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**Federal Government expenditure on science, research and development, by funding areas and funding priorities<sup>12</sup>**

		Millions of €			
Funding area Funding priority		ACTUAL			
		2016		2017	
		Total	Of which, R&D	Total	Of which, R&D
<b>A</b>	<b>Health research and health industry</b>	2,543.3	2,280.6	2,714.4	2,427.4
AA	Health research and health industry	2,470.4	2,262.2	2,623.4	2,404.6
AB	Radiation protection	72.9	18.4	91.0	22.8
<b>B</b>	<b>Bioeconomy</b>	261.8	261.4	279.9	279.3
<b>C</b>	<b>Civil security research</b>	102.3	98.0	138.7	135.1
<b>D</b>	<b>Nutrition, agriculture and consumer protection</b>	809.2	670.5	895.0	738.7
DA	Nutrition	55.9	30.3	56.6	31.9
DB	Sustainable agricultural economy and rural areas	504.2	452.3	562.8	491.5
DC	Health and economic consumer protection	249.2	187.9	275.6	215.3
<b>E</b>	<b>Energy research and energy technologies</b>	1,616.4	1,281.3	1,630.4	1,303.6
EA	Efficient energy conversion	570.7	568.9	611.3	609.4
EB	Renewable energy	436.6	435.4	414.2	412.8
EC	Nuclear safety and waste management	226.5	133.2	191.7	136.7
ED	Decommissioning of nuclear facilities	246.1	8.3	276.5	8.8
EF	Fusion research	136.4	135.6	136.6	136.0
<b>F</b>	<b>Climate, environment, sustainability</b>	1,431.1	1,217.8	1,542.7	1,312.4
FA	Climate, climate protection; global change	253.1	247.7	286.4	276.9
FB	Coast, marine and polar research, geosciences	502.4	447.8	527.8	474.7
FC	Environmental and sustainability research	414.5	320.8	443.0	342.0
FD	Ecology, nature conservation, sustainable use	261.1	201.4	285.5	218.7
<b>G</b>	<b>Information and communication technologies</b>	750.9	715.8	896.5	801.1
GA	Software systems; knowledge technologies	206.7	205.0	261.1	254.8
GB	Communication technologies and services	137.1	135.3	161.4	159.7
GC	Electronic, electronic systems	262.9	259.5	314.2	261.4
GD	Microsystems technology	40.8	39.9	40.8	39.9
GE	Multimedia - development of convergent information and communication technology	103.4	76.1	119.1	85.4
<b>H</b>	<b>Vehicle and traffic technologies including maritime technologies</b>	361.0	254.8	385.0	268.3
HA	Vehicle and traffic technologies	306.1	211.7	323.1	218.8
HB	Maritime technologies	54.9	43.1	61.9	49.5
<b>I</b>	<b>Aerospace</b>	1,618.5	1,615.9	1,670.6	1,667.8
IA	Aviation	271.7	271.3	291.4	291.0
IB	National space research and space technology	547.1	546.3	616.4	615.5
IC	European Space Agency (ESA)	799.7	798.3	762.8	761.3
<b>J</b>	<b>Research and development to improve working conditions and in the service sector</b>	149.3	90.5	172.2	110.8
JA	Research to improve working conditions	112.8	58.8	129.6	73.1
JB	Research in the service sector	36.5	31.7	42.6	37.6
<b>K</b>	<b>Nanotechnologies and materials technologies</b>	679.4	658.3	734.5	709.9
KA	Nanotechnologies	266.4	261.2	269.3	263.7
KB	Materials technologies	413.0	397.1	465.3	446.1
<b>L</b>	<b>Optical technologies</b>	214.3	209.2	225.1	219.4
<b>M</b>	<b>Production technologies</b>	236.0	233.5	243.8	240.6
<b>N</b>	<b>Regional planning and urban development; construction research</b>	110.3	109.0	120.0	117.1
NA	Regional planning, urban development, housing	31.0	31.0	31.5	31.4
NB	Construction research	79.3	77.9	88.6	85.7

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**Federal Government expenditure on science, research and development, by funding areas and funding priorities<sup>12</sup>**

