UPDATES OF RES MODELING

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AKNOWLEDGMENTS

The work done thus far collectively by the Renewable Energy Modeling (REM) Adhoc group, within WECC MVS, has had contributions from many entities as well as constant feedback from the wider MVS group. Thanks to all who have contributed. Below are the main contributing entities. We apologies for any inadvertent omissions.

EPRI, GE, PEACE®, PGE, PowerTech Labs, PowerWorld, Qualus, Siemens PTI, Tesla, WECC

Work done in these slides by PEACE®, in presenting proposed specifications for REPC_E model, was sponsored by EPRI

PREVIOUS WORK

- REGC_B, REGC_C (not WECC approved), REEC_D, REEC_E, REPC_C, REPC_D, WTGT_B, WTGIBFFR_A, WTGWGO_A, WTGP_B
- All above done and in all the tools (including REEC_E)
- New GFM models also recently done and approved

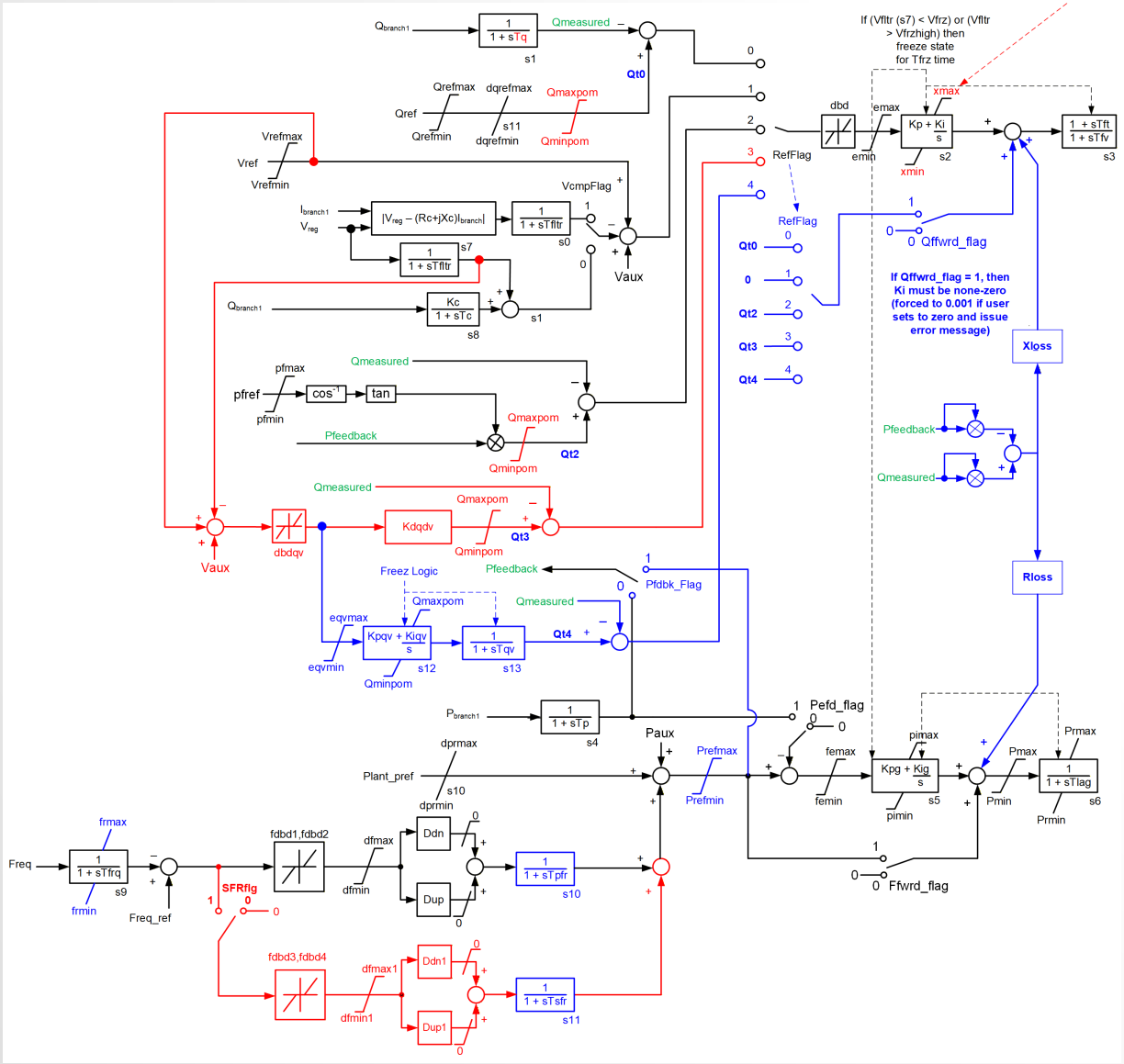
STATUS OF REEC_E

- Model is done, benchmarking was done across tools and results shown back in September, 2025
- Model was not officially approved in September, 2025
- Not sure what next steps are – model is available (and already being used by some)
- Changes were simple to add more flexibility on top of REEC_D, and already approved model

REPC_E MODEL

- Proposed new PPC
- September 2025 specification was approved at the last MVS meeting
- In December 2025 Tesla offered some additional proposed changes
- Let us take a look at those:
  - Extra PI loop for fourth option for V/Q control
  - Extra limits and rate limits
  - Some extra time-constants
  - An optional feedforward path for the reactive control path
  - An optional loss calculation

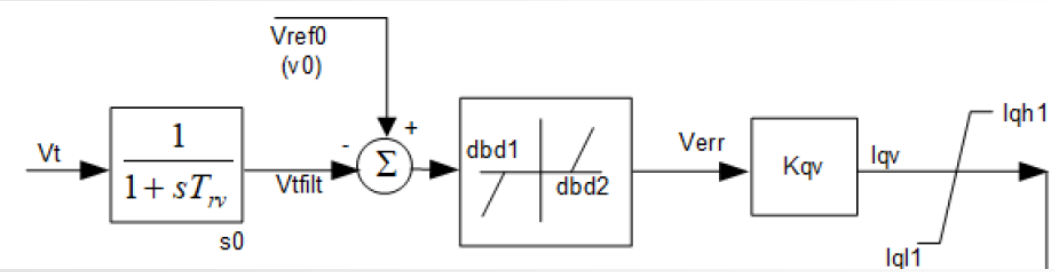
PROPOSED ADDITIONS

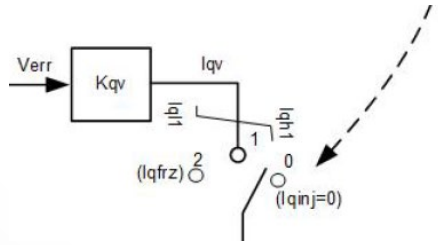


Not showing the downstream connections to multiple Inverters, that has not changed since REPC_D

POSSIBLE CHANGES TO REEC_*

- Adding hysteresis to the Vdip logic
- Adding some of the state transition from REEC_A back to the latest models as an option
- Adding asymmetry to the Kqv gain





QUESTIONS AND COMMENTS

- Any other questions or comments?