



	Electric power		Telephones					Affordability and efficiency			
	Consumption per capita kWh	Transmission and distribution losses % of output	Access and use			Quality Population covered by mobile cellular network ^a %	\$ per month		Telecommunications revenue ^a % of GDP	Mobile cellular and fixed-line subscribers per employee ^a	
			Fixed lines ^a per 100 people	Mobile cellular subscriptions ^a per 100 people	International voice traffic ^a minutes per person		Residential fixed-line tariff ^a	Mobile cellular prepaid tariff ^a			
											2007
Afghanistan	..	..	..	..	..	..	..	..	5.1	861
Albania	961	52	9	72	125	97	4.3	22.7	6.0	710	
Algeria	870	18	9	81	18	82	4.6	8.2	2.7	285	
Angola	153	14	1	29	..	40	20.2	11.8	2.0	586	
Argentina	2,620	13	24	102	3	94	4.8	12.5	3.1	1,929	
Armenia	1,612	13	20	62	128	88	5.1	8.4	3.0	173	
Australia	11,332	7	46	101	..	99	27.5	26.5	3.6	310	
Austria	8,090	6	41	119	..	99	28.7	24.3	2.1	747	
Azerbaijan	2,514	13	15	53	..	99	2.4	15.2	2.6	413	
Bangladesh	146	6	1	22	6	90	1.3	1.3	..	..
Belarus	3,322	12	38	72	..	93	..	11.8	2.1	280	
Belgium	8,684	5	44	101	..	100	36.4	21.9	3.0	690	
Benin	69	..	1	21	11	80	7.5	15.5	1.1	1,539	
Bolivia	485	14	7	34	80	46	22.7	5.9	6.8	376	
Bosnia and Herzegovina	2,385	17	28	65	241	99	9.5	9.9	5.7	657	
Botswana	1,419	15	7	61	93	99	16.9	8.3	3.0	1,074	
Brazil	2,060	17	21	63	..	91	29.1	37.0	4.7	358	
Bulgaria	4,311	11	30	129	31	100	9.2	18.6	5.9	522	
Burkina Faso	..	..	1	11	11	61	10.3	16.9	4.0	440
Burundi	..	..	0	3	..	82	..	12.2	..	..
Cambodia	88	8	0	18	10	87	8.0	5.0	..	..
Cameroon	186	15	1	24	4	58	14.8	17.8	3.1	1,050	
Canada	16,753	8	55	61	..	98	32.8	19.2	2.7	424	
Central African Republic	..	..	0	3	..	19	10.6	12.6	1.1	293
Chad	..	..	0	9	..	24	..	13.2	..	..
Chile	3,207	12	21	84	40	100	27.0	13.7	..	1,311	
China	2,041	6	28	42	9	97	3.7	3.6	2.9	1,310	
Hong Kong, China	5,883	12	60	155	1,387	100	11.3	2.6	3.5	813	
Colombia	968	19	18	77	106	83	7.6	9.6	3.9	..	
Congo, Dem. Rep.	96	4	0	11	4	50	..	11.0	7.6	3,628	
Congo, Rep.	155	64	0	34	..	53	..	..	..	..
Costa Rica	1,801	10	32	34	119	87	4.6	4.5	2.2	470	
Côte d'Ivoire	182	19	1	37	..	59	22.8	14.8	5.5	1,442	
Croatia	3,636	16	42	113	208	100	16.4	18.7	5.3	778	
Cuba	1,231	16	9	2	31	77	13.2	22.7	..	58	
Czech Republic	6,509	6	23	123	74	100	30.9	18.6	3.7	796	
Denmark	6,864	3	52	114	307	114	28.5	5.8	2.6	512	
Dominican Republic	1,309	11	9	57	..	90	14.4	9.1	0.5	..	
Ecuador	759	45	14	76	90	84	1.1	9.0	4.1	512	
Egypt, Arab Rep.	1,382	11	15	40	42	94	3.0	4.7	3.8	538	
El Salvador	721	13	16	90	515	95	10.4	10.5	5.7	1,657	
Eritrea	49	..	1	2	7	2	..	..	2.0	105
Estonia	5,883	11	37	148	..	100	13.7	13.6	4.8	707	
Ethiopia	38	10	1	2	3	10	1.5	3.1	2.2	142	
Finland	17,177	4	33	115	..	99	19.3	14.1	2.5	584	
France	7,813	6	56	90	243	99	30.9	35.7	2.2	695	
Gabon	1,083	18	2	88	74	79	..	14.9	2.0	..	
Gambia, The	..	..	4	47	..	85	4.0	6.0	..	481
Georgia	1,549	14	13	59	..	96	7.3	8.5	6.5	355	
Germany	7,174	5	65	118	..	100	28.8	10.1	2.6	703	
Ghana	304	16	2	32	1	68	4.7	5.9	..	1,261	
Greece	5,372	8	54	110	182	100	26.7	25.1	3.7	802	
Guatemala	529	12	10	76	..	76	8.7	4.5	..	..
Guinea	..	..	1	21	..	80	3.4	3.5	..	..
Guinea-Bissau	..	..	0	17	..	65	..	21.9	..	..
Haiti	37	38	1	26	..	32	..	4.5	..	..

