Scheduling & Dispatch

Stakeholder Engagement

Industry Workshop

10 January 2024

This presentation provides an update on the Scheduling & Dispatch Programme.

Achievable – Valuable – "Simple"

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Scheduling & Dispatch: Industry Workshop (January 2024)

Agenda for today's workshop

Time	Topic
12:30	Lunch & Catch-up
13:00	Introduction, Opening Remarks
13:15	Programme Status Update
13:30	<u>Functional Review</u> - Tranche 1 modifications update - Tranche 1 (rebalancing/redispatch detail) - Tranche 2 - introduction
14:30	Systems Delivery Update
15:00	Break
15:15	Stakeholder Engagement: Upcoming Meetings
15:30	SDP Readiness: MP Survey #1 results
16:00	Meeting Adjourns

Since We Last Met

- Continuing to develop MP and Business Readiness questions
- MP readiness Survey #1 completed.
- Developing Training Approach
- Preparing MODS changes for SDP_001 NPDR
- Preparations for SDP_004 Rebalancing/Redispatching consultation
- ESPS approved @ MODS Committee
- Progressing integrated delivery plan (with key milestones)
- Engaged with tech vendors on detailed design

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Scheduling & Dispatch Programme- Industry Outreach

Why Are We Here?

	Inform	We are here is to provide information about the ongoing work with the SDP initiatives and the impact on the market participant community. We will provide a view of the programme's drivers, functional details, structure, timelines, and stakeholder engagement.
	Discuss	We will discuss the functional changes and how this impacts you and your portfolio. We will discuss the formal arrangement changes, and stakeholder management. We are happy to field all questions – and we may not be able to answer all of them today.
	Listen	We are here to listen. What are you thoughts on the SDP, the functional details and the impacts to your business? What questions do you need answers to? What clarity do you need?
	Ask	We will ask for your participation throughout – we are better together.

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Scheduling & Dispatch Programme – Industry Workshop

Setting Expectations

Meeting Rules

1. **Engage**: actively listen and ask questions. This session is for you.

2. **Show Courtesy**: allow everyone the time and space to participate in the discussion. Don't talk over another speaker.

3. **Scope Discipline**: maintain focus on SDP.

Scheduling & Dispatch Programme Overview

Key Principles

For this complex programme…

1. Be **pragmatic** about solution pathways.
2. Solve the **immediate and urgent** problems at hand.
3. Don't allow perfect to be the enemy of **good**.
4. **Communicate** early and often – to all **stakeholders**.
5. Maintain **support of industry**.
6. **Actively manage** multidisciplinary delivery team.

Achievable – Valuable – "Simple"

SDP Objective & Drivers

To enhance and improve the technology and capability of scheduling and dispatch in Ireland and Northern Ireland. This is driven by market participant needs, the EU Clean Energy Package mandates, and in support of the broader goals of renewables and System Non Synchronous Penetration (SNSP) penetration targets.

- Clean Energy Package requirements – NPDR treatment
- Ireland and Northern Ireland Government renewables targets for the 80%/70% total renewable energy and 95+% system non-synchronous penetration (SNSP) on an instantaneous basis.
- Market Participant requests for certainty on treatment of renewable assets, batteries – revenue certainty.
- Market Participant requests for improvement in re-balancing and re-dispatching (prevailing weather).

Scope of SDP

One component of the broader SOEF programme.

1. **SDP_001:** Operation of non-priority dispatch of renewables (NPDR)
2. **SDP_002:** Energy Storage Power Station (ESPS) integration
3. **SDP_003:** Fast Frequency Response (FFR)
4. **SDP_004:** Wind/solar dispatchability improvements
5. **SDP_005:** Reserve services scheduling and dispatch
6. **SDP_006:** Synchronous condenser scheduling and dispatch

Delivery Groupings

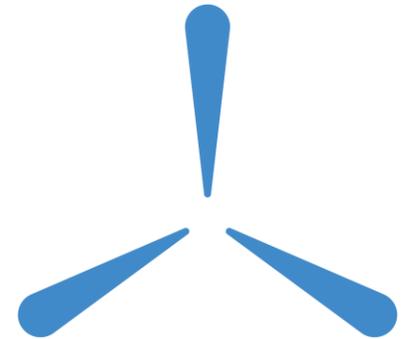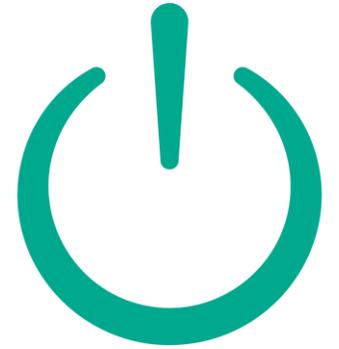| Group 1	Group 2
• SDP_001	• SDP_003
• SDP_002	• SDP_005
• SDP_004	• SDP_006

