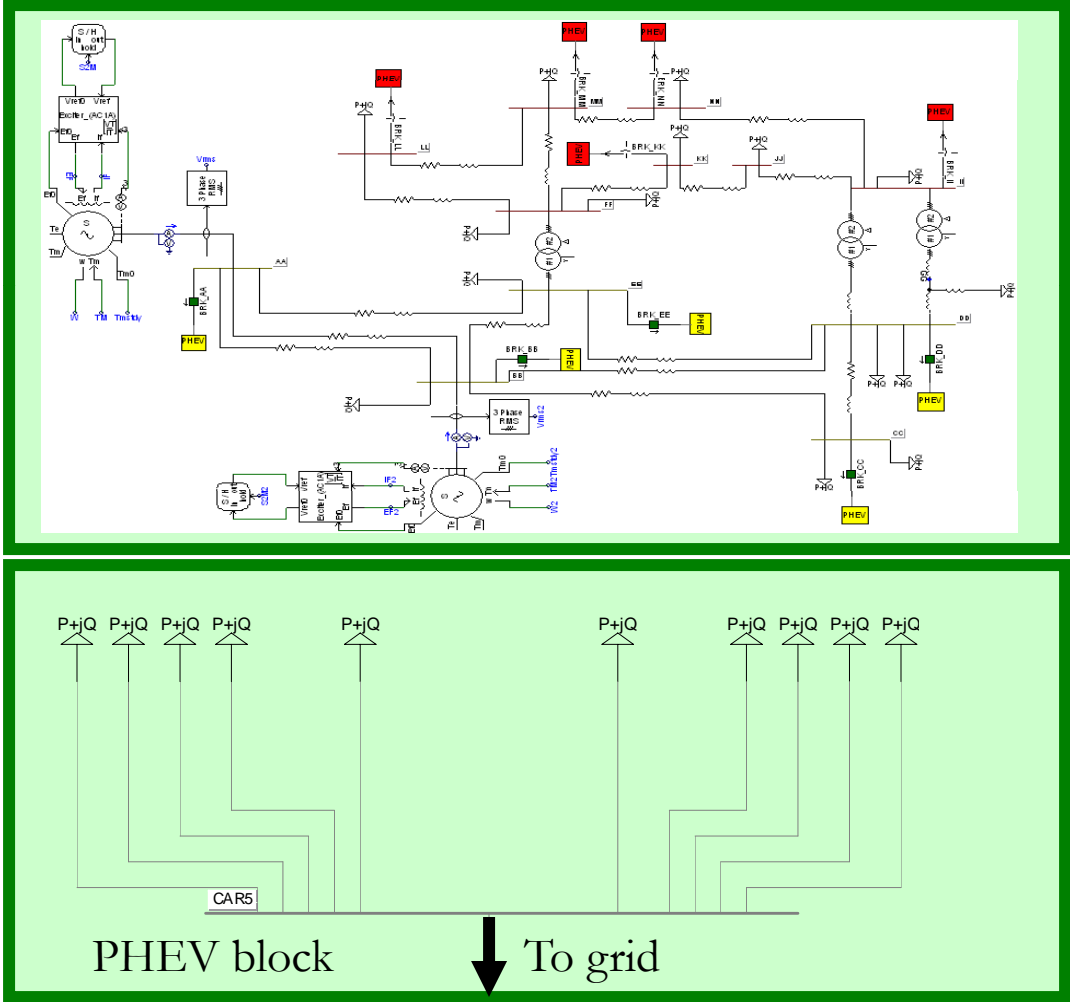


Impact on a Microgrid of Increased Market Penetration of PHEVs



- Goal
 - To study the potential impact high market penetration of PHEVs on regional electricity supply
- Controlled and uncontrolled charging scenarios
- PSCAD/EMTDC simulation studies using IEEE 14 Bus test case



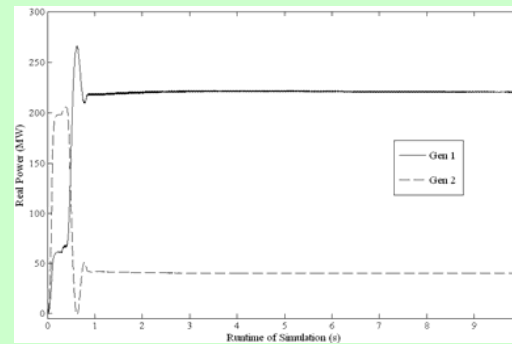


Impact on a Microgrid of Increased Market Penetration of PHEVs

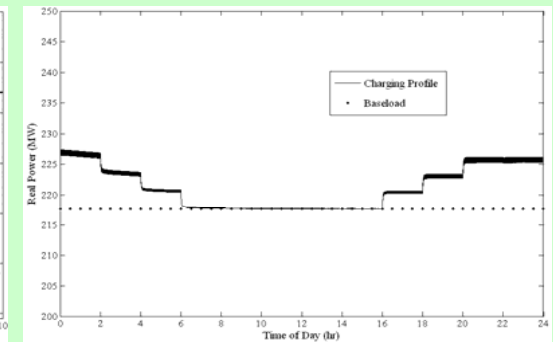


- Results show the changes in base load due to increased PHEV penetration
- Gen II can only supply a max of 40MW
- Extra power demand due to PHEV load is supplied from Gen I
- Studies important for regional planning of power supply

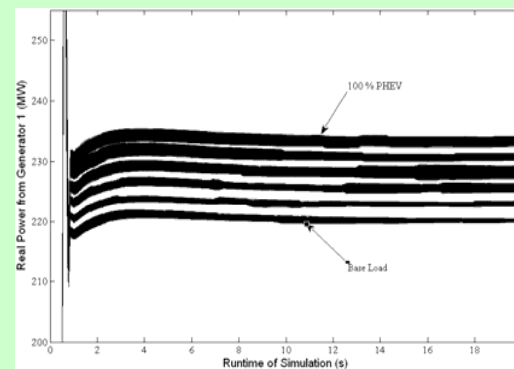
Simulation Results



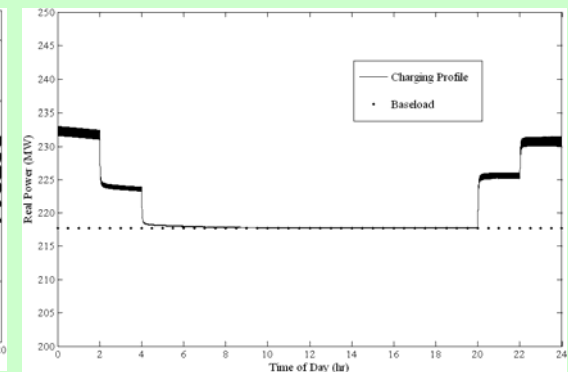
Base load Gen I and Gen II



Uncontrolled charging



Gen I real power supply for different PHEV loadings



Controlled charging