Christian Breyer

List of Publications by Year
in descending order

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154	12,332	22548	32181
papers	citations	61 h-index	105 g-index

156	156	156	9160
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Renewable energy in Pakistan: Paving the way towards a fully renewablesâ€based energy system across the power, heat, transport and desalination sectors by 2050. IET Renewable Power Generation, 2022, 16, 177-197.	1.7	24
2	True Cost of Solar Hydrogen. Solar Rrl, 2022, 6, 2100487.	3.1	62
3	Revisiting the potential of pumped-hydro energy storage: A method to detect economically attractive sites. Renewable Energy, 2022, 181, 182-193.	4.3	19
4	Job creation during a climate compliant global energy transition across the power, heat, transport, and desalination sectors by 2050. Energy, 2022, 238, 121690.	4.5	83
5	Powering an island energy system by offshore floating technologies towards 100% renewables: A case for the Maldives. Applied Energy, 2022, 308, 118360.	5.1	38
6	Comment on Seibert, M.K.; Rees, W.E. Through the Eye of a Needle: An Eco-Heterodox Perspective on the Renewable Energy Transition. Energies 2021, 14, 4508. Energies, 2022, 15, 971.	1.6	5
7	Global energy transition to 100% renewables by 2050: Not fiction, but much needed impetus for developing economies to leapfrog into a sustainable future. Energy, 2022, 246, 123419.	4.5	39
8	Impacts of model structure, framework, and flexibility on perspectives of 100% renewable energy transition decision-making. Renewable and Sustainable Energy Reviews, 2022, 164, 112452.	8.2	27
9	A review of 100% renewable energy scenarios on islands. Wiley Interdisciplinary Reviews: Energy and Environment, 2022, 11, .	1.9	17
10	Energy transition in megacities towards 100% renewable energy: A case for Delhi. Renewable Energy, 2022, 195, 578-589.	4.3	26
11	Material extraction potential of desalination brines: A technical and economic evaluation of brines as a possible new material source. Minerals Engineering, 2022, 185, 107652.	1.8	7
12	Global-local analysis of cost-optimal onshore wind turbine configurations considering wind classes and hub heights. Energy, 2022, 256, 124629.	4.5	18
13	Full energy sector transition towards 100% renewable energy supply: Integrating power, heat, transport and industry sectors including desalination. Applied Energy, 2021, 283, 116273.	5.1	176
14	Renewable Energy Transition for the Himalayan Countries Nepal and Bhutan: Pathways Towards Reliable, Affordable and Sustainable Energy for All. IEEE Access, 2021, 9, 84520-84544.	2.6	13
15	The Value of Fast Transitioning to a Fully Sustainable Energy System: The Case of Turkmenistan. IEEE Access, 2021, 9, 13590-13611.	2.6	17
16	Pathway to a fully sustainable energy system for Bolivia across power, heat, and transport sectors by 2050. Journal of Cleaner Production, 2021, 293, 126195.	4.6	33
17	Solar photovoltaics is ready to power a sustainable future. Joule, 2021, 5, 1041-1056.	11.7	265
18	Global-Local Heat Demand Development for the Energy Transition Time Frame Up to 2050. Energies, 2021, 14, 3814.	1.6	18

