



«The closing Window»

Energia&clima

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20/10/2024

Energia: semplicità complessa

Il mondo dell'energia non è cresciuto in maniera razionale. Il sistema energetico di oggi ha un secolo di vita, si è sviluppato per comparti stagni, secondo esigenze locali e nazionali. Non tiene conto, ancora oggi, del fattore ambientale. Il valore totale dell'infrastruttura energetica mondiale è stimato in circa 100.000 miliardi di dollari. Ed è alimentato per l'80% da fonti fossili che sono climalteranti.



La concezione comune



On

Off

Energia ed elettricità

Questa per l'opinione pubblica è energia



Energia ed elettricità

Questa per l'opinione pubblica non è energia



Energia ed elettricità

Questa per l'opinione pubblica non è energia



La babela energetica

Approximate conversion factors

Crude oil*	To tonnes (metric)	kilolitres	barrels	US gallons	tonnes per 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 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	1.351
Kerosene	0.128	7.8	0.806	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 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	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 = 2204.62lb
 = 1.1023 short tons
 1 kilolitre = 6.2898 barrels = 1 cubic metre
 1 kilocalorie (kcal) = 4.187kJ = 3.968Btu
 1 kilojoule (kJ) = 0.239kcal = 0.948Btu
 1 British thermal unit (Btu) = 0.252kcal
 = 1.055kJ
 1 kilowatt-hour (kWh) = 860kcal
 = 3600kJ = 3412Btu

