

## What is Cleantech?

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On forming Australian CleanTech in early 2007, I was asked several times whether I would be cleaning carpets and curtains. Although an increasingly common term in the US for several years, 'cleantech' has until recently been relatively unheard of in Australia. The past 12 months however have seen its use here grow exponentially and I can thankfully say that, in 2008, I have not faced one query regarding the rejuvenation of soft furnishings.

But what exactly is 'cleantech' and why does the definition seem to change depending on where you look?

Guiding principles may be given in an attempt to define what cleantech is. An example is the following from the US firm Clean Edge who state that cleantech is:

*A diverse range of products, services and processes that harness renewable materials and energy sources, dramatically reduce the use of natural resources and cut or eliminate emissions and wastes.*

Broadly, cleantech seems to encompass companies that have both environmental and economic benefits.

However, each individual is left to decide whether a particular industry sector fits within the spirit of cleantech as defined by such principles. Some organisations clearly state what they are and are not including in their definition, but then do not go on to explain how these decisions have been made.

The term cleantech therefore tends to be a more amorphous industry group than, say, environmental services, and a less rigid investment asset class than, say, financial services.

Sectors that appear to fit into the definition of cleantech without dispute include:

- Renewable energy – wind, solar thermal and photovoltaics, wave, tidal, hydro, geothermal, biomass and biogas;
- Water technologies that increase efficiency;
- Energy efficiency, green buildings and biomaterials;

- Waste management and recycling;
- Energy storage and fuel cell technologies;
- Low emission vehicle technologies; and
- Environmental Services

Other sectors are controversial with some including them within cleantech by reason of their environmental benefits whilst others reject them because of insufficient positive environmental benefits or too many perceived negative impacts. Examples are set out below.

**Biofuel** is an emotive subject. Seen by some as the saviour to high oil prices and energy security issues – see the [BioWillie](#) website for an example of the latter point – but by others as the cause of rising food prices, food riots and increasing monoculture. Research into cellulosic biofuels, if successful, may remove many of the downsides of current technologies.

**Carbon Trading** is clearly driving much of the investment behaviour in cleantech, but it is questionable whether the act of trading has any direct environmental benefits. Through facilitating investment in environmentally beneficial outcomes, it can however be seen as a key part of the cleantech chain that should be included.

**‘Clean’ fossil fuels** include natural gas, coal seam methane, underground coal gasification, gas to liquids, carbon capture and storage and clean coal technologies. These are often included in clean energy indices and funds due to their reduced emissions profiles. However, despite the ‘clean’ tag, they remain fossil fuel energy sources and are therefore, at best, only transition resources or technologies.

**Nuclear power**, along with its associated uranium production and treatment, clearly has a lower emissions profile than the fossil fuel equivalent. The nuclear industry is highly likely to form part of the long term global solution to climate change. However, deep concerns remain over the environmental and social impacts of uranium transport, usage and waste storage.

**Agri-Businesses** are included in many measures of environmental performance due to their clear interaction with the environment. Yet this interaction is not always a positive one for the environment and the communities involved. Some see cleantech as encompassing those companies that provide products and services to improve

agriculture's impact on the environment through, for instance, the use of water and energy saving technologies, and do not include the businesses that merely purchase these technologies.

It is clear that decisions on what is included as being part of cleantech depends on the viewpoint and vested interest held. Lobby groups, investment fund managers and participating companies all have desired outcomes that help shape their arguments on the definition.

Despite this, cleantech is not is just another term for Socially Responsible Investments (SRI) or Environmental, Social and Governance (ESG) performance. Cleantech is a term which embraces organisations whose essence, whose *raison d'être*, is to provide environmental benefits. SRI and ESG look at incremental improvements in company performance and can be seen as 'operational hygiene' measures that find the best in class. Cleantech is about doing 'more good' rather than 'less bad'.

To those who ask 'What is cleantech and what does it encompass?', there is no definitive answer as both subjective opinion and vested interests are involved. However this should not detract from the multiple benefits available to investors, communities, employees and society from the work of the cleantech industry.

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