Millions of €					
Funding area Funding priority		ACTUAL			
		2016		2017	
		Total	Of which, R&D	Total	Of which, R&D
<b>O</b>	<b>Innovations in education</b>	905.0	438.3	1,014.9	522.9
OA	Educational reporting, international assessments	453.7	162.1	499.5	188.6
OB	Educational research	433.7	258.5	483.2	302.2
OC	New media in education	17.6	17.6	32.1	32.1
<b>P</b>	<b>Humanities; economics and social sciences</b>	1,396.9	1,084.6	1,478.5	1,128.5
PA	Humanities research	875.0	591.8	932.4	610.8
PB	Social scientific research	265.4	238.8	268.0	242.3
PC	Economic and finance scientific research	95.2	95.2	94.2	94.2
PD	Infrastructures	161.3	158.8	183.8	181.2
<b>Q</b>	<b>Innovation funding for SMEs</b>	1,134.3	1,124.3	1,077.0	1,064.9
QA	Start-up support	91.8	91.8	86.4	86.4
QB	Technology support for SMEs	687.1	682.8	604.6	600.0
QC	Technology transfer and innovation consulting	149.8	144.6	149.1	142.1
QD	Research infrastructure SMEs	205.6	205.1	236.9	236.3
<b>R</b>	<b>Innovation-relevant underlying conditions and other cross-cutting activities</b>	550.0	449.3	639.0	526.8
RA	Technology Assessment	2.1	2.1	2.2	2.2
RB	Structural cross-cutting activities	74.4	49.7	101.7	76.8
RC	Demographical change	72.4	72.4	86.0	86.0
RD	Sports promotion and sports research	27.2	27.2	25.2	25.2
RE	Others	373.9	297.9	423.8	336.5
<b>T</b>	<b>Funding organisations, restructuring of the research field in acceding areas; construction of universities and primarily university-specific special programmes<sup>4</sup></b>	3,832.8	729.0	4,242.5	741.2
TA	Basic funding of research institutions	0.6	0.4	0.6	0.4
TB	Others	3,832.3	728.7	4,241.9	740.8
<b>U</b>	<b>Large-scale equipment for basic research</b>	1,222.3	1,222.0	1,169.4	1,169.1
<b>Z</b>	<b>Global reduced expenditure; budget reserve<sup>5</sup></b>	0.0	0.0	0.0	0.0
<b>Total of civil funding areas</b>		<b>19,925.2</b>	<b>14,744.2</b>	<b>21,269.9</b>	<b>15,484.9</b>
<b>S</b>	<b>Military scientific research</b>	938.7	871.2	1,206.7	1,137.6
SA	Military medical and military psychological research	50.3	15.0	54.7	18.1
SB	Defense technological research	861.5	841.8	1,124.0	1,104.1
SC	Social scientific research	2.6	2.6	2.8	2.8
SD	Military historical research	10.6	10.6	11.4	11.4
SE	Geoscientific research	13.7	1.2	13.7	1.2
<b>Total expenditure</b>		<b>20,863.9</b>	<b>15,615.4</b>	<b>22,476.6</b>	<b>16,622.5</b>

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**Federal Government expenditure on science, research and development, by funding areas and funding priorities<sup>12</sup>**

Millions of €					
Funding area Funding priority		ACTUAL		TARGET <sup>3</sup>	
		2018		2019	
		Total	Of which, R&D	Total	Of which, R&D
<b>A</b>	<b>Health research and health industry</b>	2,804.7	2,519.5	2,991.3	2,687.9
AA	Health research and health industry	2,734.0	2,505.5	2,908.7	2,677.9
AB	Radiation protection	70.7	14.0	82.6	10.0
<b>B</b>	<b>Bioeconomy</b>	296.5	295.5	281.7	280.8
<b>C</b>	<b>Civil security research</b>	141.3	139.0	155.8	153.6
<b>D</b>	<b>Nutrition, agriculture and consumer protection</b>	880.4	709.0	1,093.7	837.6
DA	Nutrition	52.4	30.7	51.5	28.5
DB	Sustainable agricultural economy and rural areas	548.7	467.5	722.0	566.1
DC	Health and economic consumer protection	279.4	210.8	320.3	243.1
<b>E</b>	<b>Energy research and energy technologies</b>	1,667.1	1,327.7	2,170.0	1,779.4
EA	Efficient energy conversion	763.9	762.0	1,184.4	1,182.6
EB	Renewable energy	278.0	276.7	304.9	303.7
EC	Nuclear safety and waste management	199.9	143.4	215.2	145.0
ED	Decommissioning of nuclear facilities	288.5	9.4	328.1	11.2
EF	Fusion research	136.7	136.1	137.4	136.9
<b>F</b>	<b>Climate, environment, sustainability</b>	1,595.9	1,358.7	1,803.0	1,529.3
FA	Climate, climate protection; global change	289.8	273.2	349.3	307.6
FB	Coast, marine and polar research, geosciences	537.7	490.5	656.0	607.0
FC	Environmental and sustainability research	468.3	363.1	526.1	416.2
FD	Ecology, nature conservation, sustainable use	300.0	231.8	271.5	198.5
<b>G</b>	<b>Information and communication technologies</b>	1,088.0	851.7	1,444.2	1,219.3
GA	Software systems; knowledge technologies	282.2	277.2	331.0	325.7
GB	Communication technologies and services	175.8	174.0	193.4	191.6
GC	Electronic, electronic systems	460.4	269.6	454.9	282.5
GD	Microsystems technology	41.6	40.7	317.0	316.2
GE	Multimedia - development of convergent information and communication technology	127.9	90.2	147.8	103.3
<b>H</b>	<b>Vehicle and traffic technologies including maritime technologies</b>	469.0	367.7	647.3	534.3
HA	Vehicle and traffic technologies	399.6	310.9	556.6	459.3
HB	Maritime technologies	69.4	56.8	90.7	75.0
<b>I</b>	<b>Aerospace</b>	1,819.4	1,816.6	1,870.1	1,867.5
IA	Aviation	296.7	296.3	344.0	343.6
IB	National space research and space technology	664.9	664.1	665.0	664.2
IC	European Space Agency (ESA)	857.8	856.2	861.1	859.7
<b>J</b>	<b>Research and development to improve working conditions and in the service sector</b>	175.5	115.1	183.1	123.7
JA	Research to improve working conditions	127.0	71.5	135.8	80.9
JB	Research in the service sector	48.5	43.7	47.3	42.8
<b>K</b>	<b>Nanotechnologies and materials technologies</b>	737.0	719.9	833.4	813.5
KA	Nanotechnologies	259.3	254.7	403.3	399.0
KB	Materials technologies	477.7	465.2	430.1	414.5
<b>L</b>	<b>Optical technologies</b>	238.6	230.2	245.4	237.5
<b>M</b>	<b>Production technologies</b>	255.6	253.1	272.4	270.0
<b>N</b>	<b>Regional planning and urban development; construction research</b>	123.9	118.1	151.8	147.6
NA	Regional planning, urban development, housing	28.3	28.3	54.7	52.4
NB	Construction research	95.6	89.9	97.2	95.2