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19	Low-cost renewable electricity as the key driver of the global energy transition towards sustainability. Energy, 2021, 227, 120467.	4.5	358
20	Global potential of green ammonia based on hybrid PV-wind power plants. Applied Energy, 2021, 294, 116170.	5.1	174
21	Transition pathway towards 100% renewable energy across the sectors of power, heat, transport, and desalination for the Philippines. Renewable and Sustainable Energy Reviews, 2021, 144, 110934.	8.2	62
22	The role of biomass in sub-Saharan Africaâ€™s fully renewable power sector â€“ The case of Ghana. Renewable Energy, 2021, 173, 297-317.	4.3	36
23	Integration of seawater pumped storage and desalination in multi-energy systems planning: The case of copper as a key material for the energy transition. Applied Energy, 2021, 299, 117298.	5.1	8
24	Assessment of the water footprint for the European power sector during the transition towards a 100% renewable energy system. Energy, 2021, 233, 121098.	4.5	26
25	Just transition towards defossilised energy systems for developing economies: A case study of Ethiopia. Renewable Energy, 2021, 176, 346-365.	4.3	30
26	The impact of renewable energy and sector coupling on the pathway towards a sustainable energy system in Chile. Renewable and Sustainable Energy Reviews, 2021, 151, 111557.	8.2	49
27	Solar Photovoltaics in 100% Renewable Energy Systems. , 2021, , 1-30.		16
28	Setting the Pace for a Sustainable Energy Transition in Central Africa: The Case of Cameroon. IEEE Access, 2021, 9, 145435-145458.	2.6	15
29	Irrigation efficiency and renewable energy powered desalination as key components of Pakistan's water management strategy. Smart Energy, 2021, 4, 100052.	2.6	16
30	Low-cost solar power enables a sustainable energy industry system. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	14
31	Assessment of a cost-optimal power system fully based on renewable energy for Iran by 2050 â€“ Achieving zero greenhouse gas emissions and overcoming the water crisis. Renewable Energy, 2020, 146, 125-148.	4.3	53
32	Carbon dioxide direct air capture for effective climate change mitigation based on renewable electricity: a new type of energy system sector coupling. Mitigation and Adaptation Strategies for Global Change, 2020, 25, 43-65.	1.0	97
33	Baseload electricity and hydrogen supply based on hybrid PV-wind power plants. Journal of Cleaner Production, 2020, 243, 118466.	4.6	110
34	Authorsâ€™ reply to the letter to the editor: Response to â€˜A comparative analysis of electricity generation costs from renewable, fossil fuel and nuclear sources in G20 countries for the period 2015â€“2030â€™. Journal of Cleaner Production, 2020, 242, 118530.	4.6	0
35	Job creation during the global energy transition towards 100% renewable power system by 2050. Technological Forecasting and Social Change, 2020, 151, 119682.	6.2	183
36	Impact of weighted average cost of capital, capital expenditure, and other parameters on future utilityâ€scale PV levelised cost of electricity. Progress in Photovoltaics: Research and Applications, 2020, 28, 439-453.	4.4	247

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37	Critical materials in global low-carbon energy scenarios: The case for neodymium, dysprosium, lithium, and cobalt. Energy, 2020, 211, 118532.	4.5	73
38	From hot rock to useful energy: A global estimate of enhanced geothermal systems potential. Applied Energy, 2020, 279, 115769.	5.1	71
39	The role of energy prosumers in the transition of the Finnish energy system towards 100 % renewable energy by 2050. Futures, 2020, 124, 102644.	1.4	27
40	Assessment of lithium criticality in the global energy transition and addressing policy gaps in transportation. Nature Communications, 2020, 11, 4570.	5.8	208
41	Global Energy Security Index and Its Application on National Level. Energies, 2020, 13, 2502.	1.6	48
42	A Global Overview of Future Energy. , 2020, , 727-756.		4
43	Transition towards decarbonised power systems and its socio-economic impacts in West Africa. Renewable Energy, 2020, 154, 1092-1112.	4.3	50
44	Towards sustainable development in the MENA region: Analysing the feasibility of a 100% renewable electricity system in 2030. Energy Strategy Reviews, 2020, 28, 100466.	3.3	88
45	Energy Security Analysis for a 100% Renewable Energy Transition in Jordan by 2050. Sustainability, 2020, 12, 4921.	1.6	57
46	Role of the transmission grid and solar wind complementarity in mitigating the monsoon effect in a fully sustainable electricity system for India. IET Renewable Power Generation, 2020, 14, 254-262.	1.7	13
47	Strengthening the global water supply through a decarbonised global desalination sector and improved irrigation systems. Energy, 2020, 200, 117507.	4.5	49
48	Current energy policies and possible transition scenarios adopting renewable energy: A case study for Bangladesh. Renewable Energy, 2020, 155, 899-920.	4.3	51
49	Exploiting wind-solar resource complementarity to reduce energy storage need. AIMS Energy, 2020, 8, 749-770.	1.1	22
50	Evaluation of an onsite integrated hybrid PV-Wind power plant. AIMS Energy, 2020, 8, 988-1006.	1.1	15
51	Assessing the potential for renewable energy powered desalination for the global irrigation sector. Science of the Total Environment, 2019, 694, 133598.	3.9	40
52	Transition towards 100% renewable power and heat supply for energy intensive economies and severe continental climate conditions: Case for Kazakhstan. Applied Energy, 2019, 253, 113606.	5.1	46
53	The concerns of the young protesters are justified: A statement byScientists for Futureconcerning the protests for more climate protection. Gaia, 2019, 28, 79-87.	0.3	56
54	Reply to â€˜Bias in energy system models with uniform cost of capital assumptionâ€™. Nature Communications, 2019, 10, 4587.	5.8	15

