
J. Abbreviations and terms

- a. Acronyms and abbreviations**
- b. Heat rates for energy commodities**
- c. Conversion and equivalency tables**

Acronyms and abbreviations

2D	Two dimensional
3D	Three dimensional
A.B.	Assembly Bill
<i>AEO</i>	<i>Annual Energy Outlook</i>
<i>AEO2008</i>	<i>Annual Energy Outlook 2008</i>
AIS	Automatic identification system
AMFA	Alternative Motor Fuels Act of 1988
ANS	Alaska North Slope
ANWR	Arctic National Wildlife Refuge
API	American Petroleum Institute
APU	Auxiliary power units
ATA	American Trucking Association
ATA	Air Transport Association
AUV	Autonomous underwater vehicle
B2, B5, B20	Biodiesel blends
Bbl	Barrel
Bbl/d	Barrels per day
Bbls	Barrels
BCAP	The Biomass Crop Assistance Program
Bcf	Billion cubic feet
Bcf/d	Billion cubic feet per day
BEV	Battery electric vehicle
BLM	Bureau of Land Management
Boe	Barrels of oil equivalent
BPA	Bonneville Power Administration
BTL	Biomass-to-liquids
Btu	British thermal unit
CAAA90	Clean Air Act Amendments of 1990
CAFE	Corporate average fuel economy
CAIR	Clean Air Interstate Rule
CAMR	Clean Air Mercury Rule
CBM	Coalbed methane
CBO	Congressional Budget Office
CBCCI	Conference Board Consumer Confidence Index
CCS	Carbon or CO ₂ capture and sequestration
CEPS	Clean energy portfolio standard
CEO	Chief Executive Officer
CERA	Cambridge Energy Research Associates
CFDC	Clean Fuel Development Coalition
CFL	Compact fluorescent light bulb
CHP	Combined heat and power
CIA	Central Intelligence Agency
CO ₂	Carbon dioxide

CPI	Consumer Price Index
CRP	Conservation Reserve Program
CRS	Congressional Research Service
CSP	Concentrated solar power
CT	Compliant tower
CTD	Coiled tubing drilling
CTL	Coal-to-liquids
DAP	Diammonium phosphate
DOD	US Department of Defense
DOE	US Department of Energy
DOI	US Department of the Interior
DP	Dynamically positioned
DTS	Disconnectable turret/buoy system
E&P	Exploration and production
E10	Gasoline containing up to 10 percent ethanol by volume
E85	Fuel containing a blend of 70 to 85 percent ethanol and 30 to 15 percent gasoline by volume
EDTA	Electric Drive Transportation Association
EERA	Energy Efficiency and Renewable Energy (part of the Department of Energy)
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EISA2007	Energy Independence and Security Act of 2007
EOR	Enhanced oil recovery
EPA	US Environmental Protection Agency
EPACT1992	Energy Policy Act of 1992
EPACT2005	Energy Policy Act of 2005
EPCA	Energy Policy and Conservation Act of 2000
EPIA	European Photovoltaic Industries Association
EPRI	Electric Power Research Institute
ERD	Extended reach drilling
EVA	Energy Ventures Analysis, Inc.
EU	European Union
EC	European Commission
EWG	Energy Watch Group
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigations
FCV	Fuel cell vehicle
FFV	Flex-fuel vehicle
FHWA	Federal Highway Administration
FLIR	Forward looking infra red
FP	Fixed platform
FPS	Floating production system
FPSO	Floating production, storage, and offloading
FPU	Floating production units
FSHR	Free-standing hybrid risers

Ft	Feet
FY	Fiscal year
G8	Group of Eight
GDP	Gross domestic product
GHG	Greenhouse gas
GII	Global Insights, Inc.
GOM	Gulf of Mexico
GT	Gigatonnes
GTL	Gas-to-liquids
GVWR	Gross vehicle weight rating
GWEC	Global Wind Energy Council
GWOT	Global war on terror
Gwh	Gigawatt hours
HDD	Horizontal directional drilling
HEV	Hybrid electric vehicle
HIPPS	High-Integrity Pressure Protection System
HMPE	High modulus polyethylene
HP	High pressure
HP/HT	High pressure, high temperature
H.R.	House of Representatives
HT	High temperature
HTF	US Highway Trust Fund
IAEA	International Atomic Energy Agency
IAGS	Institute for the Analysis of Global Security
LANGV	International Association for Natural Gas Vehicles
ICAP	International Carbon Action Partnership
ICCT	International Council on Clean Transportation
ICE	Internal combustion engine
IEA	International Energy Agency
IECC	International Energy Conservation Code
IEEJ	Institute of Energy Economics Japan
IFDC	International Center for Soil Fertility & Agricultural Development
IGCC	Integrated gassification combined cycle
INFORUM	Inter-industry Forecasting Project at the University of Maryland
IOC	International oil company
ITC	International Trade Commission
ITOPF	International Tanker Owners Pollution Federation
JAS	Joint Association Survey of Drilling Costs
kJ/kg	Kilojoules per kilogram
LC	Lignocellulosic ethanol
LDV	Light-duty vehicle
LED	Light-emitting diode
LEOS	Leak and location system
LFG	Landfill gas
LNG	Liquefied natural gas
LPG	Liquid petroleum gases

