

Plant Controller REPCGFM_C1

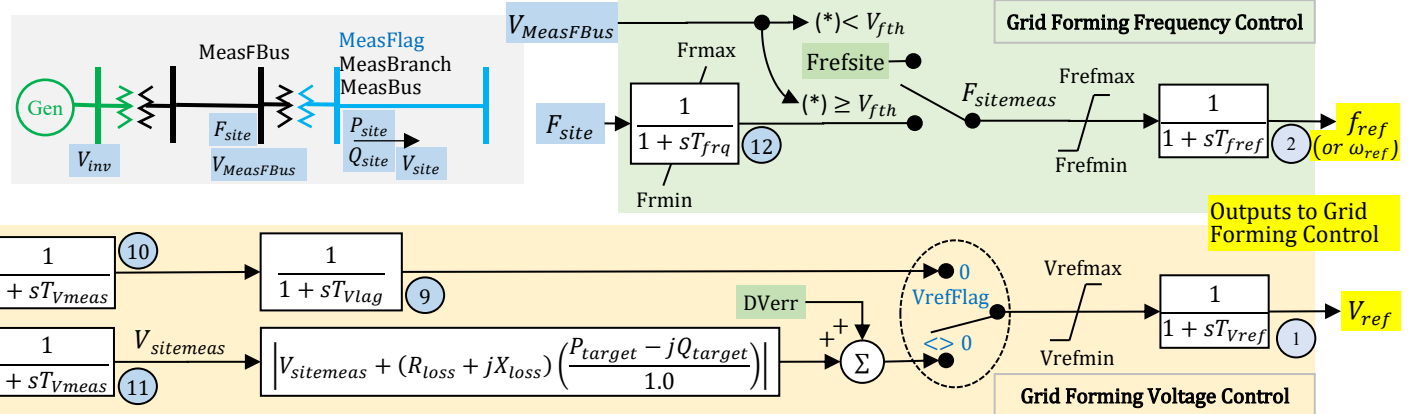
Hybrid Renewable Energy Plant Control Model REPCGFM_C1

States:

- 1 - Vref
- 2 - Fref
- 3 - PcmdGFL
- 4 - QcmdGFL
- 5 - IntKip
- 6 - IntKiq
- 7 - IntKivc
- 8 - PKpvc
- 9 - Vlag
- 10 - Vinvmeas
- 11 - Vsitemeas
- 12 - Freqmeas
- 13 - Psitemeas
- 14 - Qsitemeas

Other Fields:

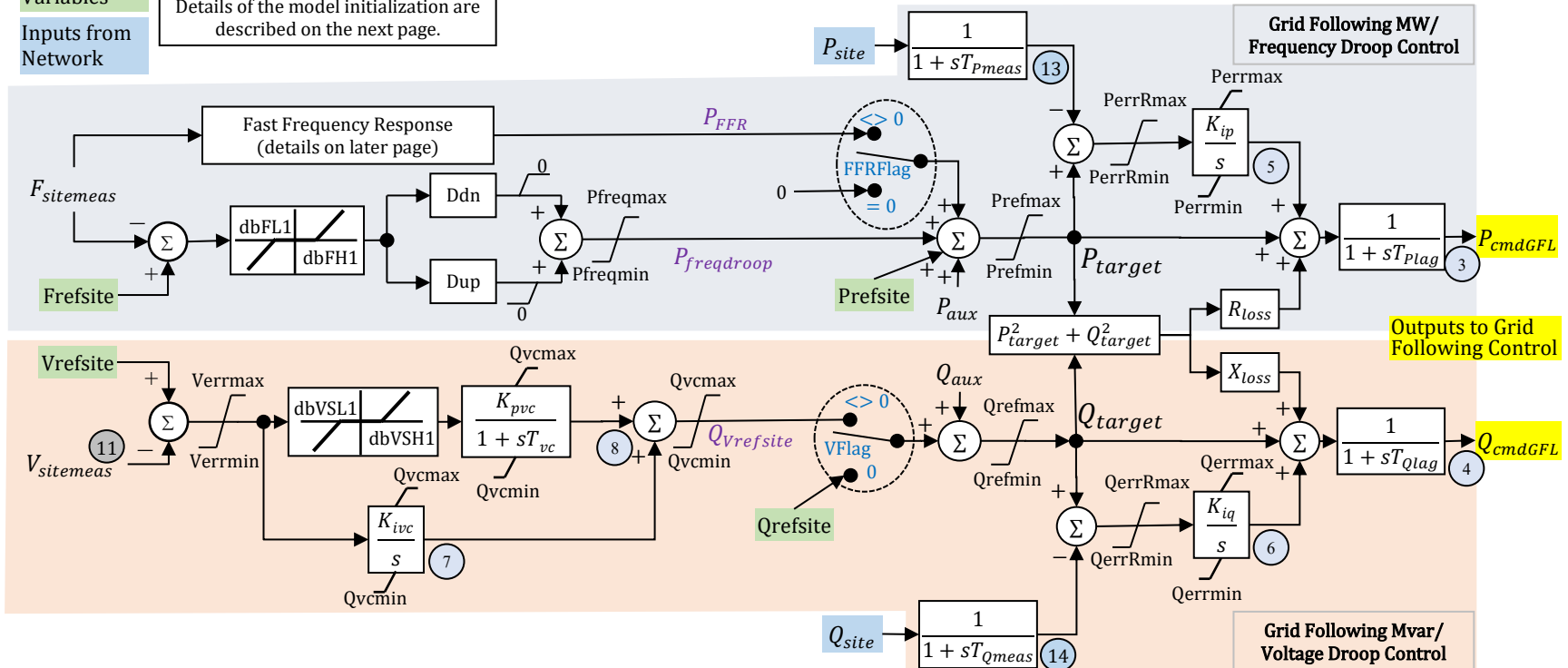
- 1 - Ptarget
- 2 - Qtarget
- 3 - Fsitemeas
- 4 - DVer
- 5 - PFFR
- 6 - Pfreqdroop
- 7 - QVrefsite



