

## Overview of BESS impact on the Irish power system

SC C2 PS2 Q2.3:

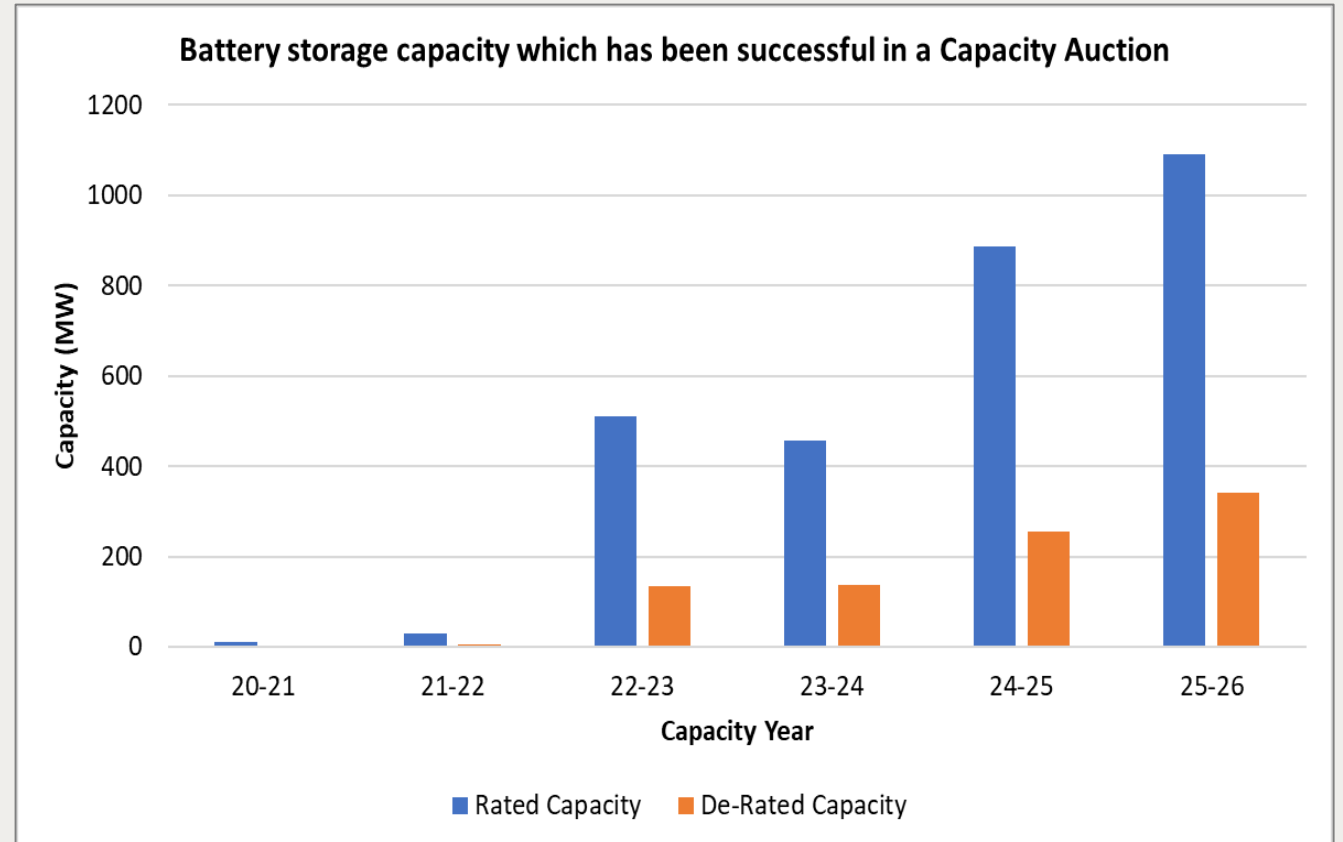
While the control systems of power electronic interfaced resources can be highly flexible they may not be able to be adjusted to meet all of the power system technical performance requirements. In what circumstances are supporting technologies, such as battery energy storage systems or synchronous condensers, needed to complement the capabilities of the power electronic interfaced resources? How are control interactions between these technologies being managed to improve power system technical performance?

