ACC Interconnection Rules Workshop
Interconnection Process Topics

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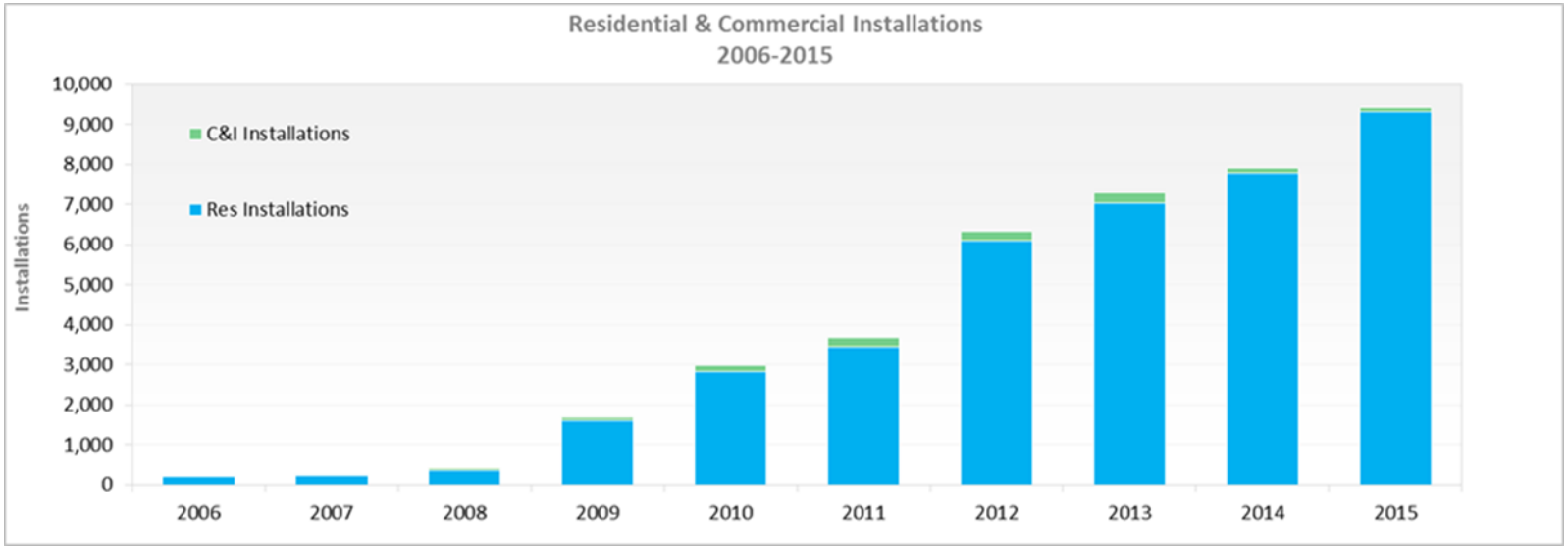
Agenda

- Introduction – Residential and Small Commercial PV
- Safety
- Reliability
- Process
- Questions

Context

- High volume of interconnections
  - 42,000+ existing
  - Grows by ~ 1,300 – 1,500/Mo
  - 100+ PV installers
- High-penetration – must plan ahead to maintain system reliability



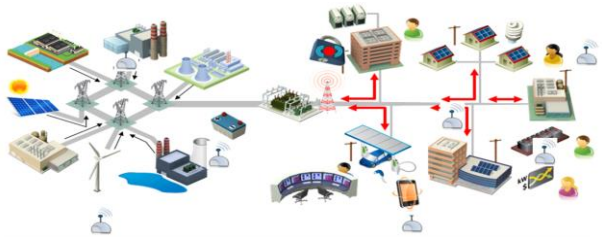
Safety – Interconnecting is a serious issue

- Must be first and most important priority
  - Customers, Crews, Contractors
- Electrical equipment is very dangerous
  - Avoid injury or fatality
  - Most people do not understand the hazard
  - Invisible and instantaneous
- Crew safety not covered by code
  - Examples: Access and APS clearance requirements

Safety

- Rules must reflect zero tolerance for risk
  - Avoid electrical and non-electrical hazards
    - Customer, Crews, Contractors
- Adaptable for discretionary modifications
  - New hazards identified
  - Absolute and quick response
    - Code changes, jurisdiction changes, field experiences

Reliability



- APS provides service 24-7, 365
  - Product is produced and consumed instantly
- Interconnecting to an increasingly complex and dynamic grid
  - 10% APS feeders have reverse power flow
    - More than 300 hours annually
    - Growing issue
    - Complex diagnostics and planning
  - High penetration causes power quality issues
  - Each feeder is different

Reliability

- PV production does not typically match customer usage
- Rules must reflect ability to adapt to change in real-time
  - Technologies change
  - Codes and laws change
  - Feeders change
- Speed of change is increasing

Process – Adaptable and transparent

- Current process:
  - Automated
  - Training Supplied
  - Checklists and Templates provided
  - Adaptable
  - Tracked for record keeping and accountability
- Rules must maintain adaptability

Process

- Customer Submits Application
- Installer Submits Application
- Customer and Installer Application Review and Approval
- Installer installs the system
- Final Review
- Billing changes made/Inspection/Meter Set

Process

- Process should take ~20 days
- ACC does not regulate PV/DER installers
  - 66% of application error rate
  - 20% re-application error rate
  - All safety/reliability related
  - High turnover rate of installer administration
- Financial interest vs safety/reliability
- Must be adaptable to system conditions

Conclusion

- Safety is #1
- Rules must be dynamically adaptable
- Utility is the proponent of system change and installer accountability – in real-time
- Process must be adaptable and transparent