

Every year, indoor air pollution from cooking with solid fuels is responsible for 1.5 million deaths.

Indoor air pollution has dramatic consequences for health. Cooking with wood, dung, coal and other solid fuels is a major risk factor for pneumonia among children and chronic respiratory disease among adults, with more than two thirds of these deaths occurring in South-East Asia and sub-Saharan Africa. Every year, the killer in the kitchen is responsible for 1.5 million deaths. Curbing indoor air pollution will put an end to this needless loss of life.

Progress since 1990 has been negligible. To halve, by 2015, the population cooking with solid fuels, 485 000 people need to gain access to cleaner fuels every day.

Progress in access to modern cooking fuels since 1990 has been negligible, as the small gains made are lagging behind population growth. To halve, by 2015, the number of people without access to such fuels, 485 000 people will need to gain access to modern energy services every day for the next 10 years. Innovative policy approaches and a rigorous acceleration of investments is needed now to save lives and enable development.

Health and productivity gains can more than pay for lifting people out of energy poverty.

Investing US\$ 13 billion per year to halve, by 2015, the number of people worldwide cooking with solid fuels by providing them with access to liquefied petroleum gas shows a payback of US\$ 91 billion per year. Making improved stoves available to half of those still burning biomass fuels and coal on traditional stoves would result in a negative intervention cost of US\$ 34 billion a year and generate an economic return of US\$ 105 billion a year over a 10-year-period. Health and productivity gains make household energy solutions potentially good value for money.

Taking household energy solutions to scale will overcome a major barrier to achieving the Millennium Development Goals.

Practical solutions to the household energy problem do exist. Liquefied petroleum gas, biogas and other cleaner fuels represent the healthiest alternative. Switching from a traditional stove to an improved stove substantially reduces indoor smoke. Improved household energy practices promote education, empower women, save the lives of children and their mothers and benefit our forests and our climate.

Carefully documenting experience with solutions will serve to maximize the health and broader benefits of large-scale programmes.

Many household energy projects and programmes are currently under way around the world. Evaluating the impacts of these initiatives will shed light on how different technical solutions could be fine-tuned to maximize their health, social and environmental benefits. Learning from their experience will provide a recipe for putting into action successful, large-scale programmes.



Further reading

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Annex

Country	Total population (thousands)	Percentage of population living below \$1 (PPP) per day	Percentage of population using solid fuels	Under-five mortality rate per 1000 live births	Maternal mortality rate per 100 000 live births	Carbon dioxide emissions per capita (metric tons)
Year	2003	2003 or latest available data	2003 or latest available data	2003 or latest available data	2000	2002
Afghanistan	23 897	no data	>95	257	1 900	0
Albania	3 166	2	50	21	55	0.8
Algeria	31 800	2	<5	41	140	2.9
Andorra	71	no data	<5	7	no data	no data
Angola	13 625	no data	>95	260	1 700	0.5
Antigua and Barbuda	73	no data	46	12	no data	4.7
Argentina	38 428	3	<5	20	82	3.5
Armenia	3 061	13	26	33	55	1.0
Australia	19 731	no data	<5	6	8	18.3
Austria	8 116	no data	<5	5	4	7.8
Azerbaijan	8 370	4	49	91	94	3.4
Bahamas	314	no data	<5	14	60	6.7
Bahrain	724	no data	<5	15	28	30.6
Bangladesh	146 736	36	88	69	380	0.3
Barbados	270	no data	<5	13	95	4.6
Belarus	9 895	0	19	17	35	6.0
Belgium	10 318	no data	<5	5	10	6.8
Belize	256	no data	43	39	140	3.1
Benin	6 736	no data	95	154	850	0.3
Bhutan	2 257	no data	no data	85	420	0.2
Bolivia	8 808	14	25	66	420	1.2
Bosnia and Herzegovina	4 161	no data	51	17	31	4.8
Botswana	1 785	31	65	112	100	2.3
Brazil	178 470	8	12	35	260	1.8
Brunei Darussalam	358	no data	no data	6	37	17.7
Bulgaria	7 897	5	17	15	32	5.3
Burkina Faso	13 002	45	>95	207	1 000	0.1
Burundi	6 825	55	>95	190	1 000	0.0
Cambodia	14 144	34	>95	140	450	0.0
Cameroon	16 018	17	83	166	730	0.2
Canada	31 510	no data	<5	6	6	16.5
Cape Verde	463	no data	36	35	150	0.3
Central African Republic	3 865	67	>95	180	1 100	0.1
Chad	8 598	no data	>95	200	1 100	0.0
Chile	15 806	2	<5	9	31	3.6
China	1 311 709	17	80	37	56	2.7
Colombia	44 222	8	15	21	130	1.3
Comoros	768	no data	76	73	480	0.1
Congo	3 724	no data	84	108	510	0.6
Cook Islands	18	no data	no data	21	no data	1.5
Costa Rica	4 173	2	23	10	43	1.4
Côte d'Ivoire	16 631	11	74	192	690	0.4
Croatia	4 428	2	12	7	8	4.7
Cuba	11 300	no data	21	8	33	2.1
Cyprus	802	no data	<5	5	47	8.3
Czech Republic	10 236	2	<5	4	9	11.2
Democratic People's Republic of Korea	22 664	no data	no data	55	67	6.5
Democratic Republic of the Congo	52 771	no data	>95	205	990	0.0
Denmark	5 364	no data	<5	4	5	8.9
Djibouti	703	no data	6	138	730	0.5