Sean Ritson (Ireland)

# BESS Capacity Growth in Ireland

## Observations

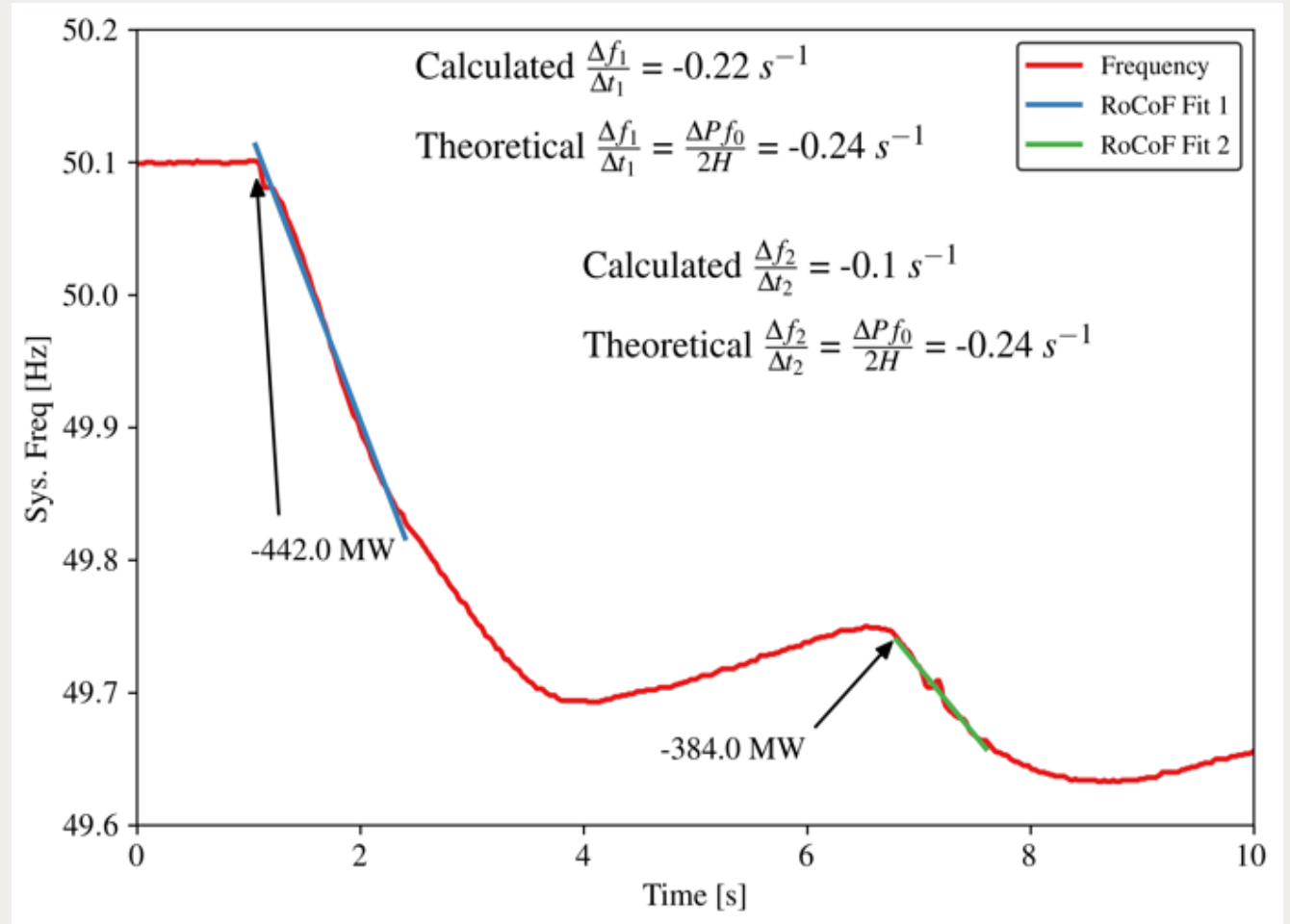
- Significant growth in installed capacity
- Starting to see longer duration units coming through
  - First 2-hour battery in 2022
  - Multiple 3+ hour batteries in 24-25 Capacity Year onwards
- With intermittent renewables and reduced system inertia fast acting storage will become increasingly important
- Currently providing FFR-TOR2 and SSRP ancillary services



# November 2021 Double Trip

## Observations

- Similar theoretical RoCoF during both generator trips
- Calculated RoCoF for 1<sup>st</sup> generator trip was relatively close to the theoretical value
- Significantly reduced RoCoF during 2<sup>nd</sup> generator trip due to BESS capacity operational on the system
- All operational BESS units were responding at the time of 2<sup>nd</sup> trip, thereby limiting the RoCoF



# Current vs Future Opportunities

## Overview

- Energy arbitrage / peak shaving. Currently on the Irish power system BESS units are typically short duration (approx. 30 minutes of output at max capacity). Therefore, these units are commercially designed to provide system services ranging from FFR (2 second response time) to TOR2 (up to 20 minutes response).
- EirGrid and SONI have conducted trials to evaluate the scope of system changes and/or considerations that are needed to enable BESS units to move from System Services to more dynamic and regular operation. Following a series of trials, BESS units will start to be more frequently dispatched over the evening peak and during System Alert (amber) situations.
- This year the first 2-hour unit was energised and furthermore in recent capacity auctions a number of 3+ hour units have been successfully awarded capacity for future capacity years. It is expected a more diverse range of services will be on offer from these longer duration units for example, longer duration storage units can contribute to System Service Ramping products.