APR 2020

MSW RDF POWER

CASE STUDY/INSIGHT

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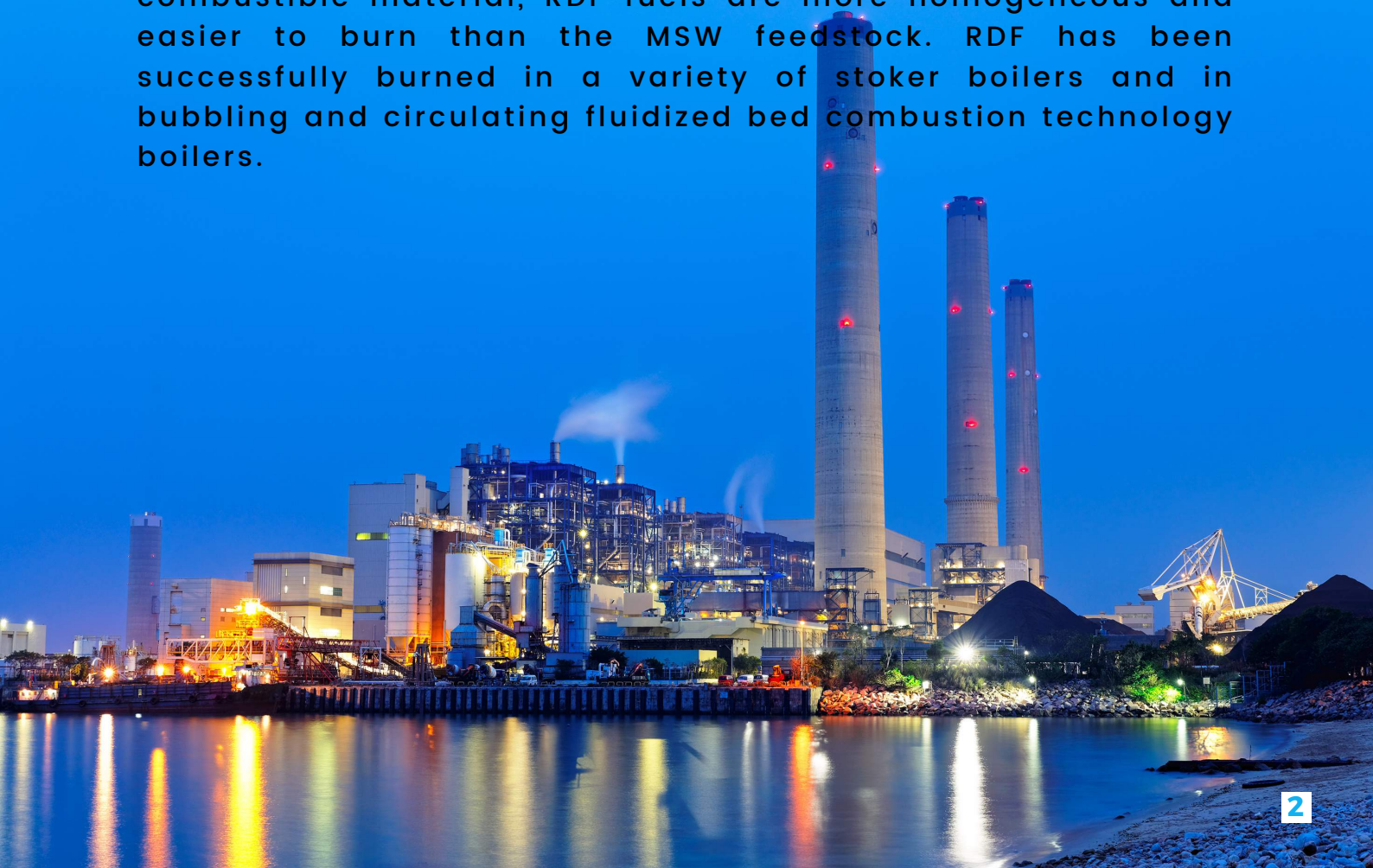
Refuse Derived Fuel (RDF) is one of the options to extract energy from the combustible material in the waste. It is basically a method of pre-processing the waste in order to use it as a fuel in boilers. This technology involves various processes to improve physical and chemical properties of solid waste. Basically, RDF systems are used to recover recyclable materials and to separate MSW into combustible and non-combustible fractions.

The combustible material is called RDF and can be used in boilers. Typically the volume of waste is reduced by 20 to 30%. RDF has a higher calorific value when compared to that of MSW (more than 3 times of MSW).

Waste sorting includes primary and secondary trammel screens which mechanically separate the dry fraction from the organic, magnetic and induction-type separators for metal recovery, a glass recovery system and a shredder.

