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| <b>Title of Presentation</b>        | Assessing the Impact of Primary Frequency Support from IBRs in Low Inertia Isolated Power Systems |
| <b>Oral or Poster Presentation?</b> | Poster  |

**Summary:**

The anticipated massive penetration of Renewable Energy Sources (RES) will significantly impact the operation of electric power systems. The effect will be more prominent on low-inertia, isolated, power systems. Modern grid code requirements can be used to ensure that RES will remain connected to the system during abnormal or transient operating conditions and provide support. In this paper, the Cyprus transmission system is used to evaluate the impact of primary frequency support (PFS) from Inverter-Based Resources (IBRs), both during low- and high-loading conditions. A sensitivity analysis of the major parameters of PFS has been performed to evaluate their impact on the frequency response in low inertia conditions. It is demonstrated that PFS provided by IBRs during low loading conditions positively affects the power system frequency stability without any additional curtailments. During high-loading conditions, PFS from RES also improves the system performance, however, significant RES curtailments from the IBGs participating in PFS are required which may raise fairness concerns.