	Electric power		Telephones							
	Consumption per capita kWh	Transmission and distribution losses % of output	Access and use			Quality Population covered by mobile cellular network ^a	Affordability and efficiency			
			per 100 people		International voice traffic ^a minutes per person		Residential fixed-line tariff ^a	\$ per month Mobile cellular prepaid tariff ^a	Telecom- munications revenue ^a % of GDP	Mobile cellular and fixed-line subscribers per employee ^a
			Fixed lines ^a	Mobile cellular subscriptions ^a						
Honduras	642	26	12	59	33	90	..	10.8	6.6	391
Hungary	3,882	11	32	110	120	99	30.2	16.1	4.2	1,009
India	503	25	4	21	..	61	3.5	1.6	2.0	..
Indonesia	530	11	8	36	..	90	4.5	5.3	..	..
Iran, Islamic Rep.	2,290	20	34	42	9	95	0.2	3.8	1.4	913
Iraq	..	6	..	..	..	..	..	..	..	941
Ireland	6,488	8	48	114	..	99	42.2	18.7	2.4	..
Israel	6,889	3	43	124	364	100	..	9.3	4.1	..
Italy	5,755	6	46	152	..	100	27.4	17.1	3.2	1,228
Jamaica	2,453	13	14	100	..	95	10.8	7.0	..	..
Japan	8,220	5	40	84	46	100	18.3	32.2	3.1	1,334
Jordan	1,904	13	10	83	32	99	8.3	4.5	8.3	1,026
Kazakhstan	4,293	9	21	80	47	81	..	11.4	2.9	308
Kenya	145	17	1	30	3	77	11.6	13.4	6.1	1,782
Korea, Dem. Rep.	797	16	5	0	..	0	..	..	..	..
Korea, Rep.	8,063	4	46	90	29	90	6.4	14.6	5.0	637
Kuwait	16,311	11	20	104	..	100	9.3	7.9	..	372
Kyrgyz Republic	2,015	24	9	41	30	24	..	6.4	4.8	311
Lao PDR	..	..	2	25	7	55	3.9	3.0	1.7	748
Latvia	2,876	17	28	97	67	99	11.9	7.3	4.0	697
Lebanon	2,141	16	17	31	279	100	10.9	22.2	8.0	..
Lesotho	..	..	3	23	18	55	12.5	12.6	0.6	1,111
Liberia	..	..	0	15	..	..	..	..	8.2	..
Libya	3,688	7	14	73	66	71	..	6.1	..	..
Lithuania	3,233	9	24	146	54	100	15.0	8.7	3.1	..
Macedonia, FYR	3,495	24	23	96	125	100	8.7	13.2	6.8	1,065
Madagascar	..	..	1	11	1	23	18.3	12.4	3.9	394
Malawi	..	..	1	8	..	93	3.3	12.0	3.3	..
Malaysia	3,388	1	16	88	..	93	5.1	5.9	..	571
Mali	..	..	1	21	2	22	9.9	10.0	6.0	1,490
Mauritania	..	..	1	42	5	51	12.9	9.9	7.5	1,272
Mauritius	..	..	29	74	125	99	5.5	4.4	3.6	492
Mexico	2,003	16	19	63	185	100	22.3	15.0	2.8	789
Moldova	1,516	40	28	49	149	98	3.1	8.9	10.1	294
Mongolia	1,298	12	6	30	5	41	..	5.4	3.9	190
Morocco	685	19	8	65	22	98	27.4	22.2	4.8	..
Mozambique	461	14	0	15	13	44	17.7	10.1	1.2	980
Myanmar	93	27	1	0	..	10	..	..	0.6	81
Namibia	1,546	22	7	38	..	95	14.5	11.5	..	435
Nepal	80	21	2	12	6	10	3.4	2.9	1.0	565
Netherlands	7,055	5	45	118	..	100	31.2	17.7	..	..
New Zealand	9,646	7	41	101	310	98	34.4	23.1	3.0	598
Nicaragua	426	22	4	38	65	70	5.1	13.8	..	..
Niger	..	..	0	6	..	45	13.6	13.8	2.2	328
Nigeria	116	27	1	27	..	60	10.3	12.1	3.1	..
Norway	24,296	8	42	110	193	..	37.6	9.7	1.4	..
Oman	4,456	16	10	96	37	96	32.6	5.5	2.7	858
Pakistan	480	22	3	39	10	90	3.6	1.9	2.7	50
Panama	1,506	17	15	90	66	81	9.1	5.1	3.5	229
Papua New Guinea	..	..	1	5	..	..	4.0	12.8	..	..
Paraguay	900	5	6	77	35	..	7.2	5.7	4.8	799
Peru	899	9	10	55	99	92	15.4	8.0	2.9	624
Philippines	578	12	4	59	..	99	14.2	5.7	4.4	..
Poland	3,585	9	27	109	..	99	28.0	12.5	3.7	566
Portugal	4,799	8	40	127	178	99	25.7	26.4	4.5	1,365
Puerto Rico	..	..	27	86	..	100	..	..	..	..