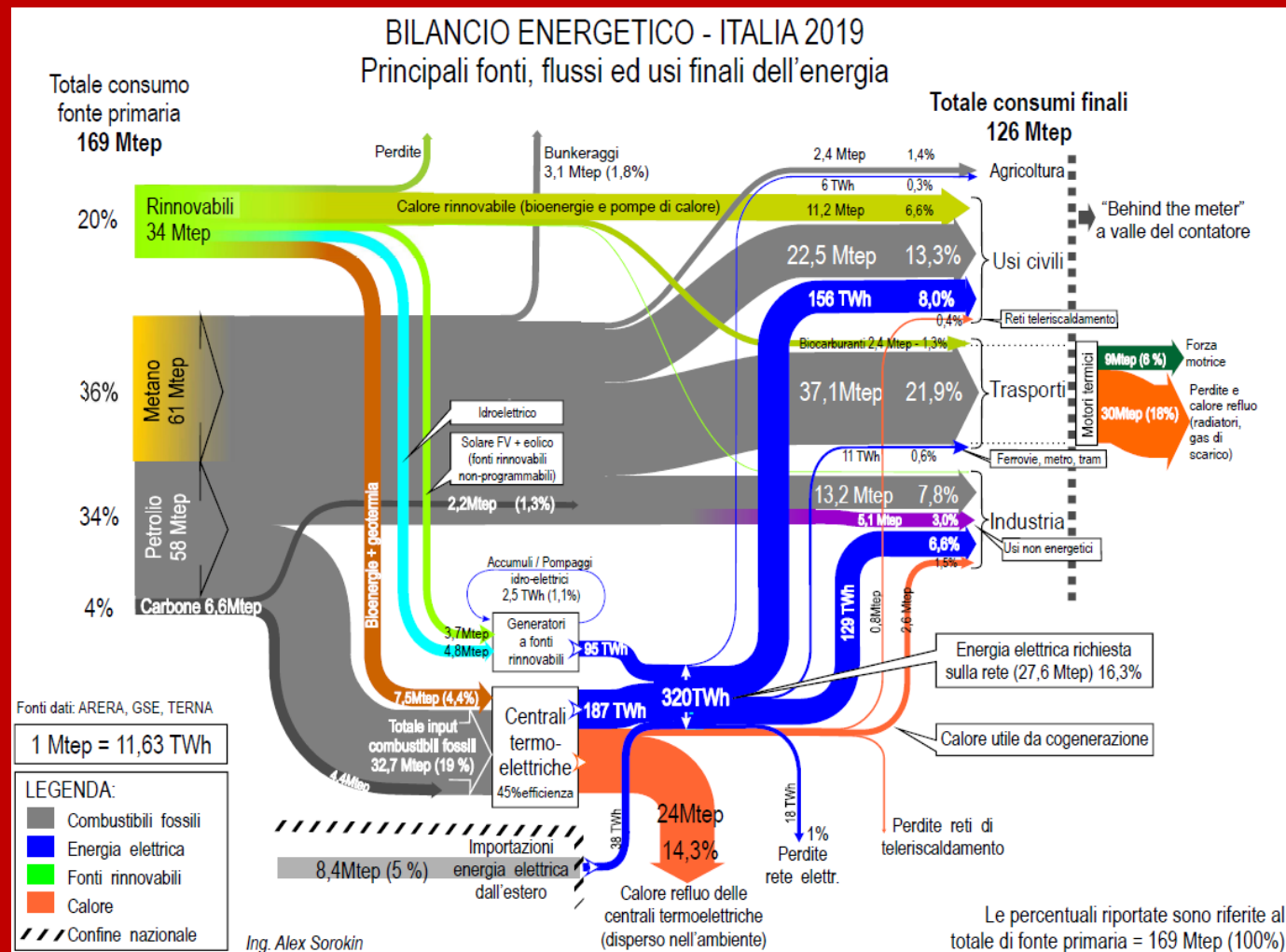
Calorific equivalents

One tonne of oil equivalent equals approximately:

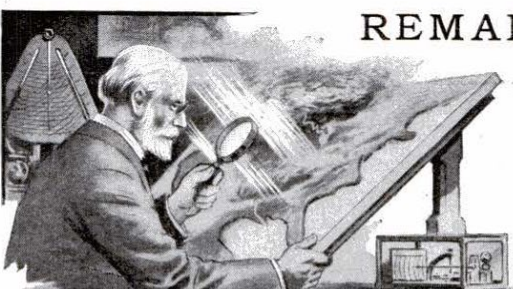
Heat units	10 million kilocalories 42 gigajoules 40 million British thermal units
Solid fuels	1.5 tonnes of hard coal 3 tonnes of lignite
Gaseous fuels	See Natural gas and liquefied natural gas table
Electricity	12 megawatt-hours

One million tonnes of oil or oil equivalent produces about 4400 gigawatt-hours (= 4.4 terawatt-hours) of electricity in a modern power station.

L'energia è complessa



Informazione&storia



REMARKABLE WEATHER OF 1911

The Effect of the Combustion
of Coal on the Climate — What
Scientists Predict for the Future

By FRANCIS MOLENA

THE year 1911 will long be remembered for the violence of its weather. The spring opened mild and delightful, but in June a torrid wave of unparalleled severity swept over the country. The cities baked and gasped for breath, while the burning sun and hot winds withered the corn and cost the farmers a million dollars a day. A little later England was scorched

The mean temperature of every month except November was above the average of that of the 40 years covered by the records of the United States Weather Bureau. The average daily excess was from four to six degrees.

With only one month out of twelve below normal, one may well ask if the climate is not changing and getting warmer. There is a general im-

1912: 301 ppm - 3,16 Gt/anno*

1988: 352 ppm – 18,83 Gt/anno*

"All the News
That's Fit to Print"

The New York Times

NEW YORK, FRIDAY, JUNE 24, 1988

Late Edition
New York: Today, sunny, cool. High 74-75. Tonight, increasing clouds. Low 57-65. Tomorrow, morning clouds, then windy and warmer. High 74-80. Yesterday: High 87, low 67. Details, page A18.

VOL.CXXXVII...No. 47,546

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Global Warming Has Begun, Expert Tells Senate



Global Warming: Greenhouse Effect?
Average global temperatures through the first five months of 1988. As a baseline, scientists use the global average from 1950 to 1980.