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Country	Total population (thousands)	Percentage of population living below \$1 (PPP) per day	Percentage of population using solid fuels	Under-five mortality rate per 1000 live births	Maternal mortality rate per 100 000 live births	Carbon dioxide emissions per capita (metric tons)
Year	2003	2003 or latest available data	2003 or latest available data	2003 or latest available data	2000	2002
Dominica	79	no data	21	14	no data	1.5
Dominican Republic	8 745	2	14	35	150	2.5
Ecuador	13 003	18	<5	27	130	2.0
Egypt	71 931	3	<5	39	84	2.1
El Salvador	6 515	31	<5	36	150	1.0
Equatorial Guinea	494	no data	no data	146	880	0.4
Eritrea	4 141	no data	80	85	630	0.2
Estonia	1 323	2	15	9	63	11.8
Ethiopia	70 678	23	>95	169	850	0.1
Fiji	839	no data	40	20	75	1.6
Finland	5 207	no data	<5	5	6	12.0
France	60 144	no data	<5	5	17	6.2
Gabon	1 329	no data	28	91	420	2.6
Gambia	1 426	54	>95	123	540	0.2
Georgia	5 126	3	42	45	32	0.7
Germany	82 476	no data	<5	5	8	9.8
Ghana	20 922	45	88	95	540	0.4
Greece	10 976	no data	<5	5	9	8.5
Grenada	80	no data	48	23	no data	2.3
Guatemala	12 347	16	62	47	240	0.9
Guinea	8 480	no data	>95	160	740	0.1
Guinea-Bissau	1 493	no data	95	204	1 100	0.2
Guyana	765	3	59	69	170	2.2
Haiti	8 326	no data	>95	118	680	0.2
Honduras	6 941	21	57	41	110	0.9
Hungary	9 877	2	<5	8	16	5.6
Iceland	290	no data	<5	4	0	7.7
India	1 065 462	35	74	87	540	1.2
Indonesia	219 883	8	72	41	230	1.4
Iran, Islamic Republic of	68 920	2	<5	39	76	5.3
Iraq	25 175	no data	<5	125	250	3.0
Ireland	3 956	no data	<5	6	5	11.0
Israel	6 433	no data	<5	6	17	11.0
Italy	57 423	no data	<5	4	5	7.5
Jamaica	2 651	2	45	20	87	4.1
Japan	127 654	no data	<5	4	10	9.4
Jordan	5 473	2	<5	28	41	3.2
Kazakhstan	15 433	2	5	73	210	9.9
Kenya	31 987	23	81	123	1 000	0.2
Kiribati	88	no data	no data	66	no data	0.3
Kuwait	2 521	no data	<5	9	5	24.6
Kyrgyzstan	5 138	2	76	68	110	1.0
Lao People's Democratic Republic	5 657	26	>95	91	650	0.2
Latvia	2 307	2	10	12	42	2.7
Lebanon	3 653	no data	<5	31	150	4.7
Lesotho	1 802	36	83	110	550	no data
Liberia	3 367	no data	no data	235	760	0.1
Libyan Arab Jamahiriya	5 551	no data	<5	16	97	9.1
Lithuania	3 444	2	<5	11	13	3.6
Luxembourg	453	no data	<5	5	28	21.1

