Webinar: Evolution of Protection Schemes for a High Share of IBR	
Question	**Answer**
More IBR while losing rotating machines will decrease system inertia and affect system stability. Does protection not address the core issue beside tripping it?	Inertia and stability decreases the critical clearing times that the protection systems must comply with. There are also UFLS and UVLS schemes that need to be adjusted to accommodate IBR generation.
How would no breaker failure and overtripping work? How would you know when to overtrip?	Overtripping would be needed when we don't have sufficient time for breaker failure to operate.
Would extra functions, such as buying breakers with a grounding switch, help mitigate some of the triggers you're referencing?	The grounding switch could help on "radial" distribution circuits to make sure that all IBR is off, provided that you can quickly detect the fault, open the breaker, and engage the grounding switch.
What would be the time resolution of IBR simulation models that would be required to correctly study impact on relays?	Our "high speed" protection generally looks at the first 5 cycles. However, once we move to travelling wave the simulation needs to be down to the first few milliseconds. So only a EMT type simulation will work.
Do you anticipate having to upgrade other systems such as instrumentation to accommodate traveling wave/time domain relays?	Yes, there needs to be a comprehensive upgrade of all systems. For instance, our GPS clocks do not have the required precision. Our harmonic monitors need to have higher resolution.
Is private LTE fast enough to clear faults?	We believe so on distribution circuits, but not on transmission.
Is the MPLS implemented for current differential using leased or private network?	Ideally, the MPLS system will be a private network owned by the utility, but a leased arrangement may work.
Impact of STATCOM had a 1. These are designed with the VSC as what would is in an inverter. How did you come to this? STATCOM are for voltage support in S.S.	The rating of 1 was subjective based on our experience with STATCOMs on our systems. Yes, the STATCOM only helps with the voltage part of the weak grid problem.
Do you see using an emtp software in the future for analysis of short circuits?	Yes.