

# Approximate conversion factors

Statistical Review of World Energy

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<b>Crude oil*</b>	To convert				
	Tonnes (metric)	Kilolitres	Barrels	US gallons	Tonnes/year
From	Multiply by				
Tonnes (metric)	1	1.165	7.33	307.86	–
Kilolitres	0.8581	1	6.2898	264.17	–
Barrels	0.1364	0.159	1	42	–
US gallons	0.00325	0.0038	0.0238	1	–
Barrels/day	–	–	–	–	49.8

\*Based on the worldwide average gravity

<b>Products</b>	To convert			
	Barrels to tonnes	Tonnes to barrels	Kilolitres to tonnes	Tonnes to kilolitres
From	Multiply by			
Liquified petroleum gas (LPG)	0.086	11.60	0.542	1.844
Gasoline	0.120	8.35	0.753	1.328
Kerosene	0.127	7.88	0.798	1.253
Gas oil/diesel	0.134	7.46	0.843	1.186
Residual fuel oil	0.157	6.35	0.991	1.010
Product basket	0.125	7.98	0.788	1.269

<b>Natural gas and LNG</b>	To convert					
	Billion cubic metres NG	Billion cubic feet NG	Million tonnes oil equivalent	Million tonnes LNG	Trillion British thermal units	Million barrels oil equivalent
From	Multiply by					
1 billion cubic metres NG	1.000	35.315	0.860	0.735	34.121	5.883
1 billion cubic feet NG	0.028	1.000	0.024	0.021	0.966	0.167
1 million tonnes oil equivalent	1.163	41.071	1.000	0.855	39.683	6.842
1 million tonnes LNG	1.360	48.028	1.169	1.000	46.405	8.001
1 trillion British thermal units	0.029	1.035	0.025	0.022	1.000	0.172
1 million barrels oil equivalent	0.170	6.003	0.146	0.125	5.800	1.000

<b>Units</b>			
1 metric tonne	= 2204.62 lb	= 1.1023 short tons	
1 kilolitre	= 6.2898 barrels		
1 kilolitre	= 1 cubic metre		
1 kilocalorie (kcal)	= 4.1868 kJ	= 3.968 Btu	
1 kilojoule (kJ)	= 0.239 kcal	= 0.948 Btu	
1 British thermal unit (Btu)	= 0.252 kcal	= 1.055 kJ	
1 kilowatt-hour (kWh)	= 860 kcal	= 3600 kJ	= 3412 Btu

<b>Calorific equivalents</b>	
One tonne of oil equivalent equals approximately	
Heat units	<ul style="list-style-type: none"> <li>• 10 million kilocalories</li> <li>• 42 gigajoules</li> <li>• 40 million Btu</li> </ul>
Solid fuels	<ul style="list-style-type: none"> <li>• 1.5 tonnes of hard coal</li> <li>• 3 tonnes of lignite and sub-bituminous coal</li> </ul>
Gaseous fuels	<ul style="list-style-type: none"> <li>• See natural gas and LNG table</li> </ul>
Electricity	<ul style="list-style-type: none"> <li>• 12 mega watt-hours</li> </ul>

One million tonnes of oil produces about 4400 gigawatt-hours (=4.4 terawatt hours) of electricity in a modern power station.	
1 tonne of ethanol	= 0.68 tonne of oil of oil equivalent
1 tonne of biodiesel	= 0.88 tonne of oil of oil equivalent
1 barrel of ethanol	= 0.58 barrels of oil equivalent
1 barrel of biodiesel	= 0.86 barrels of oil of oil equivalent

Other terms
Tonnes: metric equivalent of tons