

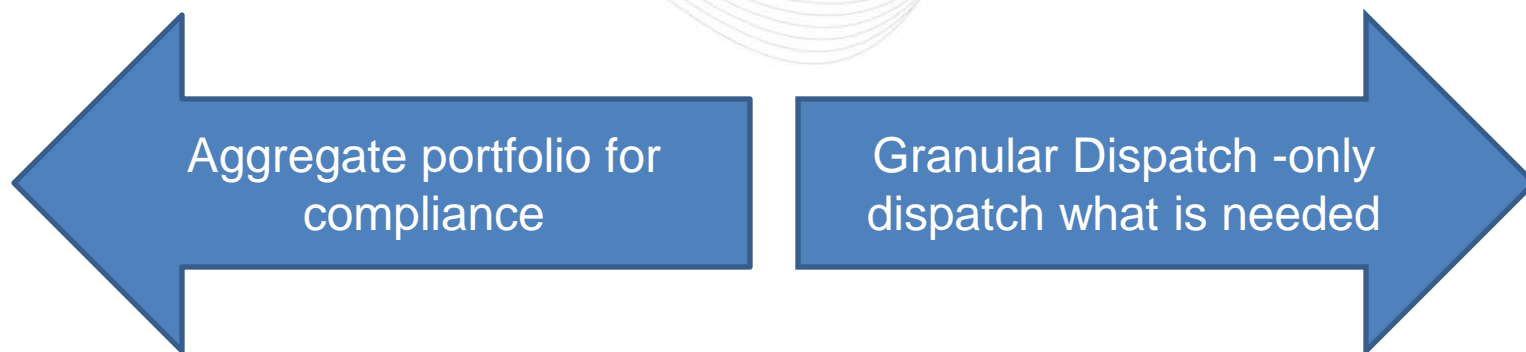
Sub-zonal dispatch proposed for '11/'12 Delivery Year

DRS (Demand Response
Subcommittee)

5/13/2011

- Current market rules allow zonal, lead time and sub-zonal dispatch:
 - Key limitation based on use of ALL CALL technology
- Significant changes to system topology for '11/'12
 - ATSI integration
 - TRAIL line implementation
- Successful implementation sub-zonal dispatch through State by Zone implementation in summer 2010.

- OATT
 - Market Operations
 - Attachment DD
 - Attachment DD-1
- OA
- RAA
- M13
- M18
- M10



- Sub zones defined in advance to enable CSP to easily dispatch their customers.
- Transparency of rules from Dispatch to Settlements (clear communication for customer expectations)
- Flexibility to manage the system based on unpredictable conditions

- Known major constraints that divide a zone (based on scarcity pricing definitions/analysis):
 - AP South: APS|East
 - East: Meted|East, PPL|East
 - Central: PN|East
 - West: PN|East
 - 5004/5005: PN|East
- Pending TRAIL implementation and redefinition of APSouth may create more subzones (or change existing):
 - Dom
 - PE
- Unknown constraints for more localized transmission constraints
 - Very difficult to predict
 - May be focused on major load center/metropolitan areas

- Sub-zonal dispatch by:
 - State/DC by zone combination
 - zone by zip code defined sub zone
 - LDA nested within zone
- CSP must have accurate zip code on location in eLRS – this will be used to determine which registrations are dispatched.
- See posted document for list of zip codes for zip code defined subzones.
- If new sub zonal dispatch needed during the DY, PJM will publish list of zip codes 3 days in advance on a best efforts basis of anticipated need.
 - Publish list on pjm.com and ensure designation used on ALL CALL (and included in Emergency messages) is mapped to list of zip codes.
 - PJM will only request sub-zonal dispatch on sub-zone that has not been pre-defined within 3 days if needed to ensure system reliability.
 - PJM will provide CSP with list of registrations required to respond upon request.
- Aggregate registrations (more than one location) must respond with all locations if at least 1 location is in sub-zone
 - Keep simple and avoid dispatching only some of the locations on a registration

Subzones are only dispatched when necessary – this should be a rare situation

Sub-zonal Dispatch ('11/'12 procedure)