	Electric power		Telephones					Affordability and efficiency			
	Consumption per capita kWh	Transmission and distribution losses % of output	Access and use			Quality Population covered by mobile cellular network ^a %	\$ per month		Telecommunications revenue ^a % of GDP	Mobile cellular and fixed-line subscribers per employee ^a	
			Fixed lines ^a per 100 people	Mobile cellular subscriptions ^a	International voice traffic ^a minutes per person		Residential fixed-line tariff ^a	Mobile cellular prepaid tariff ^a			
											2007
2006	2006	2007	2007	2007	2007	2008	2008	2007	2007		
Romania	2,402	10	20	106	41	98	12.2	11.9	3.5	617	
Russian Federation	6,122	11	31	115	..	95	11.7	8.6	2.6	439	
Rwanda	..	..	0	7	11	90	7.3	10.0	3.2	1,040
Saudi Arabia	7,080	7	17	117	216	98	9.2	8.8	3.0	933	
Senegal	150	26	2	29	26	85	17.4	8.4	9.9	1,859	
Serbia	4,040	16	41	115	144	92	4.9	4.9	5.0	787	
Sierra Leone	..	..	..	13	..	70	..	70.9	..	..
Singapore	8,520	5	41	129	1,531	100	7.1	4.0	2.9	..	
Slovak Republic	5,136	4	21	112	97	100	24.5	16.1	3.4	748	
Slovenia	7,124	6	42	96	92	100	20.5	12.4	3.2	587	
Somalia	..	..	1	7	..	..	..	..	..	..
South Africa	4,810	9	10	88	..	100	22.4	12.3	7.5	1,145	
Spain	6,206	9	45	108	..	99	30.8	33.3	4.2	809	
Sri Lanka	400	15	14	40	34	90	4.8	2.4	2.5	755	
Sudan	95	15	1	21	7	60	4.4	4.8	3.7	1,557	
Swaziland	..	..	4	33	..	90	4.8	12.1	12.7	..
Sweden	15,231	8	60	113	..	98	22.8	7.5	2.7	905	
Switzerland	8,360	7	65	109	..	100	29.0	35.5	3.2	549	
Syrian Arab Republic	1,466	24	17	31	79	96	1.2	9.1	3.0	409	
Tajikistan	2,241	16	5	35	..	..	..	23.3	2.9	114
Tanzania	59	21	0	21	0	65	10.9	11.1	..	..
Thailand	2,080	8	11	124	14	38	5.8	3.9	4.0	2,808	
Timor-Leste	..	..	0	7	18	69	..	..	8.0	645
