–4,999	–	1,330	75,671	310	3,391	300	3,140	40		251 i
5,000–9,999	–	240	50,811	80	2,978	80	2,679	20		299 i
10,000–24,999	–	220	88,263	60	5,578	60	5,128	20	i	450
25,000 or more	–	130	183,626	40	8,908	40	8,502	20	i	406 i

* = amount < \$500,000; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a Beginning in survey year 2018, these statistics include an adjustment to the weight to account for unit nonresponse; beginning in survey year 2019, these company count estimates reflect a change in rounding methodology.^b Beginning in survey year 2018, these statistics include an adjustment to the weight to account for unit nonresponse; beginning in survey year 2019, these company count estimates reflect a change in rounding methodology. These company count estimates also reflect an imputation process implemented for survey year 2014. This change has affected the comparability of these company count estimates with estimates published for years prior to 2014.^c The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates with estimates published for years prior to 2018. Companies could report R&D in one, more than one, or no application area. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2019.