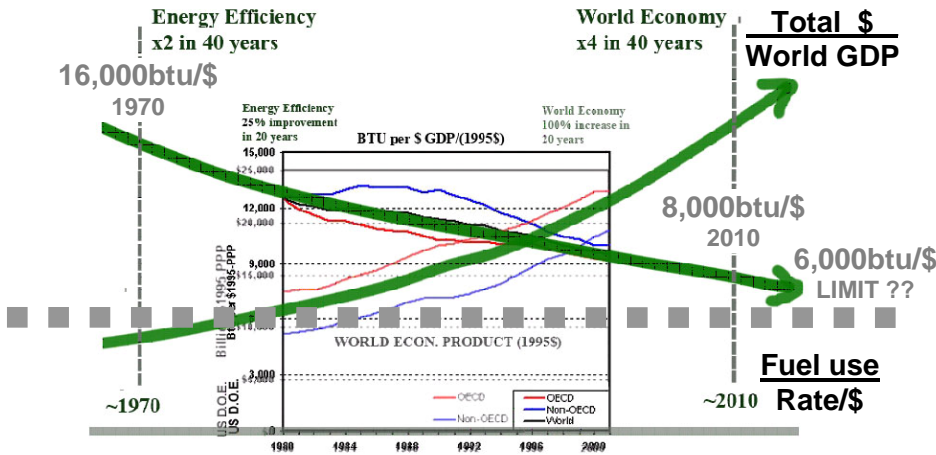


8000btu/\$ - 0.1sfPV/\$ - .57MTonCO<sup>2</sup>/\$1000 - 12ozCO<sup>2</sup>/\$

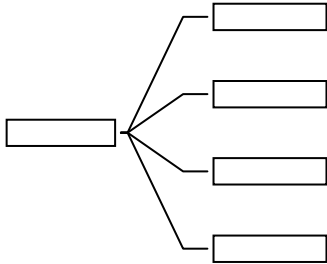
## Measures EMBODIED ENERGY & CO<sup>2</sup>



Global average fuel use per dollar of GDP counts the whole cascade of fuel uses behind our spending choices. **It exposes hidden 'embodied' impacts many times the size of direct fuel uses.** Adding the unmeasurable energy content provides a far better basis for comparing real impact choices.

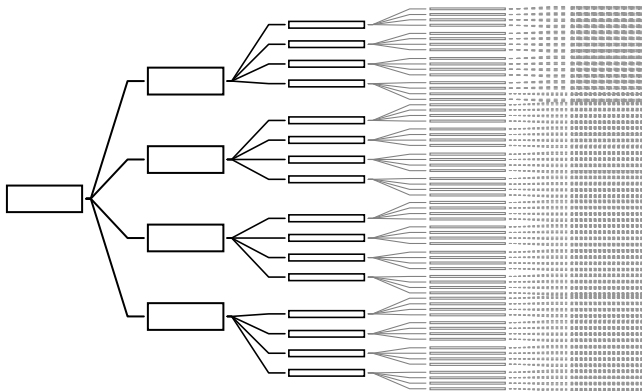
(US D.O.E. 20 yr Study of Global Figures)

## Total Energy consumed by our **Uses**



What's accountable?  
Driving to work mainly uses energy for fuel. A Building mainly uses fuels for heating, cooling, lights, equipment and perhaps cooking or other things.

## Total Energy consumed by our **Choices**



What's unaccounted?  
Often more than 10 times what's accounted for. The spending for the car, gas, insurance, maintenance and taxes for the road, etc., going to the people who bring those things to you and support their whole lifestyles, in addition to the direct fuel use.

Different measures tell different sides of a story. This is a model for a practical way to compare totals of different things, set goals, and compensations for not meeting them, for a selection of global impact measures. [The first three columns show total btu's, CO2, area of PV, for a sample project using my DollarShadow method. Other measures are in my larger spreadsheet HDS-TBalanceInventoryComp.xls in my resource directory [www.synapse9.com/design/](http://www.synapse9.com/design/)

## Total Balance Inventory (model)

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The sample project is a dance class center in Greenpoint Brooklyn to serve NYC schools, to be built on a site formerly occupied by small brownstones and a storefront. See [www.synapse9.com/design/dollarshadow.htm](http://www.synapse9.com/design/dollarshadow.htm) for references, discussion of the method and using photo voltaic panel equivalence (pv Footprint) to represent a project's energy use.

### ESTIMATED TOTALS

note1

PRIOR USE	[1970 Brownstones]	EST. ENERGY		EST. CO2		pv FOOTPRINT		FOOTPRINT B	
		Cost/yr (1995\$)	Annual mbtu's	Cost/yr (1995\$)	Annual MTons	PV area MultSites	PV ht /SiteWidth	Cost	Acres
15yr AMORT.DEVL.		\$ .16 m	1,879m	\$ .16 m	156.6	1.4xSite			
OPERATIONS		\$ .47 m	5,638m	\$ .47 m	469.8	4.3xSite			
total		\$ .63 m	7,517m	\$ .63 m	626.4	5.7xSite	626ft		
TARGET USE	[one target choice could be to aim or compensate for meeting for the world's 2050 target for a project of this size]								
AMORT.DEVL.									
OPERATIONS									
total									
NEW USE	[2010 Dance Studios]								
15yr AMORT.DEVL.		\$ 5.1 m	32,853m	\$ 5.1 m	2,926.0	37xSite			
OPERATIONS		\$ 12. m	76,800m	\$ 12. m	6,840.0	87xSite			
total		\$ 17.1 m	109,653m	\$ 17.1 m	9,766.0	125xSite	2.60mi		

### ADJUSTMENTS

Then the contributions of high or low impact parts of the development or operating costs, and for compensations having effects beyond the project, are listed.

MEASURED PARTS	EST. ENERGY		EST. CO2		FOOTPRINT A		FOOTPRINT B	
	Cost	btu's	Cost	btu's	Cost	btu's	Cost	btu's
AMORT.DEVL.								
OPERATIONS								
total								
COMPENSATIONS								
AMORT.DEVL.								
OPERATIONS								
total								

### ADJ. TOTALS

Then the first estimates are adjusted by factoring in the non-average parts

NEW USE								
AMORT.DEVL.								
OPERATIONS								
total								

### PERFORMANCE

Then the adjusted totals are compared to the target

NEW USE	EST. ENERGY		EST. CO2		FOOTPRINT A		FOOTPRINT B	
	Cost	btu's	Cost	btu's	Cost	btu's	Cost	btu's
LIFECYCLE DEVL								
OPERATIONS								
total								