Togo	97	46	2	18	5	85	13.1	18.0	7.4	1,059	
Trinidad and Tobago	5,006	6	23	113	..	100	19.7	7.9	2.6	..	
Tunisia	1,221	13	12	77	73	100	3.0	7.2	4.3	915	
Turkey	2,053	14	25	84	30	98	..	12.7	2.5	1,782	
Turkmenistan	2,123	14	9	7	..	14	..	17.2	0.7	72	
Uganda	..	..	1	14	7	80	12.6	10.4	3.2	255
Ukraine	3,400	12	28	119	57	100	4.2	8.2	5.7	..	
United Arab Emirates	14,567	7	32	177	..	100	5.0	4.1	2.7	852	
United Kingdom	6,185	8	55	118	..	100	27.3	20.5	3.7	..	
United States	13,564	6	54	85	..	100	17.2	15.3	3.1	389	
Uruguay	2,042	30	29	90	127	100	13.0	13.8	3.7	661	
Uzbekistan	1,694	9	7	22	12	75	..	1.8	2.5	117	
Venezuela, RB	3,174	22	18	87	..	90	7.0	24.7	3.8	..	
Vietnam	598	11	34	28	..	70	2.3	4.2	4.7	..	
West Bank and Gaza	..	..	9	28	..	95	..	9.6	0.8	880
Yemen, Rep.	190	23	4	14	..	68	0.8	4.9	..	..
Zambia	730	6	1	22	..	50	27.7	12.3	2.5	..	
Zimbabwe	900	7	3	9	21	75	..	3.4	..	381	
World	2,751 w	9 w	20 w	51 w	.. w	80 w	10.9 m	10.1 m	3.2 w	664 m	
Low income	309	16	4	22	..	54	9.0	10.1	3.3	301	
Middle income	1,651	12	17	48	..	83	8.7	8.9	3.2	595	
Lower middle income	1,269	11	15	39	..	80	5.4	8.4	3.1	624	
Upper middle income	3,242	12	23	84	..	95	11.9	12.3	3.3	566	
Low & middle income	1,380	12	14	42	..	76	8.7	9.1	3.3	624	
East Asia & Pacific	1,669	7	23	44	9	93	4.5	5.0	3.0	546	
Europe & Central Asia	3,835	12	26	95	..	92	9.0	9.4	2.9	532	
Latin America & Carib.	1,808	16	18	67	..	91	10.4	9.6	3.8	530	
Middle East & N. Africa	1,418	16	17	51	32	93	3.0	7.2	3.1	691	
South Asia	453	24	3	23	..	61	3.5	1.9	2.1	660	
Sub-Saharan Africa	531	11	2	23	..	56	11.6	11.8	4.7	499	
High income	9,675	6	50	100	..	99	27.3	16.1	3.1	747	
Euro area	6,956	6	53	117	..	99	28.7	18.7	2.8	725	