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**Federal Government expenditure on science, research and development, by funding areas and funding priorities<sup>1,2</sup>**

Millions of €					
Funding area Funding priority		ACTUAL		TARGET <sup>3</sup>	
		2018		2019	
		Total	Of which, R&D	Total	Of which, R&D
<b>O</b>	<b>Innovations in education</b>	1,066.1	570.7	1,167.8	641.1
OA	Educational reporting, international assessments	502.3	188.6	517.5	203.3
OB	Educational research	510.8	329.0	561.5	349.0
OC	New media in education	53.1	53.1	88.8	88.8
<b>P</b>	<b>Humanities; economics and social sciences</b>	1,504.5	1,160.6	1,675.3	1,318.5
PA	Humanities research	950.6	631.9	1,033.1	707.6
PB	Social scientific research	302.7	280.0	332.0	303.0
PC	Economic and finance scientific research	99.9	99.9	117.2	117.2
PD	Infrastructures	151.3	148.7	193.1	190.7
<b>Q</b>	<b>Innovation funding for SMEs</b>	1,046.7	1,037.1	1,218.8	1,209.7
QA	Start-up support	104.3	104.3	129.3	129.3
QB	Technology support for SMEs	529.8	525.6	661.4	657.5
QC	Technology transfer and innovation consulting	166.5	161.7	181.5	176.8
QD	Research infrastructure SMEs	246.1	245.6	246.6	246.1
<b>R</b>	<b>Innovation-relevant underlying conditions and other cross-cutting activities</b>	741.4	584.0	803.4	615.7
RA	Technology Assessment	2.3	2.3	2.4	2.4
RB	Structural cross-cutting activities	130.6	71.1	187.1	99.5
RC	Demographical change	88.2	88.2	89.6	89.6
RD	Sports promotion and sports research	29.0	29.0	28.5	28.5
RE	Others	491.3	393.5	495.9	395.8
<b>T</b>	<b>Funding organisations, restructuring of the research field in acceding areas; construction of universities and primarily university-specific special programmes<sup>4</sup></b>	3,642.5	760.3	3,828.4	791.5
TA	Basic funding of research institutions	0.0	0.0	0.0	0.0
TB	Others	3,642.5	760.3	3,828.4	791.5
<b>U</b>	<b>Large-scale equipment for basic research</b>	1,312.1	1,311.8	1,378.2	1,377.9
<b>Z</b>	<b>Global reduced expenditure; budget reserve<sup>5</sup></b>	0.0	0.0	-367.3	-367.3
<b>Total of civil funding areas</b>		<b>21,606.1</b>	<b>16,246.2</b>	<b>23,847.7</b>	<b>18,069.1</b>
<b>S</b>	<b>Military scientific research</b>	1,065.6	1,003.8	1,574.9	1,521.3
SA	Military medical and military psychological research	56.6	18.3	53.1	20.8
SB	Defense technological research	991.0	971.6	1,503.7	1,486.7
SC	Social scientific research	2.6	2.6	2.6	2.6
SD	Military historical research	10.8	10.8	10.7	10.7
SE	Geoscientific research	4.6	0.4	4.8	0.4
<b>Total expenditure</b>		<b>22,671.7</b>	<b>17,250.0</b>	<b>25,422.6</b>	<b>19,590.4</b>

1 According to the Federal Government's planning system 2009. Expenditure was implemented in accordance with the Federal Government's planning system 2009. Expenditure of non-university research organisations are distributed among funding areas and funding priorities. Possible rounding differences.

2 Including "Energy and climate fund". Research funding in the area of electro mobility is financed by the "Energy and climate fund". 2016, including future investments.

3 Distribution among funding areas and funding priorities partly estimated or extrapolated.

4 Including universities of the federal armed forces and the Federal University of Applied Administrative Sciences.

5 ACTUAL figures are needed to break down the BMBF's total expenditure reduction by funding areas and funding priorities.

Last update: September 2019

This table also appears in the Federal Report on Research and Innovation as Table 5.

Source: Special evaluation of the Federal Ministry of Education and Research