Drought Raising Food Prices; Inflation Effect Seems Minor

IMMIGRATION LAW IS FAILING TO CUT FLOW FROM MEXICO

ECONOMIC FACTORS CITED

Illegal Entries Are on the Rise as More Come From Large Cities and Stay Longer

High Court Getting Unusual Plea Not to Reverse Key Rights Ruling

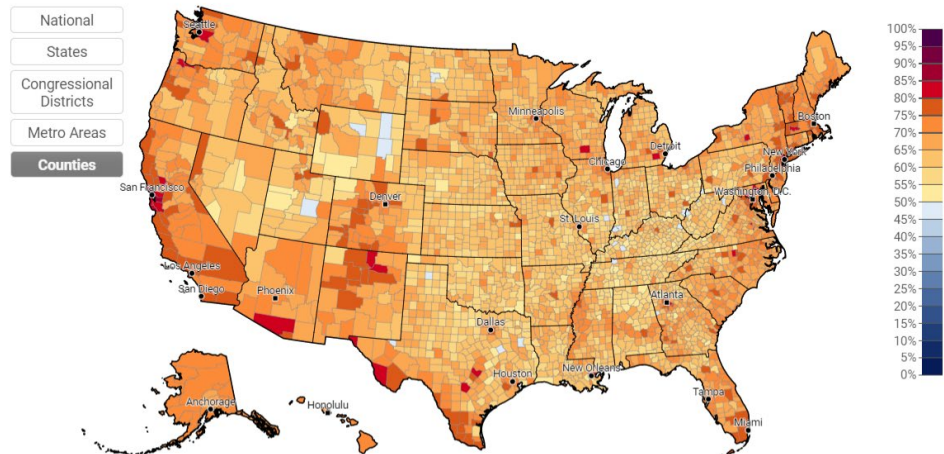
*solo emissioni industriali ed energetiche

Informare sul clima

Estimated % of adults who think global warming is happening (nat'l avg. 72%), 2021

Select Question: Global warming is happening

Click on map to select geography, or:



UCSB
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YALE PROGRAM ON
Climate Change
Communication

