

# ***MADEIRA'S BATTERIES ENERGY STORAGE SYSTEMS: IMPACTS AND RESULTS***

***(BESS PORTO SANTO | BESS Vitória (MADEIRA))***



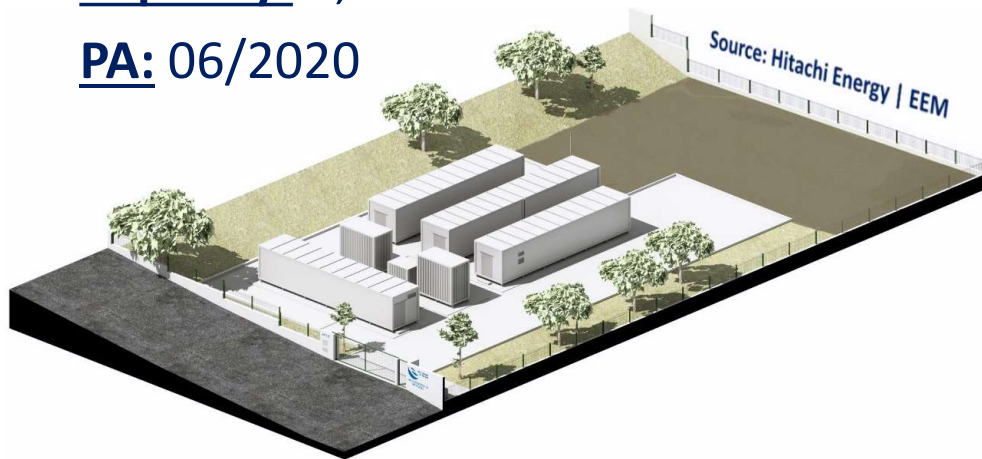
# BESS Porto Santo (CBPS) | BESS Madeira-Vitória (CBM)



**Nominal Power:** 5,4 MVA / 4,3 MW

**Capacity:** 3,3 MWh

**PA:** 06/2020



**Nominal Power:** 23,7 MVA / 15 MW

**Capacity:** 16,4 MWh

**PA:** 09/2022



Co-financed by POSEUR (Cohesion Fund):