Initialized Variables

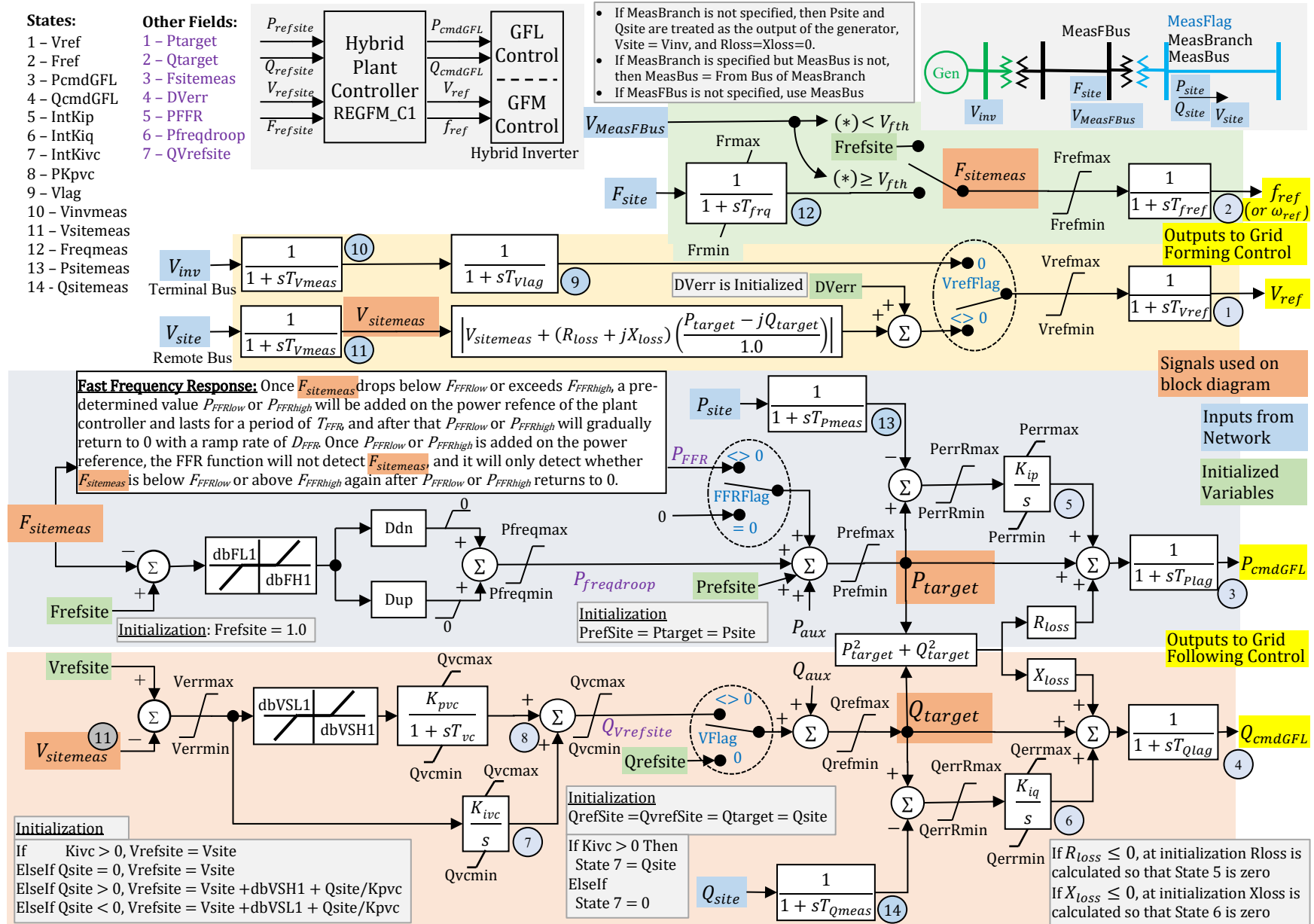
Inputs from Network

Details of the model initialization are described on the next page.

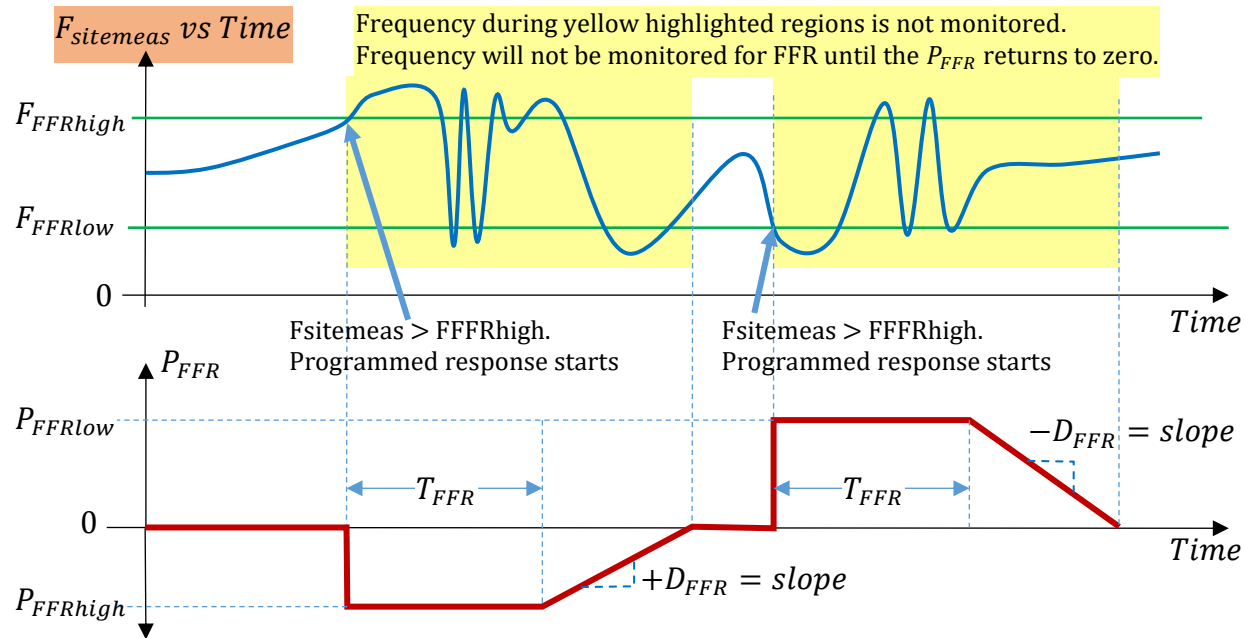


Plant Controller REPCGFM_C1 (with Details)

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Fast Frequency Response



Special Initialization for Rloss or XLoss

```

If FlowMeasBranch not specified Then
    // Output of the generator will now be Psite and Qsite, thus modeling losses does not make sense
    // Force Rloss and Xloss to zero
    RLoss = 0
    XLoss = 0
Else
    Ssite2 = sqrt(Psite) + sqrt(Qsite)
    If local_Ssite2 > 1E-6 Then // avoid divide by zero when initial site has near zero flow
        If RLoss <= 0 Then RLoss = (Pgen - Psite)/Ssite2
        If XLoss <= 0 Then XLoss = (Qgen - Qsite)/Ssite2
    Else
        // in unlikely event it operating and initialized at P + jQ = 0 + j0
        // and Rloss and Xloss are negative, then just set Rloss and Xloss to 0
        If RLoss <= 0 Then RLoss = 0
        If XLoss <= 0 Then XLoss = 0
    EndIf
EndIf

```