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55	Direct Air Capture of CO2: A Key Technology for Ambitious Climate Change Mitigation. Joule, 2019, 3, 2053-2057.	11.7	136
56	Pathway towards achieving 100% renewable electricity by 2050 for South Africa. Solar Energy, 2019, 191, 549-565.	2.9	57
57	Scenarios for sustainable energy in Scotland. Wind Energy, 2019, 22, 666-684.	1.9	18
58	Trends in the global cement industry and opportunities for long-term sustainable CCU potential for Power-to-X. Journal of Cleaner Production, 2019, 217, 821-835.	4.6	97
59	Curtailment-storage-penetration nexus in the energy transition. Applied Energy, 2019, 235, 1351-1368.	5.1	55
60	Terawatt-scale photovoltaics: Transform global energy. Science, 2019, 364, 836-838.	6.0	320
61	Integration of greenhouse agriculture to the energy infrastructure as an alimentary solution. Renewable and Sustainable Energy Reviews, 2019, 110, 368-377.	8.2	22
62	Cost optimal self-consumption of PV prosumers with stationary batteries, heat pumps, thermal energy storage and electric vehicles across the world up to 2050. Solar Energy, 2019, 185, 406-423.	2.9	94
63	Status and perspectives on 100% renewable energy systems. Energy, 2019, 175, 471-480.	4.5	489
64	Techno-economic assessment of CO2 direct air capture plants. Journal of Cleaner Production, 2019, 224, 957-980.	4.6	614
65	Radical transformation pathway towards sustainable electricity via evolutionary steps. Nature Communications, 2019, 10, 1077.	5.8	354
66	Long term load projection in high resolution for all countries globally. International Journal of Electrical Power and Energy Systems, 2019, 111, 160-181.	3.3	72
67	Analysing the feasibility of powering the Americas with renewable energy and inter-regional grid interconnections by 2030. Renewable and Sustainable Energy Reviews, 2019, 105, 187-205.	8.2	118
68	Flexible electricity generation, grid exchange and storage for the transition to a 100% renewable energy system in Europe. Renewable Energy, 2019, 139, 80-101.	4.3	375
69	Solar photovoltaic capacity demand for a sustainable transport sector to fulfil the Paris Agreement by 2050. Progress in Photovoltaics: Research and Applications, 2019, 27, 978-989.	4.4	30
70	The mutual dependence of negative emission technologies and energy systems. Energy and Environmental Science, 2019, 12, 1805-1817.	15.6	135
71	Global scenarios for significant water use reduction in thermal power plants based on cooling water demand estimation using satellite imagery. Nature Energy, 2019, 4, 1040-1048.	19.8	60
72	Global Transportation Demand Development with Impacts on the Energy Demand and Greenhouse Gas Emissions in a Climate-Constrained World. Energies, 2019, 12, 3870.	1.6	121