M85	Fuel containing a blend of 85 percent methanol and 15 percent gasoline
M100	Fuel containing 100 percent methanol
Mbo/d	Thousand barrels of oil per day
MMbbls	Million barrels
MM bbl	Million barrels
MMcf/d	Million cubic feet per day
MIT	Massachusetts Institute of Technology
MMS	Minerals Management Service
MMV	Modeling, monitoring, and verification
MOA	Memorandum of Agreement
MODU	Mobile offshore drilling unit
mpg	Miles per gallon
MSW	Municipal solid waste
MW	Megawatt
MW _e	Megawatt electrical
NAS	National Academy of Sciences
NCGA	National Corn Growers Association
NEMA	National Electrical Manufacturers Association
NEMS	National Energy Modeling System (EIA)
NETL	National Energy Technology Laboratory
NEV	Net energy value
NG	Natural gas
NGL	Natural gas liquids
NGPL	Natural gas plant liquids
NOAA	National Oceanic and Atmospheric Administration
NOC	National oil company
NO _x	Nitrogen oxides
NPC	National Petroleum Council
NRC	National Research Council
NRC	US Nuclear Regulatory Commission
NRCD	Natural Resources Defense Council
NREL	National Renewable Energy Laboratory
NSTC	National Science and Technology Council
NYMEX	New York Mercantile Exchange
OBS	Ocean bottom seismograph
OCS	Outer continental shelf
OECD	Organization for Economic Cooperation and Development
OMB	Office of Management and Budget
OPEC	Organization of the Petroleum Exporting Countries
PDQ	Production, drilling, and quarters
PEIA	Programmatic Environmental Impact Statement
PHEV	Plug-in hybrid electric vehicle
P.L.	Public Law
PPI	Producer price index
PRB	Powder River Basin (Wyoming and Montana)
PROALCOOL	Brazilian national ethanol program

PTC	Production tax credit
PV	Solar photovoltaic
R&D	Research and development
REC	Renewable energy certificate
RESS	Rechargeable energy storage system
RFA	Renewable Fuels Association
RFG	Reformulated gasoline
RFS	Renewable Fuels Standard
RGGI	Regional Greenhouse Gas Initiative
ROV	Remotely operated vehicle
RP	Recommended Practice
RPS	Renewable portfolio standard
RPM	Revenue passenger mile
RTM	Revenue ton mile
SEER	Strategic Energy and Economic Research, Inc.
S.B.	Senate Bill
SO ₂	Sulfur dioxide
SITP	Shut-in tubing pressure
SP	Spar platform
SS	Subsea system
SSTAR	Sea star
STEG	Solar thermal electric generation
STEO	<i>Short-Term Energy Outlook</i> (EIA)
TLP	Tension leg platform
T _{oe}	Ton of oil equivalent
T/V	Tank vessel
TVD	True vertical depth
uERD	Ultra extended reach drilling
ULSD	Ultra-low-sulfur diesel
US	United States
U.S.	United States
USDA	United States Department of Agriculture
USCG	United States Coast Guard
USGS	US Geological Survey
UTRR	Undiscovered technically recoverable resources
VEETC	Volumetric Ethanol Excise Tax Credit
VHF-FM	Very High Frequency – Frequency Modulated
VLA	Vertically-loaded anchor
VMT	Vehicle miles traveled
VSP	Verticle seismic profile
VTC	Vessel traffic center
VTS	Vessel traffic systems
WTI	West Texas Intermediate (crude oil)