REGIÃO AUTÓNOMA  
DA MADEIRA



UNIÃO EUROPEIA  
Fundo de Coesão

# BESS Porto Santo | BESS Madeira-Vitória – Objectives

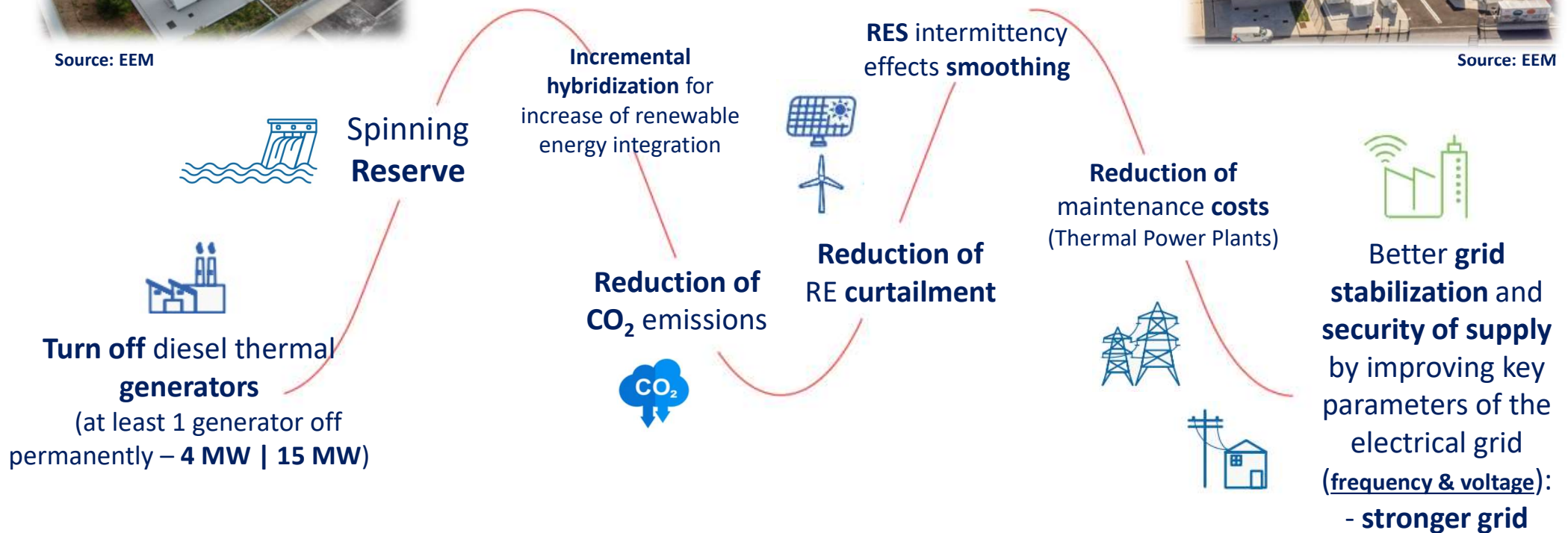


Source: EEM

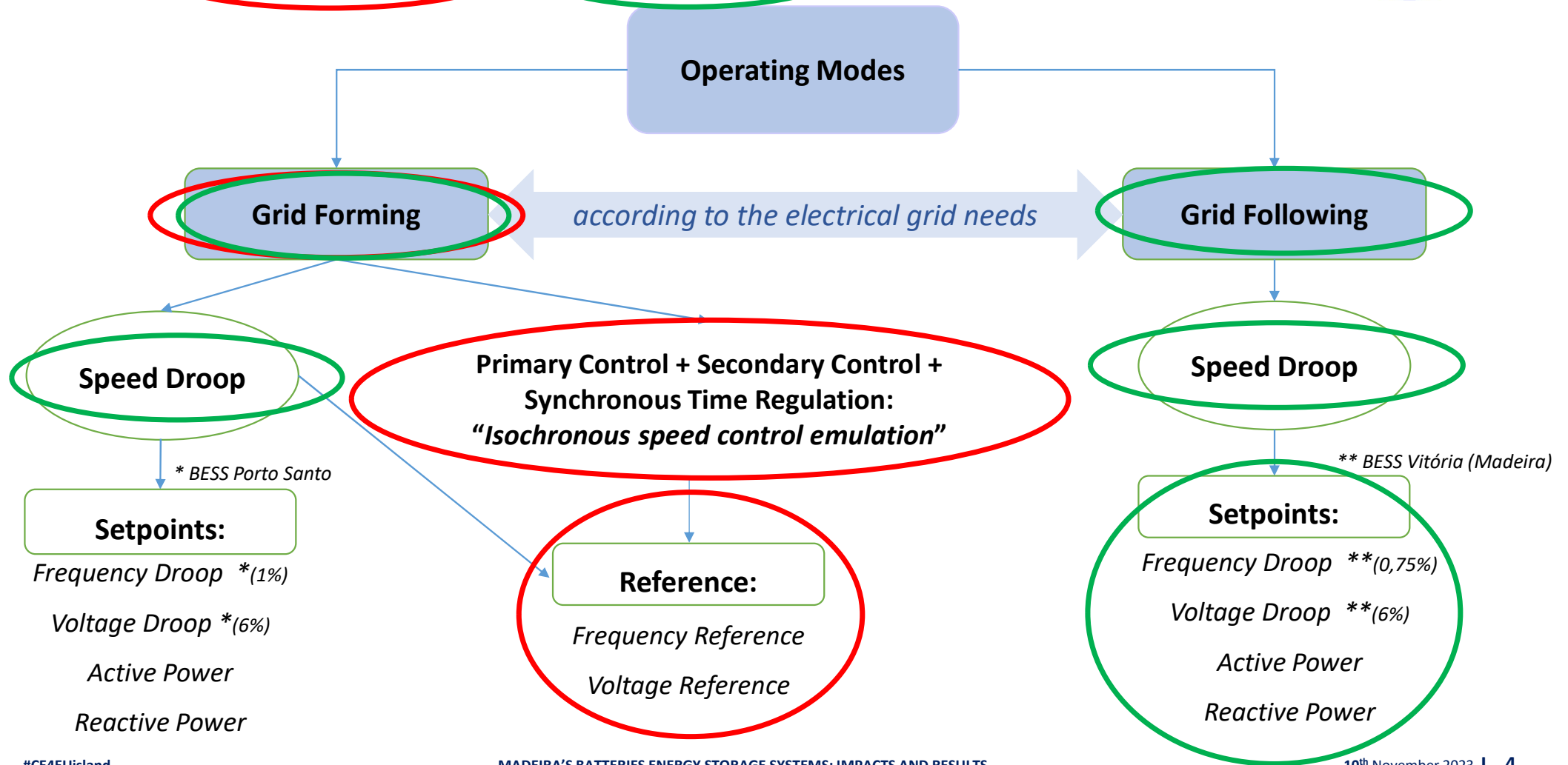


Source: EEM

## ENERGY TRANSITION



# BESS Porto Santo and Madeira - Operating Modes





