

CHE GROUP BHD.

Technology as Key Driver of Regional Expansion

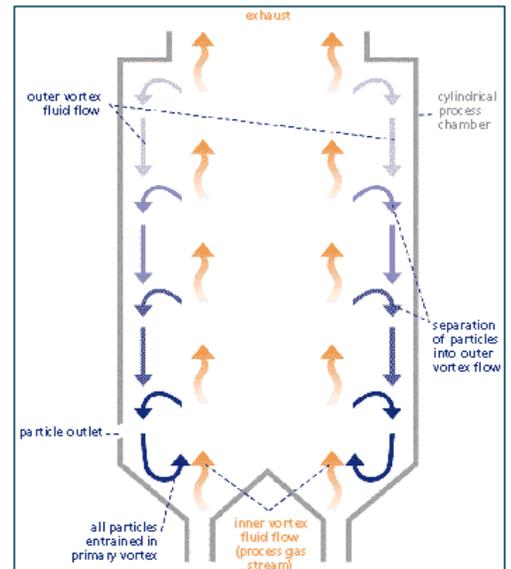
Beginning from its humble days as a steel and equipment fabrication workshop in 1991 as CHE Metalworks Sdn. Bhd., this company has evolved with the rapidly changing economic landscape to transform itself into a key player in the national and regional biomass industry.

Technology

As CHE Group Bhd. formed in 2014, the management of the company understands the importance of technology in the business of biomass, specifically in the generation of renewable energy (RE) from the various types of biomass feedstock available in the region such as palm EFB, rice husks and straws, wood waste and bagasse. In 2015, the group formed a formal joint venture (TORCHE ENERGY SDN. BHD.) with UK technology provider, TORFTECH ENERGY to utilize the latter's unique TORBED combustion technology to tap into the abundance of biomass resources in Asia.

The technology is also able to tackle the problem solid waste generation by enabling the production of high-value by-products from biomass inputs such as biochar and amorphous silica. This has the potential to revamp the business model in RE production where the value of these by-products can significantly improve the economic viability of RE projects in this region.

Many Asian countries are now looking into the increasing use of biomass and other renewable resources for their domestic energy requirements in order to reduce dependency on fossil oil imports. These initiatives are also keenly supported by regional and international 'green' funds as part of the global stakeholders' effort to mitigate the impact of climate change.



TORBED Expanded Bed Reactor (EBR) Technology

Inside the TORBED EBR, a diffuse bed of particles is held in cyclonic motion in the high velocity process gas stream. Centrifugal forces carry the particles outwards from where they are conveyed downwards to the reactor base where they are re-entrained in the process gas stream. The design allows for more compact reactor design as well as more thorough processing due to improved retention of particles in the reactor.

Projects

With this key technology and other supporting technologies, CHE Group has aggressively expanded its presence in the ASEAN region. It has

positioned itself as an integrator within the biomass value chain in the renewable energy sector. It has now secured more than USD 1.0 billion of RE projects in Malaysia, Vietnam, Cambodia and the Philippines. In Vietnam alone, it has secured RE projects to deliver up to 20 units of 10MW rice husk biomass power plant to six provinces within a span of 5 years. These projects are currently in various stages of commercial and technical planning with first delivery expected as early as 2016.

In Malaysia, the company has sealed a joint venture with a palm oil mill to utilize the EFB biomass for power generation to supply to a nearby energy-intensive brick manufacturing plant. Biochar from the power plant will be used as an ingredient to upgrade the compost currently produced from POME and EFB generated by the same palm oil mill. This will be among the first example of industrial-scale close loop system of energy and carbon material in Malaysia. The production and use of biochar for crop production also means that carbon is being sequestered from the atmosphere back into the soil.

Energy & Carbon Close-Loop System with Potential for Carbon Sequestration

