ACC 2013 Workshop on
Control of Power Inverters for the Smart Grid

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Room 10/11
Schedule

1:00-1:15pm Introduction
• To renewable energy and smart grid integration
• To power inverters

1:15-2:15pm Power quality control
• Power quality issues
• Degradation mechanisms of voltage quality
• $H^\infty$ repetitive control (voltage quality, current quality and both)
• Output impedance control (R-inverters, L-inverters and C-inverters)
• Bypassing harmonic currents

2:15-3:15pm Power flow control
• Reference frames
• Conventional current-controlled strategies (PI and PR)
• Grid-friendly connection of inverters: Synchronverters

3:15-3:30pm Coffee/tea break

3:30-4:30pm Parallel-operation of inverters
• Conventional droop control
• Robust droop control
• Robust droop control with improved voltage quality
• Harmonic droop control

4:30-4:50pm Synchronisation
• Conventional synchronisation techniques
• Sinusoid-locked loops

4:50-5:00pm Discussions, wrap up and feedback