Federal Energy Regulatory Commission (FERC) Order 2222 has required the US independent system operators (ISOs) to allow intensive market participation of the aggregated distributed energy resources (DERs). This further requires the coordination of transmission and distribution (T&D) operations, in order to ensure both wholesale market efficiency and distribution system reliability.

In this presentation, a framework is proposed to coordinate the operation of ISO and distribution system operator (DSO). The framework has several desired characteristics: 1) it fully complies with the current practice of US wholesale market, which introduces minimal changes to today’s wholesale market clearing procedure; 2) it requires minimal communication efforts between the T&D systems; 3) it does not exchange any confidential system models between the T&D systems; and 4) it ensures optimal T&D operation while satisfying all the T&D system operating constraints.