# BESS Porto Santo – Impact & Results I

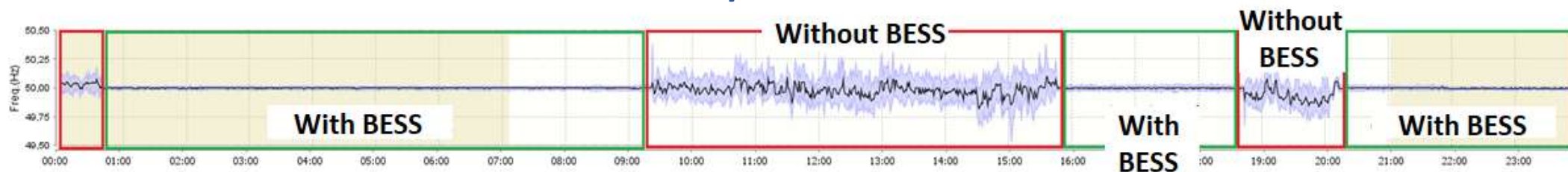
- ✓ Substantial reduction of frequency variation achieved:

***Speed Droop Control: Frequency Droop = 2 %***



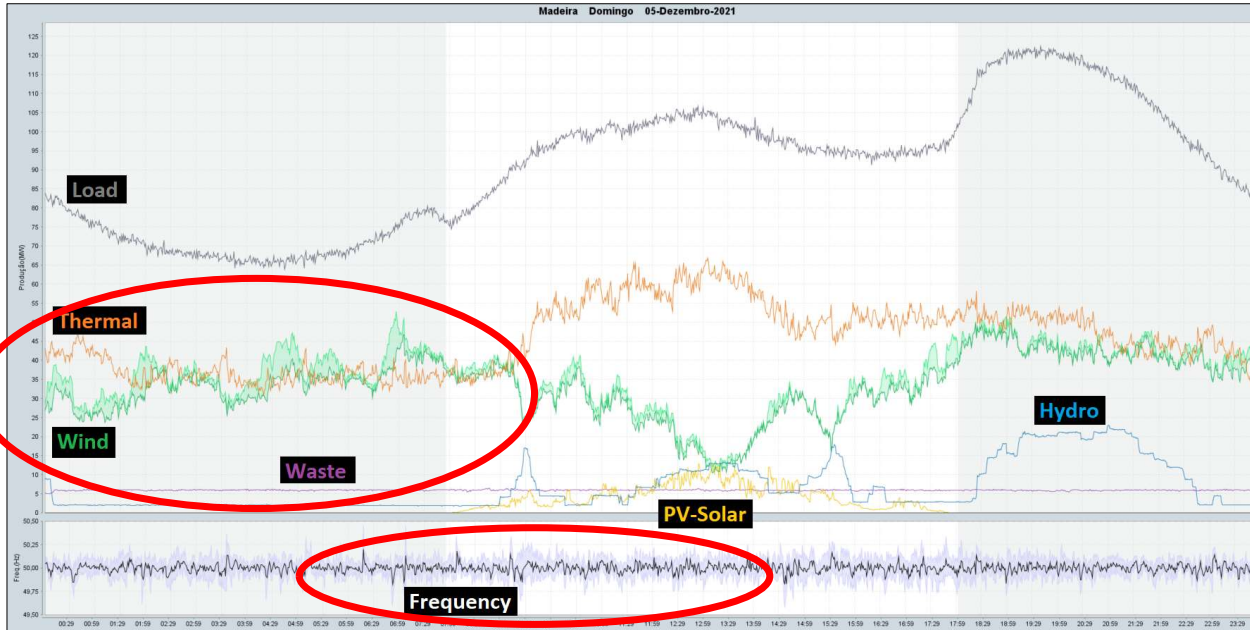
- ✓ Substantial improvement in the quality of service provided to customers:

