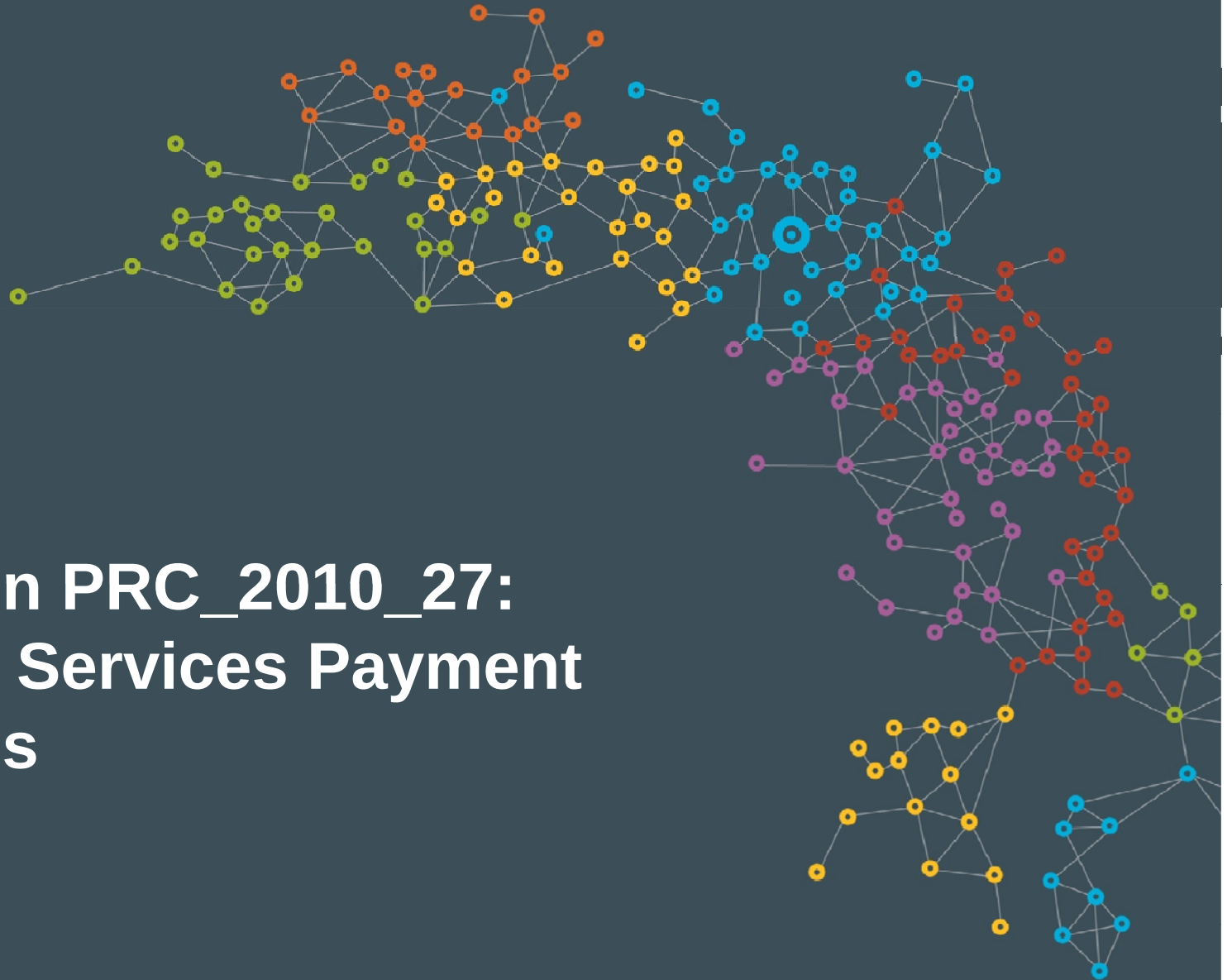




Update on PRC_2010_27: Ancillary Services Payment Equations

Background

- REGWG Work Package 3: Frequency Control Services (ROAM Consulting)
- Aim to assess the impact on FCS of increasing levels of intermittent generation in the SWIS
- ROAM recommended change to LFAS cost calculation and allocation
 - “Full Load, Marginal Generation” cost allocation
 - Cost calculation changes (implemented by MEP)
- ROAM analysis involved estimation of future Load Following Requirement using variation of Minimum Frequency Keeping Capacity (MFKC) calculation (clause 3.10.1(a))
 - o Loads: compare minute n with average $\langle n-15 \rangle : \langle n+15 \rangle$
 - o Intermittent Generators: compare minute n with average $\langle n-45 \rangle : \langle n-15 \rangle$
 - o Assumes no ability to predict IG output in next Trading Interval

PRC_2010_27: Ancillary Services Payment Equations

- Initial proposal developed by ROAM
- Presented at November 2010, March 2011 and June 2011 MAC meetings
- Issues raised during the development of the proposal included:
 - o Source, frequency and granularity of LFR and LFR_Loads
 - o Inclusion of uninstructed Scheduled Generator fluctuations
 - o Treatment of non-wind Intermittent Generators
 - o Capacity Cost reallocation for Spinning Reserve
- Proposal placed on hold due to Market Evolution Program

Since June 2011

- Introduction of Balancing and LFAS Markets
- LFR can vary by Trading Interval
- IPP dispatch more transparent – ramp rates, Tolerance Ranges
- Confirmed landfill gas intermittency, first solar PV facility
- Collgar impact on LFR less than expected
- SM no longer uses “unreliable” MFKC calculation (clause 3.10.1(a)) to determine LFR
 - LFR determined by SM on a trial and error basis
 - Variation of Technical Rules requirement – 99.9% vs 99% - reliability vs cost
- SM raised issue on Upwards LFAS limit – 12% of SR (clause 3.10.2)

Current Situation

- MFKC calculation for year ending August 2012:
 - 35 MW, Load Only 31 MW (<n-15>:<n+15> methodology) (assumes can forecast intermittent generation as well as load)
 - <n-45>:<n-15> methodology gives 102 MW (assumes cannot forecast intermittent generation trend at all)
- LFR caused by mix of load, intermittent generation, Scheduled Generator deviations from Dispatch Instructions and ramping adjustments
- No clear boundary between LFAS and Balancing:
 - When does Balancing become LFAS?
 - VEBP “Dispatch Instructions” needed to analyse LFR
- Clause 3.10.2 issue (12% SR limit) still outstanding

Conclusions

- PRC_2010_27 depends on LFR and LFR_Loads - no robust calculation methodology is currently available
- LFR cannot be analysed/determined without transparency of VE Dispatch Instructions
- Scheduled Generator deviations and ramping adjustments significant contributors to LFR
- Balancing/LFAS boundary - trade-off between dispatch cycle length vs LFAS quantity required
- Further work needed on cost allocation
- Decision needed on 99.9% vs 99% performance requirement
- Other issues: 12% SR limit, SR Capacity Cost allocation, definition of MFKC

Next Steps:

- Decision on dispatch cycle length (Balancing/LFAS boundary)
- Work with SM to provide transparency of VEBP Dispatch Instructions
- SM/IMO present discussion paper on 99% vs 99.9% at December 2012 MAC
- IMO to continue investigations into LFR and cost allocation, report back to MAC in 2013
- 2013/14 Ancillary Services Review to address other issues
- Reduce gate closure period, length of standard dispatch cycle