Country	Total population (thousands)	Percentage of population living below \$1 (PPP) per day	Percentage of population using solid fuels	Under-five mortality rate per 1000 live births	Maternal mortality rate per 100 000 live births	Carbon dioxide emissions per capita (metric tons)
Year	2003	2003 or latest available data	2003 or latest available data	2003 or latest available data	2000	2002
Madagascar	17 404	61	>95	126	550	0.1
Malawi	12 105	42	>95	178	1 800	0.1
Malaysia	24 425	2	<5	7	41	6.3
Maldives	318	no data	no data	72	110	3.4
Mali	13 007	72	>95	220	1 200	0.0
Malta	394	no data	<5	6	21	7.5
Marshall Islands	53	no data	no data	61	no data	no data
Mauritania	2 893	26	65	107	1 000	1.1
Mauritius	1 221	no data	<5	18	24	2.6
Mexico	103 457	10	12	28	83	3.7
Micronesia, Federal States of	109	no data	no data	23	no data	no data
Monaco	34	no data	<5	4	no data	6.2
Mongolia	2 594	27	51	68	110	3.3
Morocco	30 566	2	5	39	220	1.4
Mozambique	18 863	38	80	147	1 000	0.1
Myanmar	49 485	no data	95	107	360	0.2
Namibia	1 987	35	63	65	300	1.1
Nauru	13	no data	no data	30	no data	10.8
Nepal	25 164	39	80	82	740	0.2
Netherlands	16 149	no data	<5	5	16	9.4
New Zealand	3 875	no data	<5	6	7	8.7
Nicaragua	5 466	45	58	38	230	0.7
Niger	11 972	61	>95	262	1 600	0.1
Nigeria	124 009	70	67	198	800	0.4
Niue	2	no data	no data	no data	no data	2.0
Norway	4 533	no data	<5	4	16	12.2
Oman	2 851	no data	<5	12	87	12.1
Pakistan	153 578	13	72	98	500	0.7
Palau	20	no data	no data	28	no data	11.9
Panama	3 120	7	33	24	160	2.0
Papua New Guinea	5 711	no data	90	93	300	0.4
Paraguay	5 878	16	58	29	170	0.7
Peru	27 167	18	33	34	410	1.0
Philippines	79 999	15	47	36	200	0.9
Poland	38 587	2	<5	7	13	7.7
Portugal	10 061	2	<5	5	5	6.0
Qatar	610	no data	<5	15	7	53.1
Republic of Korea	47 700	2	<5	5	20	9.4
Republic of Moldova	4 267	22	63	32	36	1.6
Romania	22 334	2	23	20	49	4.0
Russian Federation	143 246	2	7	21	67	9.9
Rwanda	8 387	52	>95	203	1 400	0.1
Saint Kitts and Nevis	42	no data	<5	22	no data	2.8
Saint Lucia	149	25	63	18	no data	2.4
Saint Vincent and the Grenadines	120	no data	31	27	no data	1.6
Samoa	178	no data	70	24	130	0.8
San Marino	28	no data	<5	5	no data	7.5
Sao Tome and Principe	161	no data	95	118	no data	0.6
Saudi Arabia	24 217	no data	<5	26	23	15.0
Senegal	10 095	22	41	137	690	0.4

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Country	Total population (thousands)	Percentage of population living below \$1 (PPP) per day	Percentage of population using solid fuels	Under-five mortality rate per 1000 live births	Maternal mortality rate per 100 000 live births	Carbon dioxide emissions per capita (metric tons)
Year	2003	2003 or latest available data	2003 or latest available data	2003 or latest available data	2000	2002
Serbia and Montenegro	10 527	no data	no data	14	11	4.4
Seychelles	81	no data	<5	15	no data	6.8
Sierra Leone	4 971	no data	92	284	2 000	0.1
Singapore	4 253	no data	<5	3	30	13.8
Slovakia	5 402	2	<5	8	3	6.8
Slovenia	1 984	2	8	4	17	7.8
Solomon Islands	477	no data	95	22	130	0.4
Somalia	9 890	no data	no data	225	1 100	no data
South Africa	45 026	11	18	66	230	7.4
Spain	41 060	no data	<5	4	4	7.3
Sri Lanka	19 065	8	67	15	92	0.5
Sudan	33 610	no data	>95	93	590	0.3
Suriname	436	no data	no data	39	110	5.1
Swaziland	1 077	8	68	153	370	0.9
Sweden	8 876	no data	<5	3	2	5.8
Switzerland	7 169	no data	<5	5	7	5.7
Syrian Arab Republic	17 800	no data	32	18	160	2.8
Tajikistan	6 245	7	75	95	100	0.7
Thailand	62 833	2	72	26	44	3.7
The former Yugoslav Republic of Macedonia	2 056	2	30	11	23	5.1
Timor-Leste	778	no data	no data	124	660	no data
Togo	4 909	no data	76	140	570	0.3
Tonga	104	no data	56	19	no data	1.1
Trinidad and Tobago	1 303	4	8	20	160	31.9
Tunisia	9 832	2	5	24	120	2.3
Turkey	71 325	2	11	39	70	3.0
Turkmenistan	4 867	10	<5	102	31	9.1
Tuvalu	11	no data	no data	51	no data	no data
Uganda	25 827	85	>95	140	880	0.1
Ukraine	48 523	2	6	20	35	6.4
United Arab Emirates	2 995	no data	<5	8	54	25.1
United Kingdom	59 251	no data	<5	6	13	9.2
United Republic of Tanzania	36 977	49	>95	165	1 500	0.1
United States of America	294 043	no data	<5	8	17	20.1
Uruguay	3 415	2	<5	14	27	1.2
Uzbekistan	26 093	14	72	69	24	4.8
Vanuatu	212	no data	79	38	130	0.4
Venezuela, Bolivarian Republic of	25 699	14	5	21	96	4.3
Viet Nam	81 377	2	70	23	130	0.8
Yemen	20 010	16	42	113	570	0.7
Zambia	10 812	64	85	182	750	0.2
Zimbabwe	12 891	56	73	126	1 100	1.0

For further information on data sources and data limitations see:
 United Nations Statistics Division, *Millennium Development Goal Indicators Database*. Available at: http://millenniumindicators.un.org/unsd/mi/mi_goals.asp