***“Isochronous speed control emulation”***



Source: EEM

# BESS Madeira (Vitória) – Impact & Results I



**Without BESS**

**5<sup>th</sup> December 2021**

**Average Load Demand: 93 MW**

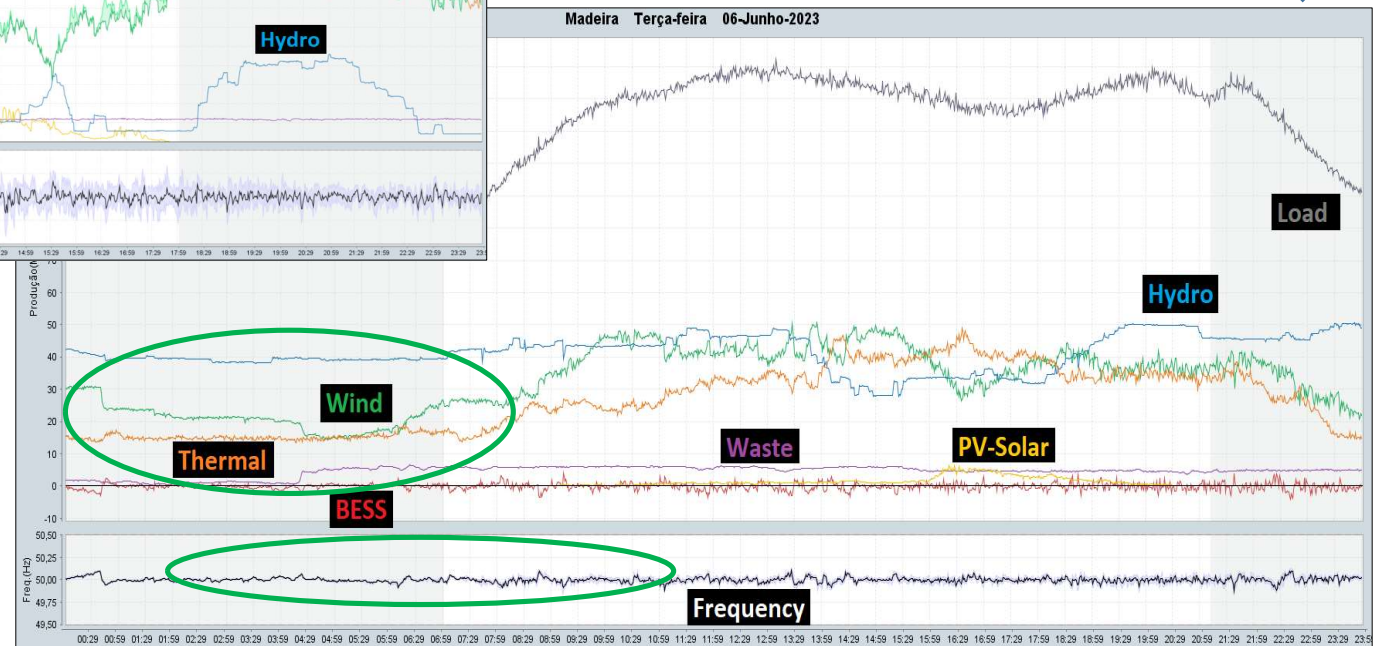
Source: EEM

#CE4EUisland

