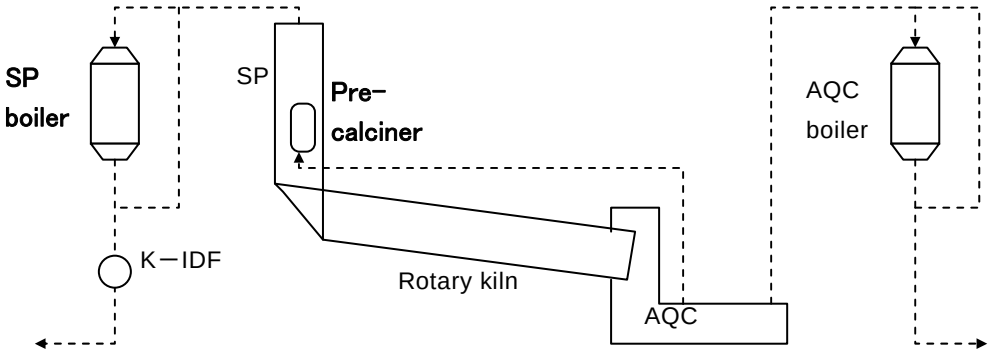
Item	Power generation utilizing waste heat	Application: Waste heat recovery
Background	The temperature of the exhaust from the suspension preheater (SP) or the new suspension preheater (NSP) is about 400℃. The exhaust has the surplus heat even if it is used to dry the raw materials. Also the surplus heat comes from the clinker cooler. It was desired to utilize the surplus heat (= waste heat) for energy saving.	
Descriptions	The power generator by the waste heat has been installed with the progress of technologies on the waste heat generation and after the appearance of large-scale kilns. The popular system is as follows. The boilers are installed at the outlet of suspension preheater or clinker cooler. The low pressure steam is made in boiler by waste heat recovery. And, the electrical power is generated with the steam turbine. The amount of generated electrical power per 1 ton of clinker is 35-40kW on an average. In the case of kiln of 5000 ton per 1 day, the 8000kW of electrical power are generated. In the typical NSP kiln equipped with power station by waste heat, the energy utilization efficiency on the burning process reaches about 80% and the temperature of the exhaust after using of drying raw materials is about 100℃.  	
Results	The power station by waste heat can generate electrical power of about 35 to 40 kW per 1 ton of clinker.	
Cost estimation	About 27.3 million US$ including cost of supplemental facilities [1US$=¥110]	
Related materials	The recycled utilization of the exhaust gas of the clinker cooler	
Reference		