a. Data are from the International Telecommunication Union's (ITU) World Telecommunication Development Report database. Please cite the ITU for third-party use of these data.

About the data

The quality of an economy's infrastructure, including power and communications, is an important element in investment decisions for both domestic and foreign investors. Government effort alone is not enough to meet the need for investments in modern infrastructure; public-private partnerships, especially those involving local providers and financiers, are critical for lowering costs and delivering value for money. In telecommunications, competition in the marketplace, along with sound regulation, is lowering costs, improving quality, and easing access to services around the globe.

An economy's production and consumption of electricity are basic indicators of its size and level of development. Although a few countries export electric power, most production is for domestic consumption. Expanding the supply of electricity to meet the growing demand of increasingly urbanized and industrialized economies without incurring unacceptable social, economic, and environmental costs is one of the great challenges facing developing countries.

Data on electric power production and consumption are collected from national energy agencies by the International Energy Agency (IEA) and adjusted by the IEA to meet international definitions (for data on electricity production, see table 3.10). Electricity consumption is equivalent to production less power plants' own use and transmission, distribution, and transformation losses less exports plus imports. It includes consumption by auxiliary stations, losses in transformers that are considered integral parts of those stations, and electricity produced by pumping installations. Where data are available, it covers electricity generated by primary sources of energy—coal, oil, gas, nuclear, hydro, geothermal, wind, tide and wave, and combustible renewables. Neither production nor consumption data capture the reliability of supplies, including breakdowns, load factors, and frequency of outages.

Over the past decade new financing and technology, along with privatization and liberalization, have spurred dramatic growth in telecommunications in many countries. With the rapid development of mobile telephony and the global expansion of the Internet, information and communication technologies are increasingly recognized as essential tools of development, contributing to global integration and enhancing public sector effectiveness, efficiency, and transparency. The table presents telecommunications indicators covering access and use, quality, and affordability and efficiency.

Operators have traditionally been the main source of telecommunications data, so information on subscribers has been widely available for most countries. This gives a general idea of access, but a more precise measure is the penetration rate—the share of households with access to telecommunications. During the past few years more information on information and communication technology use has become available from household and business surveys. Also important are data on actual use of telecommunications equipment. Ideally, statistics on telecommunications (and other information and communications technologies) should be compiled for all three measures: subscription and possession, access, and use. The quality of data varies among reporting countries as a result of differences in regulations covering data provision and availability.

Globally, there have been huge improvements in access to telecommunications, driven mainly by mobile telephony. By 2007 worldwide mobile cellular phone subscribers numbered 3.3 billion, far outpacing the 1.1 billion fixed-line subscribers. By 2006 approximately 99 percent of the population in high-income countries and about 77 percent of the population in developing countries were covered by a mobile cellular network (within areas served by a mobile cellular signal). Indeed, in many developing countries, especially in Sub-Saharan Africa, the number of mobile phones has overtaken the number of fixed-line phones.

Although access is the key to delivering telecommunications services to people, if the service is not affordable to most people, then goals of universal usage will not be met. Two indicators of telecommunications affordability are presented in the table: fixed-line telephone service tariff and prepaid mobile cellular service tariff. Telecommunications efficiency is measured by total telecommunications revenue divided by GDP and by mobile cellular and fixed-line telephone subscribers per employee.

Definitions

- **Electric power consumption per capita** measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants divided by midyear population.
- **Electric power transmission and distribution losses** are losses in transmission between sources of supply and points of distribution and in distribution to consumers, including pilferage.
- **Fixed telephone lines** are telephone lines connecting a subscriber to the telephone exchange equipment.
- **Mobile cellular telephone subscriptions** are subscriptions to a public mobile telephone service using cellular technology, which provide access to the public switched telephone network. Post-paid and prepaid subscriptions are included.
- **International voice traffic** is the sum of international incoming and outgoing telephone traffic (in minutes) divided by total population.
- **Population covered by mobile cellular network** is the percentage of people that live in areas served by a mobile cellular signal regardless of whether they use it.
- **Residential fixed-line tariff** is the monthly subscription charge plus the cost of 30 three-minute local calls (15 peak and 15 off-peak).
- **Mobile cellular prepaid tariff** is based on the Organisation for Economic Co-operation and Development's low-user definition, which includes the cost of monthly mobile use for 25 outgoing calls per month spread over the same mobile network, other mobile networks, and mobile to fixed-line calls and during peak, off-peak, and weekend times as well as 30 text messages per month.
- **Telecommunications revenue** is the revenue from the provision of telecommunications services such as fixed-line, mobile, and data divided by GDP.
- **Mobile cellular and fixed-line subscribers per employee** are telephone subscribers (fixed-line plus mobile) divided by the total number of telecommunications employees.

Data sources

Data on electricity consumption and losses are from the IEA's *Energy Statistics and Balances of Non-OECD Countries 2008*, the IEA's *Energy Statistics of OECD Countries 2008*, and the United Nations Statistics Division's *Energy Statistics Yearbook*. Data on telecommunications are from the International Telecommunication Union's World Telecommunication Development Report database and World Bank estimates.