

Exploration of a variety of metrics has revealed the following:

Constable, D. J. C.; Curzons, A. D.; Cunningham, V. L. Green Chem. 2002, 4, 521-527.

Pursuing a metric such as yield, a ubiquitous metric chemist's utilization to evaluate reaction efficiency, will not by itself drive business towards sustainable practices. However, from an economic standpoint, yield remains a very good metric, especially for high value added materials such as pharmaceuticals.

Atom economy may be useful as an organizing concept or in combination with other metrics, but at this time it is not considered to be useful as a stand-alone metric. Reaction mass efficiency combines key elements of chemistry and process and represents a simple, objective, easily derived and understood metric for use by chemists, process chemists or chemical engineers. Mass intensity may be usefully expressed as mass productivity, and as such, seems to be more broadly understood by business managers. Reaction mass efficiency appears to be a useful metric for focusing attention away from waste towards the use of materials. As such, it is more likely to drive chemical and technology innovations that will lead to more sustainable business practices.