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73	A GIS-based method to identify potential sites for pumped hydro energy storage - Case of Iran. Energy, 2019, 169, 854-867.	4.5	56
74	Power transmission and distribution losses â€“ A model based on available empirical data and future trends for all countries globally. International Journal of Electrical Power and Energy Systems, 2019, 107, 98-109.	3.3	85
75	The role that battery and water storage play in Saudi Arabiaâ€™s transition to an integrated 100% renewable energy power system. Journal of Energy Storage, 2018, 17, 299-310.	3.9	58
76	Sustainability guardrails for energy scenarios of the global energy transition. Renewable and Sustainable Energy Reviews, 2018, 91, 321-334.	8.2	163
77	Energy transition roadmap towards 100% renewable energy and role of storage technologies for Pakistan by 2050. Energy, 2018, 147, 518-533.	4.5	140
78	Assessment of sustainable energy system configuration for a small Canary island in 2030. Energy Conversion and Management, 2018, 165, 363-372.	4.4	51
79	Techno-economic analysis of a decarbonized shipping sector: Technology suggestions for a fleet in 2030 and 2040. Energy Conversion and Management, 2018, 164, 230-241.	4.4	112
80	Solar photovoltaics demand for the global energy transition in the power sector. Progress in Photovoltaics: Research and Applications, 2018, 26, 505-523.	4.4	136
81	Definitions and dimensions of energy security: a literature review. Wiley Interdisciplinary Reviews: Energy and Environment, 2018, 7, e268.	1.9	86
82	The role of storage technologies in energy transition pathways towards achieving a fully sustainable energy system for India. Journal of Energy Storage, 2018, 17, 525-539.	3.9	74
83	Solar Photovoltaic Capacity Demand for a fully sustainable Transport Sector â€“ How to fulfil the Paris Agreement by 2050. , 2018, , .		7
84	Combining Floating Solar Photovoltaic Power Plants and Hydropower Reservoirs: A Virtual Battery of Great Global Potential. Energy Procedia, 2018, 155, 403-411.	1.8	130
85	The Baltic Sea Region: Storage, grid exchange and flexible electricity generation for the transition to a 100% renewable energy system. Energy Procedia, 2018, 155, 390-402.	1.8	23
86	Energy security and energy storage technologies. Energy Procedia, 2018, 155, 237-258.	1.8	65
87	The role of storage technologies for the transition to a 100% renewable energy system in Europe. Energy Procedia, 2018, 155, 44-60.	1.8	90
88	Arising role of photovoltaic and wind energy in the power sector and beyond: Changing the Northeast Asian power landscape. Japanese Journal of Applied Physics, 2018, 57, 08RJ01.	0.8	13
89	Pathways to a fully sustainable electricity supply for Nigeria in the mid-term future. Energy Conversion and Management, 2018, 178, 44-64.	4.4	51
90	The Impacts of High V2G Participation in a 100% Renewable Ã...land Energy System. Energies, 2018, 11, 2206.	1.6	70

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91	Assessment of geological resource potential for compressed air energy storage in global electricity supply. Energy Conversion and Management, 2018, 169, 161-173.	4.4	82
92	Solar driven net zero emission electricity supply with negligible carbon cost: Israel as a case study for Sun Belt countries. Energy, 2018, 155, 87-104.	4.5	30
93	Desalination Costs Using Renewable Energy Technologies. , 2018, , 287-329.		3
94	Relevance of PV with single-axis tracking for energy scenarios. Solar Energy, 2018, 173, 173-191.	2.9	61
95	Repercussion of Large Scale Hydro Dam Deployment: The Case of Congo Grand Inga Hydro Project. Energies, 2018, 11, 972.	1.6	36
96	Role of Seawater Desalination in the Management of an Integrated Water and 100% Renewable Energy Based Power Sector in Saudi Arabia. Water (Switzerland), 2018, 10, 3.	1.2	113
97	A comparative analysis of electricity generation costs from renewable, fossil fuel and nuclear sources in G20 countries for the period 2015-2030. Journal of Cleaner Production, 2018, 199, 687-704.	4.6	142
98	A cost optimal resolution for Sub-Saharan Africa powered by 100% renewables in 2030. Renewable and Sustainable Energy Reviews, 2018, 92, 440-457.	8.2	100
99	Aging of European power plant infrastructure as an opportunity to evolve towards sustainability. International Journal of Hydrogen Energy, 2017, 42, 18081-18091.	3.8	22
100	Energy Return on Energy Invested (ERoEI) for photovoltaic solar systems in regions of moderate insolation: A comprehensive response. Energy Policy, 2017, 102, 377-384.	4.2	59
101	Scenarios for a sustainable energy system in the Ã...land Islands in 2030. Energy Conversion and Management, 2017, 137, 49-60.	4.4	85
102	Transition and transformation: A review of the concept of change in the progress towards future sustainable energy systems. Energy Policy, 2017, 107, 11-26.	4.2	35
103	On the role of solar photovoltaics in global energy transition scenarios. Progress in Photovoltaics: Research and Applications, 2017, 25, 727-745.	4.4	250
104	An energy transition pathway for Turkey to achieve 100% renewable energy powered electricity, desalination and non-energetic industrial gas demand sectors by 2050. Solar Energy, 2017, 158, 218-235.	2.9	70
105	Transition towards a 100% Renewable Energy System and the Role of Storage Technologies: A Case Study of Iran. Energy Procedia, 2017, 135, 23-36.	1.8	43
106	The Demand For Storage Technologies In Energy Transition Pathways Towards 100% Renewable Energy For India. Energy Procedia, 2017, 135, 37-50.	1.8	45
107	Impact of Battery and Water Storage on the Transition to an Integrated 100% Renewable Energy Power System for Saudi Arabia. Energy Procedia, 2017, 135, 126-142.	1.8	21
108	The role of storage technologies for the transition to a 100% renewable energy system in Ukraine. Energy Procedia, 2017, 135, 410-423.	1.8	45

