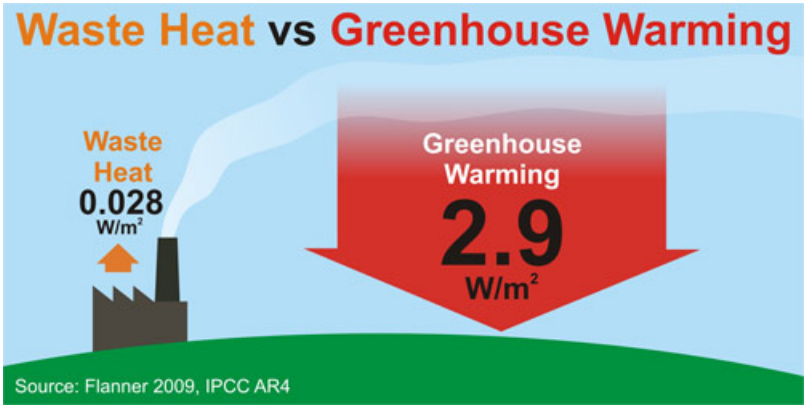
This is the print version of the Skeptical Science article 'It's waste heat', which can be found at http://sks.to/waste.

Greenhouse warming 100 times greater than waste heat

What The Science Says:
The contribution of waste heat to the global climate is 0.028 W/m^2. In contrast, the contribution from human greenhouse gases is 2.9 W/m^2. Greenhouse warming is adding about 100 times more heat to our climate than waste heat.

Climate Myth: It's waste heat
"Global warming is mostly due to heat production by human industry since the 1800s, from nuclear power and fossil fuels, better termed hydrocarbons, – coal, oil, natural gas. Greenhouse gases such as carbon dioxide (CO2 play a minor role even though they are widely claimed the cause." (Morton Skorodin)

When humans use energy, it gives off heat. Whenever we burn fossil fuels, heat is emitted. This heat doesn't just disappear - it dissipates into our environment. How much does waste heat contribute to global warming? This has been calculated in Flanner 2009 (if you want to read the full paper, access details are posted here). Flanner contributes that the contribution of waste heat to the global climate is 0.028 W/m^2. In contrast, the contribution from human greenhouse gases is 2.9 W/m^2 (IPCC AR4 Section 2.1). Waste heat is about 1% of greenhouse warming.



What does these numbers mean? They refer to radiative forcing, the change in energy flux at the top of the atmosphere. Or putting it in plain English, the amount of heat being added to our climate. Greenhouse warming is currently adding about 100 times more heat to our climate than waste heat.

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Skeptical Science explains the science of global warming and examines climate misinformation through the lens of peer-reviewed research. The website won the Australian Museum 2011 Eureka Prize for the Advancement of Climate Change Knowledge. Members of the Skeptical Science team have authored peer-reviewed papers, a college textbook on climate change and the book Climate Change Denial: Heads in the Sand. Skeptical Science content has been used in university courses, textbooks, government reports on climate change, television documentaries and numerous books.

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