Zone	Expected Subzones	Subzone?	Subzone Type
AECO		na	
BGE		na	
COMED		na	
DAY		na	
DUQ		na	
JCPL		na	
PECO		na	
RECO		na	
PSEG	North	Y	LDA
DPL	South	Y	LDA
PEPCO	DC	Y	State
DPL	DE	Y	State
AEP	IN	Y	State
AEP	KY	Y	State
APS	MD	Y	State
DPL	MD	Y	State
PEPCO	MD	Y	State
AEP	MI	Y	State
DOM	NC	Y	State
AEP	OH	Y	State
ATSI	OH	Y	State
APS	PA	Y	State
ATSI	PA	Y	State
AEP	TN	Y	State
AEP	VA	Y	State
APS	VA	Y	State
DOM	VA	Y	State
DPL	VA	Y	State
AEP	WV	Y	State
APS	WV	Y	State
APS	APS East	Y	Zipcode
METED	METED East	Y	Zipcode
PPL	PPL East	Y	Zipcode
PENELEC	PENELEC East	Y	Zipcode

Zones that are not expected to have subzones

- Any zone or subzone may be called by lead time.
- Zones that have sub-zones may be called at zone or sub-zone level.
 - Will not dispatch “Rest of” area.

Zones that have predefined subzones

- Sub-zonal dispatch communication same as zonal dispatch
 - ALL CALL (primary mechanism)
 - List of zip codes & subzone name will be published on pjm.com for zip code specific subzones
 - eDATA emergency messages
 - eLRS
 - Event message
 - Email (based on user preference)

- Number of events used to determine event multiplier based on number of events the registration has been dispatched
 - PEPCO DC dispatched twice
 - PEPCO zone dispatched once
 - 33% for PEPCO DC registrations (since they were actually dispatched 3 times) and 50% for non DC PEPCO resources (since they were actually only dispatched once and need to take min of 50% or 1/# events)
- Sub-zonal commitment based on registrations that were dispatched:
 - ILR = nominated capacity of registrations dispatched
 - DR = DR commitment * (nominated value of DR registrations dispatched/Total nominated value of DR registrations in zone).
 - CSP may not use other zonal registrations to substitute sub-zonal registrations that are dispatched.
 - Registrations dispatched based information submitted by CSP for location in eLRS.
 - PJM will use zip codes in eLRS just prior to event to determine exactly which registrations are required to respond.

- If registrations not dispatched then still required to perform annual test.
 - For example in 2010:
 - APS (WV, VA and MD) dispatched and therefore not required to Test
 - APS (PA) NOT dispatched and therefore required to Test
 - If test already conducted it is not necessary for CSP to submit the results.
- Sub-zonal commitment based on registrations that were NOT dispatched:
 - ILR = nominated capacity of registrations NOT dispatched
 - DR = DR commitment * (nominated value of DR registrations NOT dispatched/Total nominated value of DR registrations in zone).
 - CSP may not use other zonal registrations that were dispatched to substitute registrations that are required to test.

- PJM will make necessary information available to CSPs to fully understand determination of any penalties:
 - Event multipliers
 - Sub-zonal commitment (this is based on simple proration previously described)
 - Determine if feasible to get report included into MSRS

- **Dominion Zone**
 - Tornado activity in eastern portion
 - DOM|NC Load Management (87 MW) not enough to mitigate
 - Decision
 - Dispatch entire Dominion zone 1,006 MW
 - OR
 - Dispatch East portion with problem for 243 MW
- **Issue was resolved and it did not require Emergency conditions and therefore did not require Load Management.**
 - Incremental emergency energy cost to system if entire zone was dispatched ~\$4.5mm.

- **Pros**

- Complies with obligations under the tariff (clarification in M-13 may still be necessary)
- Provide transparency on how subzones will be dispatched (zip code basis and not Pnode)
- Complete process that leverages existing infrastructure
- Allows flexibility when necessary for unexpected conditions
- Always dispatch entire registration to keep simple for CSP.
- Up-front transparency based on known sub-zones
- 3 day notification period for new subzones on best effort basis
- PJM to provide registration list upon request.
- PJM to make compliance penalty reporting available to improve transparency when sub zonal dispatch occurs

- **Cons**

- All possible subzones are not pre-defined and CSP responsible for compliance
- PJM may dispatch entire zone when subzone could have alleviated the issue (LSE cost issue)
- CSP dispatch infrastructure may need short term investment to make operational

- Maintain existing flexibility and require every zip code to be a predefined subzone
 - Administrative challenges for CSPs
 - Scope – transitioning into longer term discussion that needs more discussion.
- Rule on no new subzones during Delivery Year
 - May jeopardize system reliability.
 - Timing - requires tariff change and do not have time to implement for '11/'12. This is really not a short term option.
 - Cost – PJM may be required to dispatch entire zone when only small area will help reliability issue.