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“Increasing transmission system operation flexibility using power flow controlling devices”

Abstract. Managing the security of a power system poses a big challenge for the Transmission System Operators (TSOs) in the present days as congestion is now a frequent issue in a meshed power system like that in Continental Europe due to increased market competition and increased integration of renewables. This demands the expansion of the existing transmission network but is severely limited due to “not in my backyard” attitude. Generation re-dispatch is a very costly option to the TSOs in the decentralized environment and hence the action is pushed to the last. Therefore TSOs are forced to find alternative means to manage system congestion. Moreover, the existing grid needs to be operated more flexibly in order to integrate more renewables into the system.

The presentation will focus on the way of coordinating power flow controlling devices among TSOs that are already installed in the system in order to increase the existing grid more flexibly and mitigating system congestion, and which comes at a zero operating cost to the TSOs. The presentation will also focus on proposing an alternative way of guaranteeing system security thereby replacing traditional N-1 principle.

Bio. Priyanko Guha Thakurta is a power systems engineer, specialized in transmission systems (especially Flexible Alternating Current Transmission System and High Voltage Direct Current). He received his Ph.D. from the University of Leuven (KULEUVEN) at Belgium in 2015. He is particularly interested in improving daily operations of power system with the help of controllable devices, and which has become a challenge for the system operators in the light of increased intermittency due to renewables. His research interests include power system control, operation and planning, international coordination with respect to power system operations and application of FACTS and HVDC for a more flexible system operation.