Efficiencies, Availabilities, Reliabilities and Environmental Impact of Commercial Geothermal Power Plants

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The economy of a geothermal power plant is only one of the conditions to be fulfilled in the development of a geothermal resource. In many cases it is only secondary. The developer should often give precedence to the environmental impact, to the sustainability of the resource, to the safety of the operation, to strength, and durability of the equipment, to small cost of operation etc. This paper will discuss the challenges and advantages of geothermal power generation when compared to wind, solar and biomass and draw a clear line between the available commercial technologies and some pilot development as Kalina on the other side.

Among the commercial technologies the single and in particular the double flash system will be compared with the different binary technologies and in particular with the Geothermal Combined Cycle system. The theoretical and practical advantages of the each system will be evaluated and compared to examples from existing projects.