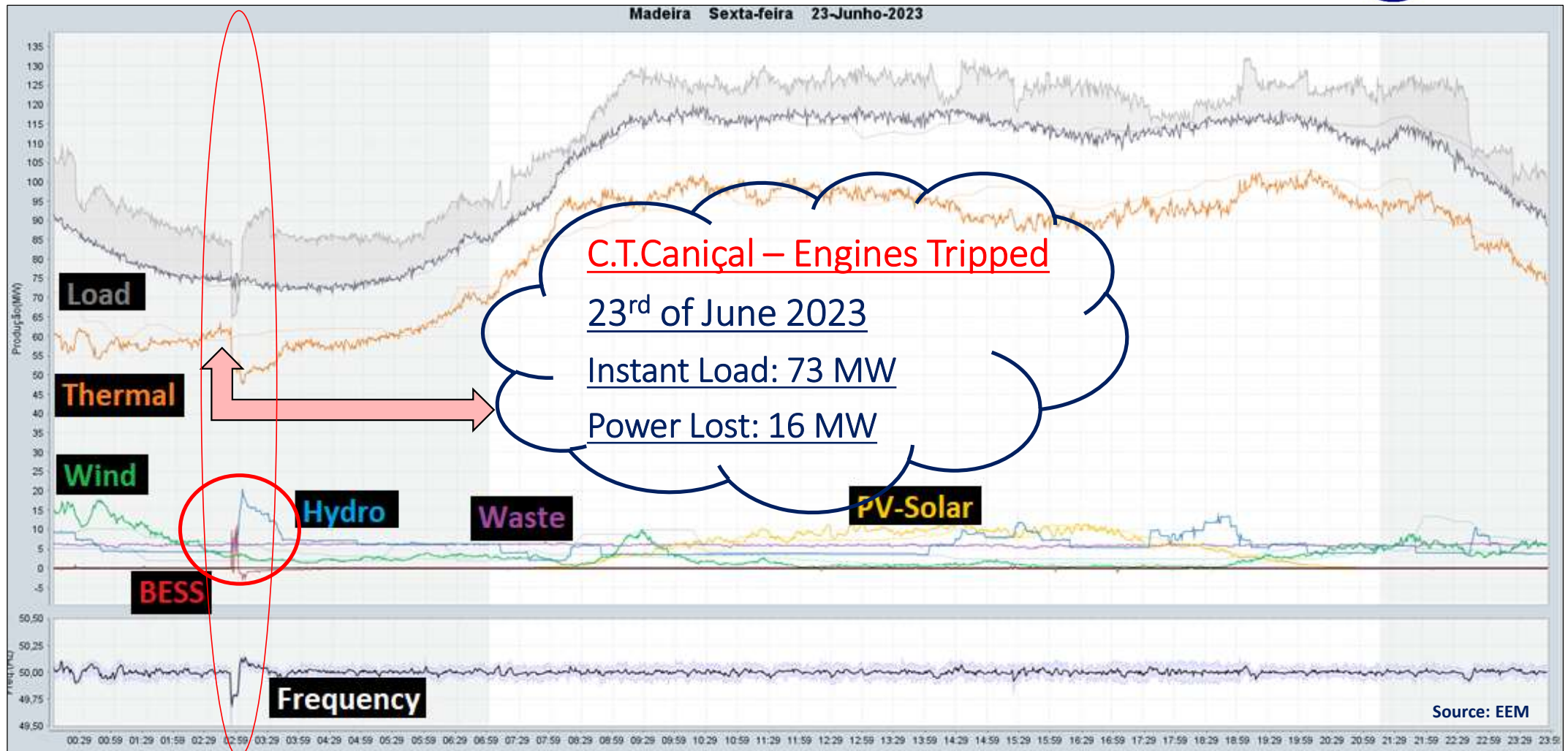
**With BESS**

**6<sup>th</sup> June 2023**

**Average Load Demand: 102 MW**



# BESS Madeira (Vitória) – Impact & Results II





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*Thank You!*

Source: EEM