

6TH WORLD WATER FORUM

How should we evaluate energy impacts on water resources?



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The Ministerial Roundtable on Water and Energy (5th World Water Forum) recommended that...

“Scientific research on water footprint of energy must be advanced.”



One unit of energy produced with less water is preferable to another unit of energy produced with more water?

Primary energy carriers		Global average water footprint (m³/GJ)
Non-renewable	Natural gas	0.11
	Coal	0.16
	Crude oil	1.06
	Uranium	0.09
Renewable	Wind energy	0.00
	Solar thermal	0.27
	Hydropower	22
	Biomass energy	70 (range: 10-250)

Water withdrawal or water consumption ?

Rain fed or irrigated crops?

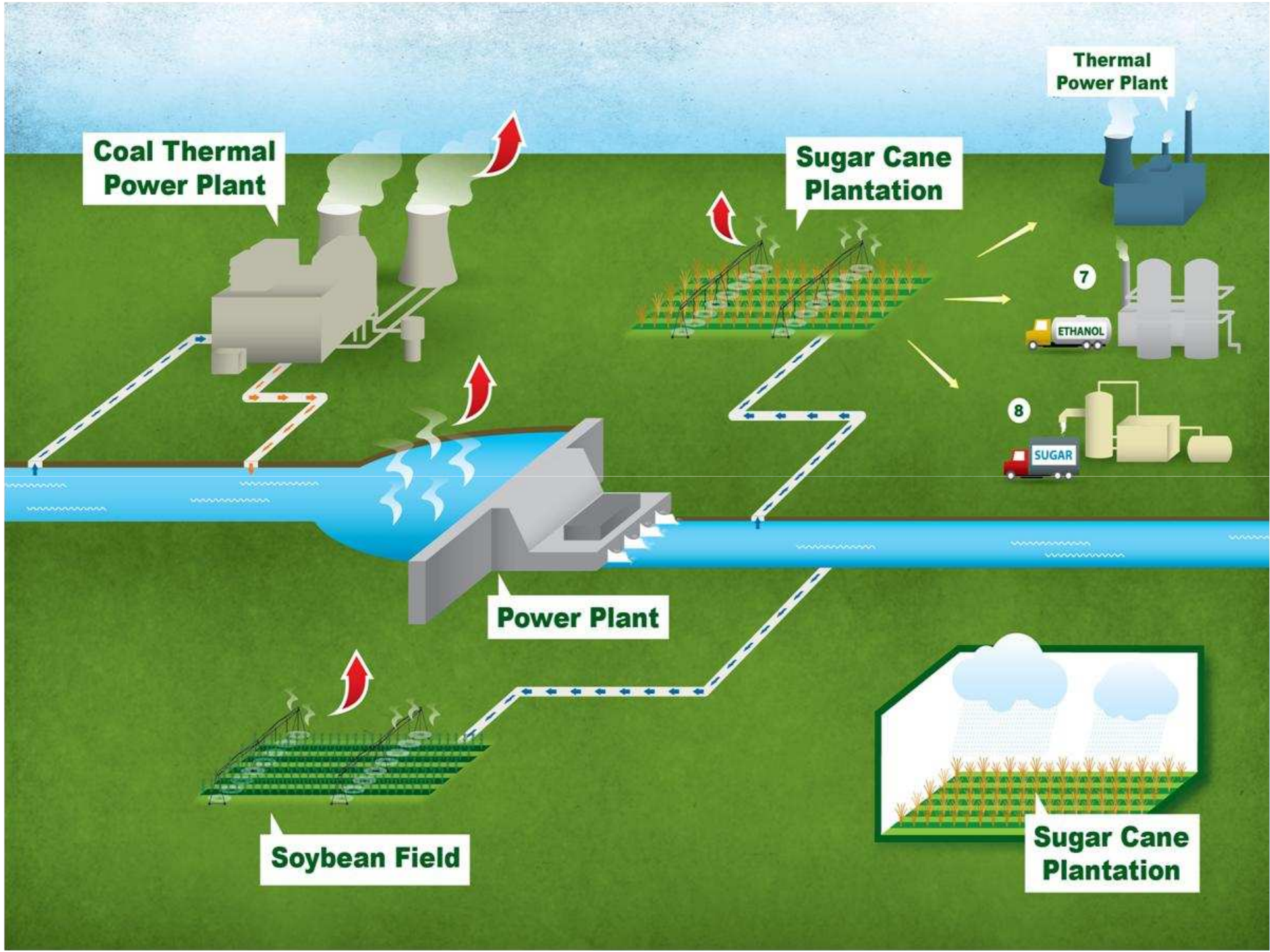
Source:<http://www.waterfootprint.org/?page=files/Water-energy>

Water footprint disregards the opportunity cost of water...

... it implies that economic value is inherent in the objects...

... which is similar to the Marxist labour theory of value...

... but economic value depends upon people's desires (utility theory of value).



Volumetric water footprints are not useful in themselves to drive policy decisions because opportunity cost of the water use in energy production depends on the local conditions, evaluated at the scale of the river basin



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