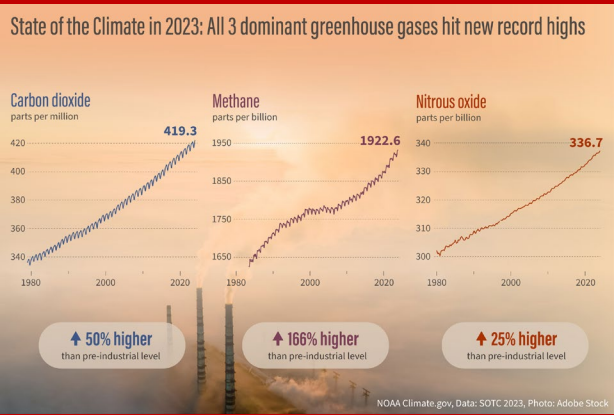
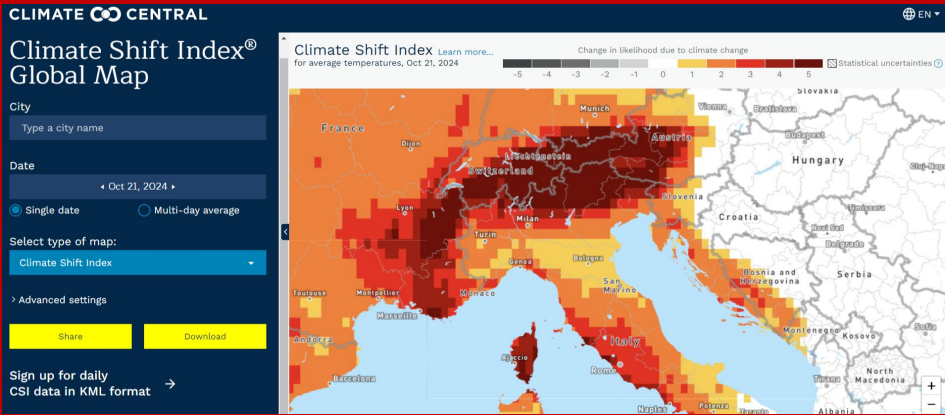
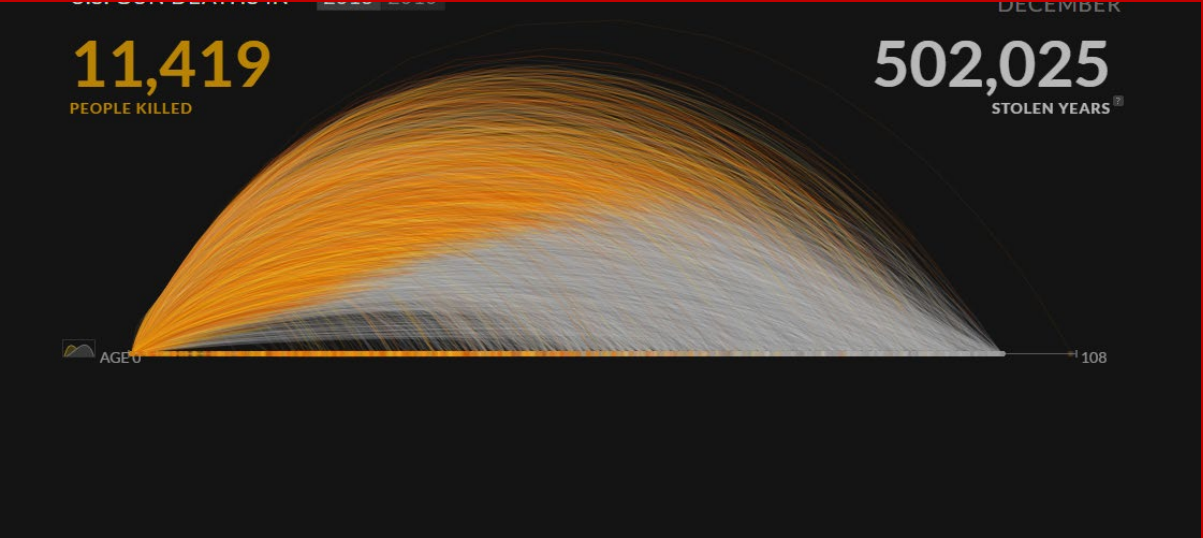
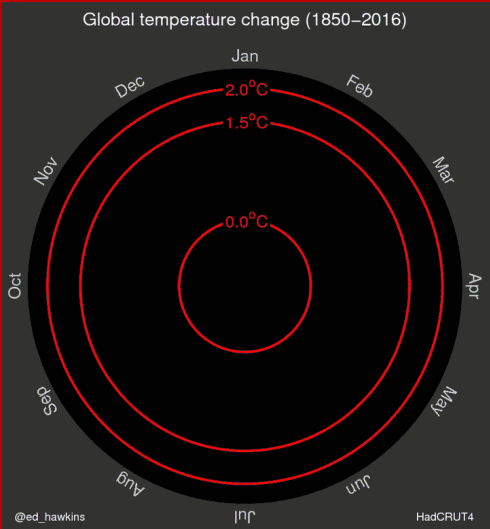
UtahState
University

theguardian

Firestorm

The photograph of the Holmes family hiding from a violent bushfire in Tasmania was shared around the world. But what became of them? In a unique multimedia project, the family speak exclusively to the Guardian about the day their community was devastated, and the new breed of bushfire that is impossible to fight.

Nuovi metodi d'informazione



Punto d'arrivo

2024: 422,04 ppm – 38 Gt/anno*

+1.56°C

Il più caldo Agosto dal 1880

L'integrazione tra i generi

An aerial photograph showing a flooded road. A dark-colored car is driving through the water, leaving a large wake. To its left, a motorcycle is also in the water, creating a smaller wake. The water is a murky, brownish-grey color, and the road surface is visible beneath the water. The background shows a hazy, overcast sky.

The climate disaster is here

Earth is already becoming unlivable. Will governments act to stop this disaster from getting worse?

by Oliver Milman, Andrew Witherspoon, Rita Liu, and Alvin Chang

Grazie per l'attenzione

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