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Geothermal Binary Demonstration Power Plant Pangolombian-Lahendong, Indonesia

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In order to successfully demonstrate geothermal binary power plant technology at an Indonesian site and to intensify the know-how transfer in this technology field a German-Indonesian collaboration project has been initiated in 2013 involving GFZ Potsdam (Germany), the Agency for the Assessment and Application of Technology in Indonesia (BPPT) and PT Pertamina Geothermal Energy (PGE). Geothermal binary power plants are not yet an established technology at Indonesian sites. The first commercial binary units have been commissioned at Sarulla field just in 2017. Due to their adaptability binary plants could however be implemented at much more sites and help to increase the geothermal capacity in Indonesia.

The binary demonstration power plant Pangolombian-Lahendong is a prototype that has been developed in order to meet different technical, but also non-technical constraints. The power plant cycle is integrated using two intermediate closed water cycles for heat supply and heat removal which is an untypical set-up for geothermal binary power plants. Technical components from Germany but also Indonesian suppliers have been used.

The binary demonstration plant started operation in September 2017. Since then more than 1.8 GWh (status September 2019) could be produced and a full-automatic and parallel grid operation could be proven. In January 2019 the demonstration plant has been handed over to an Indonesian partner. Besides the power supply for geothermal injection pumps the binary plant shall serve for education and research.

The presentation describes the technical concept and will summarize the operational experiences.

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