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109	Assessment of mid-term growth assumptions and learning rates for comparative studies of CSP and hybrid PV-battery power plants. AIP Conference Proceedings, 2017, , .	0.3	17
110	Learning Curve for Seawater Reverse Osmosis Desalination Plants: Capital Cost Trend of the Past, Present, and Future. Water Resources Research, 2017, 53, 10523-10538.	1.7	108
111	New consciousness: A societal and energetic vision for rebalancing humankind within the limits of planet Earth. Technological Forecasting and Social Change, 2017, 114, 7-15.	6.2	44
112	Structural changes of global power generation capacity towards sustainability and the risk of stranded investments supported by a sustainability indicator. Journal of Cleaner Production, 2017, 141, 370-384.	4.6	144
113	How much energy storage is needed to incorporate very large intermittent renewables?. Energy Procedia, 2017, 135, 283-293.	1.8	40
114	Can Australia Power the Energy-Hungry Asia with Renewable Energy?. Sustainability, 2017, 9, 233.	1.6	51
115	Long-Term Hydrocarbon Trade Options for the Maghreb Region and Europeâ€"Renewable Energy Based Synthetic Fuels for a Net Zero Emissions World. Sustainability, 2017, 9, 306.	1.6	89
116	A Techno-Economic Study of an Entirely Renewable Energy-Based Power Supply for North America for 2030 Conditions. Energies, 2017, 10, 1171.	1.6	87
117	Visualizing National Electrification Scenarios for Sub-Saharan African Countries. Energies, 2017, 10, 1899.	1.6	43
118	The Role of Solar Photovoltaics and Energy Storage Solutions in a 100% Renewable Energy System for Finland in 2050. Sustainability, 2017, 9, 1358.	1.6	40
119	Hydro, wind and solar power as a base for a 100% renewable energy supply for South and Central America. PLoS ONE, 2017, 12, e0173820.	1.1	130
120	Electricity system based on 100% renewable energy for India and SAARC. PLoS ONE, 2017, 12, e0180611.	1.1	96
121	A Cost Optimized Fully Sustainable Power System for Southeast Asia and the Pacific Rim. Energies, 2017, 10, 583.	1.6	61
122	The Role of Energy Storage Solutions in a 100% Renewable Finnish Energy System. Energy Procedia, 2016, 99, 25-34.	1.8	38
123	Impact of Battery Cost on the Economics of Hybrid Photovoltaic Power Plants. Energy Procedia, 2016, 99, 157-173.	1.8	11
124	Energy Storage in Global and Transcontinental Energy Scenarios: A Critical Review. Energy Procedia, 2016, 99, 53-63.	1.8	26
125	Hydropower and Power-to-gas Storage Options: The Brazilian Energy System Case. Energy Procedia, 2016, 99, 89-107.	1.8	25
126	Techno-Economic Assessment of Power-to-Liquids (PtL) Fuels Production and Global Trading Based on Hybrid PV-Wind Power Plants. Energy Procedia, 2016, 99, 243-268.	1.8	153