Due to reduction in fuel particle size and reduction in non-combustible material, RDF fuels are more homogeneous and easier to burn than the MSW feedstock. RDF has been successfully burned in a variety of stoker boilers and in bubbling and circulating fluidized bed combustion technology boilers.



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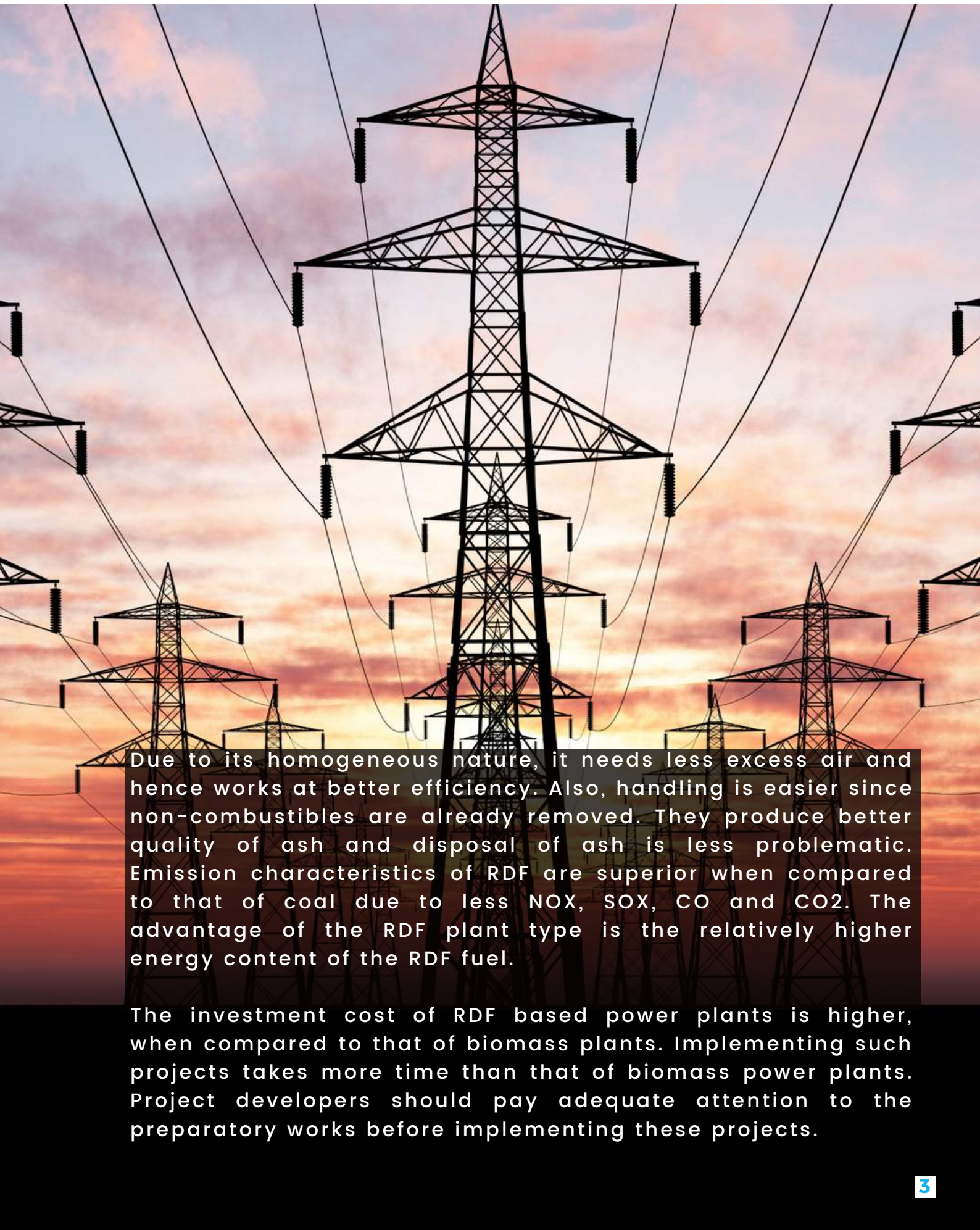

Due to its homogeneous nature, it needs less excess air and hence works at better efficiency. Also, handling is easier since non-combustibles are already removed. They produce better quality of ash and disposal of ash is less problematic. Emission characteristics of RDF are superior when compared to that of coal due to less NOX, SOX, CO and CO2. The advantage of the RDF plant type is the relatively higher energy content of the RDF fuel.

The investment cost of RDF based power plants is higher, when compared to that of biomass plants. Implementing such projects takes more time than that of biomass power plants. Project developers should pay adequate attention to the preparatory works before implementing these projects.