Heat rates for energy commodities

Fuel	Units	Approximate Heat Content
Coal		
Production	million Btu per short ton	20.310
Consumption	million Btu per short ton	20.183
Coke Plants	million Btu per short ton	26.263
Industrial	million Btu per short ton	21.652
Residential and Commercial	million Btu per short ton	22.016
Electric Power Sector	million Btu per short ton	19.952
Imports	million Btu per short ton	25.073
Exports	million Btu per short ton	25.378
Coal Coke	million Btu per short ton	24.800
Crude Oil		
Production	million Btu per barrel	5.800
Imports	million Btu per barrel	5.980
Liquids		
Consumption	million Btu per barrel	5.338
Motor Gasoline	million Btu per barrel	5.218
Jet Fuel, Kerosene Type	million Btu per barrel	5.670
Distillate Fuel Oil	million Btu per barrel	5.790
Residual Fuel Oil	million Btu per barrel	6.287
Liquefied Petroleum Gas	million Btu per barrel	3.605
Kerosene	million Btu per barrel	5.670
Petrochemical Feedstocks	million Btu per barrel	5.554
Unfinished Oils	million Btu per barrel	6.118
Imports	million Btu per barrel	5.450
Exports	million Btu per barrel	5.727
Ethanol	million Btu per barrel	3.539
Biodiesel	million Btu per barrel	5.376
Natural Gas Plant Liquids		
Production	million Btu per barrel	3.712
Natural Gas		
Production, Dry	Btu per cubic foot	1,029
Consumption	Btu per cubic foot	1,029
End-Use Sectors	Btu per cubic foot	1,030
Electric Power Sector	Btu per cubic foot	1,028
Imports	Btu per cubic foot	1,025
Exports	Btu per cubic foot	1,009
Electricity Consumption	Btu per kilowatthour	3,412

Btu = British thermal unit.

Note: Conversion factors vary from year to year. Values correspond to those published by EIA for 2006 and may differ slightly from model results.

Sources: [EIA Annual Energy Outlook 2008](#). Appendix G, Table G-1.

Conversion and equivalency tables

Crude oil* From	To:				Tonnes per year
	Tonnes (metric)	Kilolitres	Barrels	US gallons	
	Multiply by				
Tonnes (metric)	1	1.165	7.33	307.86	-
Kilolitres	0.858111	1	6.2898	264.17	-
Barrels	0.1364	0.159	1	42	-
US gallons	0.00325	0.0038	0.0238	1	-
Barrels per day	-	-	-	-	49.8

* Based on worldwide average gravity

Products	To convert barrels to tonnes	Tonnes to barrels	Kilolitres to tonnes	Tonnes to kilolitres
		Multiply by		
Liquefied petroleum gas (LPG)	0.086	11.6	0.542	1.844
Gasoline	0.118	8.5	0.740	.351
Kerosene	0.128	7.8	0.826	1.240
Gas oil/diesel	0.133	7.5	0.839	1.192
Fuel oil	0.149	6.7	0.939	1.065

Natural gas (NG) and liquefied natural gas (LNG)	To billion cubic meters NG	Billion cubic feet NG	Million tonnes of equivalent	Million tonnes LNG	Trillion British thermal units	Million barrels oil equivalent
		Multiply by				
1 billion cubic metres NG	1	35.3	0.90	0.73	36	6.29
1 billion cubic feet NG	0.028	1	0.026	0.021	1.03	0.18
1 million tonnes oil equivalent	1.111	39.2	1	0.805	40.4	7.33
1 million tonnes LNG	1.38	48.7	1.23	1	52.0	8.68
1 trillion British thermal units	0.028	0.98	0.025	0.02	1	0.17
1 million barrels oil equivalent	0.16	5.61	0.14	0.12	5.8	1

Units			
1 metric tonne =	2204.62 lb =	1.1023 shot tons	
1 kilolitre =	6.2898 barrels =	a cubic metre	
1 kilocalorie (kcal) =	4.187 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 =	3,600kJ =	3,412 Btu

One tonne of oil equivalent equals approximately:	
Heat units	10 million kilocalories
	42 gigajoules
	40 million British thermal units
Solid fuels	1.5 tonnes of hard coal
	3 tonnes of lignite
Gaseous fuels	See Natural gas and Liquefied natural gas table above
Electricity	12 megawatt hours

One million tonnes of oil or oil equivalent produces about 4,400 gigawatt-hours (= 4.4 terawatt-hours) of electricity in a modern power station.

Source: [BP Statistical Review of World Energy 2008](#)