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127	Global analysis of the techno-economic potential of renewable energy hybrid systems on small islands. Energy Policy, 2016, 98, 674-687.	4.2	139
128	Vision and initial feasibility analysis of a recarbonised Finnish energy system for 2050. Renewable and Sustainable Energy Reviews, 2016, 66, 517-536.	8.2	117
129	Integrated renewable energy based power system for Europe, Eurasia and MENA regions. , 2016, , .		13
130	Energy learning curves of PV systems. Environmental Progress and Sustainable Energy, 2016, 35, 914-923.	1.3	51
131	North-East Asian Super Grid for 100% renewable energy supply: Optimal mix of energy technologies for electricity, gas and heat supply options. Energy Conversion and Management, 2016, 112, 176-190.	4.4	289
132	Global cost advantages of autonomous solarâ€“batteryâ€“diesel systems compared to diesel-only systems. Energy for Sustainable Development, 2016, 31, 14-23.	2.0	32
133	Local cost of seawater RO desalination based on solar PV and wind energy: A global estimate. Desalination, 2016, 385, 207-216.	4.0	176
134	Eurasian Super Grid for 100% Renewable Energy Power Supply: Generation and Storage Technologies in the Cost Optimal Mix. , 2016, , .		9
135	North-East Asian Super Grid: Renewable energy mix and economics. Japanese Journal of Applied Physics, 2015, 54, 08KJ01.	0.8	41
136	Power-to-Gas as an Emerging Profitable Business Through Creating an Integrated Value Chain. Energy Procedia, 2015, 73, 182-189.	1.8	87
137	Profitable climate change mitigation: The case of greenhouse gas emission reduction benefits enabled by solar photovoltaic systems. Renewable and Sustainable Energy Reviews, 2015, 49, 610-628.	8.2	65
138	Transforming the electricity generation of the Berlinâ€“Brandenburg region, Germany. Renewable Energy, 2014, 72, 39-50.	4.3	34
139	Large scale solar power plant in Nordic conditions. , 2014, , .		7
140	Catching two European birds with one renewable stone: Mitigating climate change and Eurozone crisis by an energy transition. Renewable and Sustainable Energy Reviews, 2014, 38, 1015-1028.	8.2	101
141	Energy Storage Potential for Solar Based Hybridization of Off-grid Diesel Power Plants in Tanzania. Energy Procedia, 2014, 46, 287-293.	1.8	20
142	Global Energy Storage Demand for a 100% Renewable Electricity Supply. Energy Procedia, 2014, 46, 22-31.	1.8	221
143	Assessment of the Global Potential for Renewable Energy Storage Systems on Small Islands. Energy Procedia, 2014, 46, 294-300.	1.8	39
144	Global overview on gridâ€parity. Progress in Photovoltaics: Research and Applications, 2013, 21, 121-136.	4.4	271

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145	A top-down analysis: Determining photovoltaics R&D investments from patent analysis and R&D headcount. Energy Policy, 2013, 62, 1570-1580.	4.2	25
146	IEA PVPS Task8: Study on Very Large Scale Photovoltaic (VLS-PV) Systems. , 2012, , .		5
147	Economics of Hybrid PV-Fossil Power Plants. , 2011, , .		2
148	Hybrid PV-Wind-Renewable Power Methane Plants. , 2011, , .		8
149	PV and Wind Power â€“ Complementary Technologies. , 2011, , .		11
150	Value of solar PV electricity in MENA region. , 2010, , .		12
151	Fuel-parity: New very large and sustainable market segments for PV systems. , 2010, , .		10
152	Influence of exciton distribution on external quantum efficiency in bilayer organic solar cells. Physica Status Solidi (B): Basic Research, 2006, 243, 3176-3180.	0.7	8
153	On the function of a bathocuproine buffer layer in organic photovoltaic cells. Applied Physics Letters, 2006, 89, 163501.	1.5	175
154	Energy from the Desert 4. , 0, , .		5