SDP Timeline

Detailed Design

Readiness and Rollout Implementation

★ SDP Group 1 Go-Live

Analysis

Today

TBC

Programme Status Update

SDP: Status Update (January 2024 Industry Workshop)

■ As planned, no issues ⇧ Improving
■ Minor - moderate concern ⇨ Steady
■ Significant issue / concern ⇩ Worsening

SDP — Summary Status

Overall Status	⬇ (red)	Overall programme status is red – at risk due to timeliness of funding decision. Good pace of detailed design and stakeholder engagement. Strong support for SDP across stakeholder community.
Schedule	⬇ (red)	SDP team working with IT vendors on detailed design. As funding not yet approved, SDP must be replanned.
Resourcing	⬇ (amber)	TSO/MO programme teams are fully staffed and engaged to continue work at pace. However, without funding, resourcing will be revisited. Amber status reflects funding uncertainty.
Finances	⬇ (red)	Awaiting RA decision on SDP Phases 3-5 funding.

Key Messages

MP Sentiment is Amber (worsening)
- MPs actively engaged and driving forward solutions
- Strong support for SDP
- Serious concern over SDP timelines expressed

Key Activities For Immediate Action
- Funding approval
- NPDR modification discussion
- Tranche 2 design and engagement
- Published SDP timelines

**Positive Developments (Since Last Report)**
- Approval on ESPS changes in MODS Committee
- Continuing Detailed Design at pace (T1), HLR Validation (T2)
- Strong stakeholder engagement and alignment on f(x) approach

Challenges (Since Last Report)
- Funding uncertainty persists
- SDP Timeline publication

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SDP Delivery Update
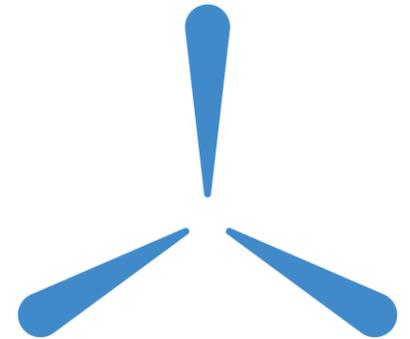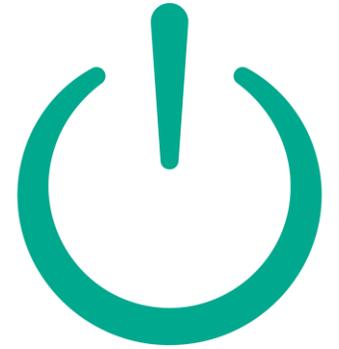
Scheduling and Dispatch: Timelines

SOEF Milestone ID	Milestone	Milestone Date
SOEF 1.1 SDP.M01	Requirements Definition Complete for Scheduling and Dispatch Programme Tranche 1 Initiatives	Jul - Sep 2023
SOEF 1.1 SDP.M02	Publication of key milestones for testing and go-live, including revised ISEM Technical Specification of Scheduling and Dispatch Programme Tranche 1 Initiatives	TBC
SOEF 1.1 SDP.M03	System Design Complete for Scheduling and Dispatch Programme Tranche 1 Initiatives	Jan - Mar 2024
SOEF 1.1 SDP.M04	System Build Commenced for Scheduling and Dispatch Programme Tranche 1 Initiatives	TBC
SOEF 1.1 SDP.M05	TSC, CMS & GC Mods Review Complete for Scheduling and Dispatch Programme Tranche 1 Initiatives by the relevant review group (Mods Committee, Grid Code Review Panel, Capacity Market Workshops respectively)	Jan - Mar 2024
SOEF 1.1 SDP.M06	Publication of milestones for Scheduling and Dispatch Programme Tranche 2 Initiatives	TBC
SOEF 1.1 SDP.M07	Regulatory Authority approval for TCS, CMC & GC Mods for Scheduling and Dispatch Programme Tranche 1 Initiatives	Apr - Jun 2024
SOEF 1.1 SDP.M08	Implementation and Go Live for Scheduling and Dispatch Programme Tranche 1 Initiatives	TBC
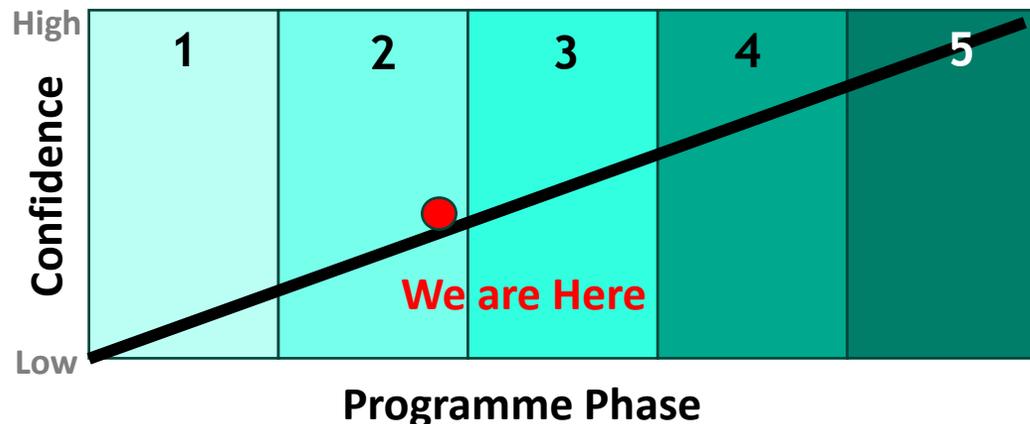
We currently have an overall **low – medium** level of confidence on the timelines. More detailed timelines cannot be provided until the following are all completed:

- Funding from the CRU and UR for Phases 3-5 is required
- We are engaging with industry in parallel on the changes, code modifications, etc and these need to be finalised as soon as possible to finalise the design
- We are engaging with our IT Vendors on the detailed design and delivery schedules and are awaiting final timelines

SDP Delivery Update

We have been asked by industry to provide more detail on the delivery timelines for the implementation of the Tranche 1 activities.

Headline	We are not yet in a position to provide a detail timeline for implementation of SDP, nor a start date for Phase 3 (Execution).
Current Status	• TSOs are currently undertaking a replanning exercise for SDP delivery. • Progress continues on Phase 2 design work. • Awaiting funding decision to begin Phase 3.
Key Factors Influencing Timeline Confirmation	TSOs previously advised that provision of the implementation timeline was dependent on three items: 1. Successful progression of detailed design of initiatives with system vendors 2. Approval of the required modifications to the Trading & Settlement Code and Grid Codes 3. Regulatory approval for SDP Phase 3 funding

Design With System Vendors + **Approval of Modifications** + **Regulatory Approval for Funding**

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SDP Delivery Update

We have been asked by industry to provide more detail on the delivery timelines for the implementation of the Tranche 1 activities.

Design With System Vendors

- We estimate that implementation and testing of Tranche 1 initiatives will take a minimum of 15 months

- Detailed timeline can only be provided once we receive full approval from the RAs and have finalised the detailed design of the initiatives with our system vendors

- We are competing with other System Operators for the software development roadmap of technology vendors.

Approval of Modifications

- Modification for ESPS (SDP_002) *recommended for approval* by committee Dec 2023

- Modifications for NPDR (SDP_001) are in workshops with industry *(17, 24 January 2024)*

- Changes to Annex SEM 13-011 are expected to be in consultation soon *(Coordinating with RAs on material to support consultation)*

Regulatory Approval for Funding

Phase 2
- Funding submission sent *April 2023*
- *CRU:* approved in full *June 2023*
- *UR:* 96% provisionally approved *October 2023*

Phase 3
- TSOs provided indicative funding (€26M – €33M) sent with P2 request in *April 2023*. *Noted* P3 costs would be fully known near the end of P2
- TSOs provided best known implementation costs of €36.6M (*November 2023*)
- RAs advise informing market participants of the magnitude of scope and costs, and consequently requires robust analysis of the submission to instill confidence and to ensure that any impact on consumer bills is robustly verified. (*December 2023*)
- RAs advise cost of programme is significant and requires more time to consider. (*December 2023*)

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SDP Delivery Update: Size of Effort

We have been asked by industry to provide more detail on the delivery timelines for the implementation of the Tranche 1 activities.

- SDP initiatives are complex, interdependent, and span multiple technology vendors
  - Hitachi Energy - MMS
  - General Electric – EMS, WDT
  - Brady – EDIL
  - Et al.

- They address multiple functional areas:
  - Registration, Data Inputs/Model
  - Scheduling & Dispatch
  - Imbalance Pricing
  - Balancing Market Settlement
  - Reporting

- Multi-disciplinary team is required to enable all changes

Estimated FTE Profile - Phase 3
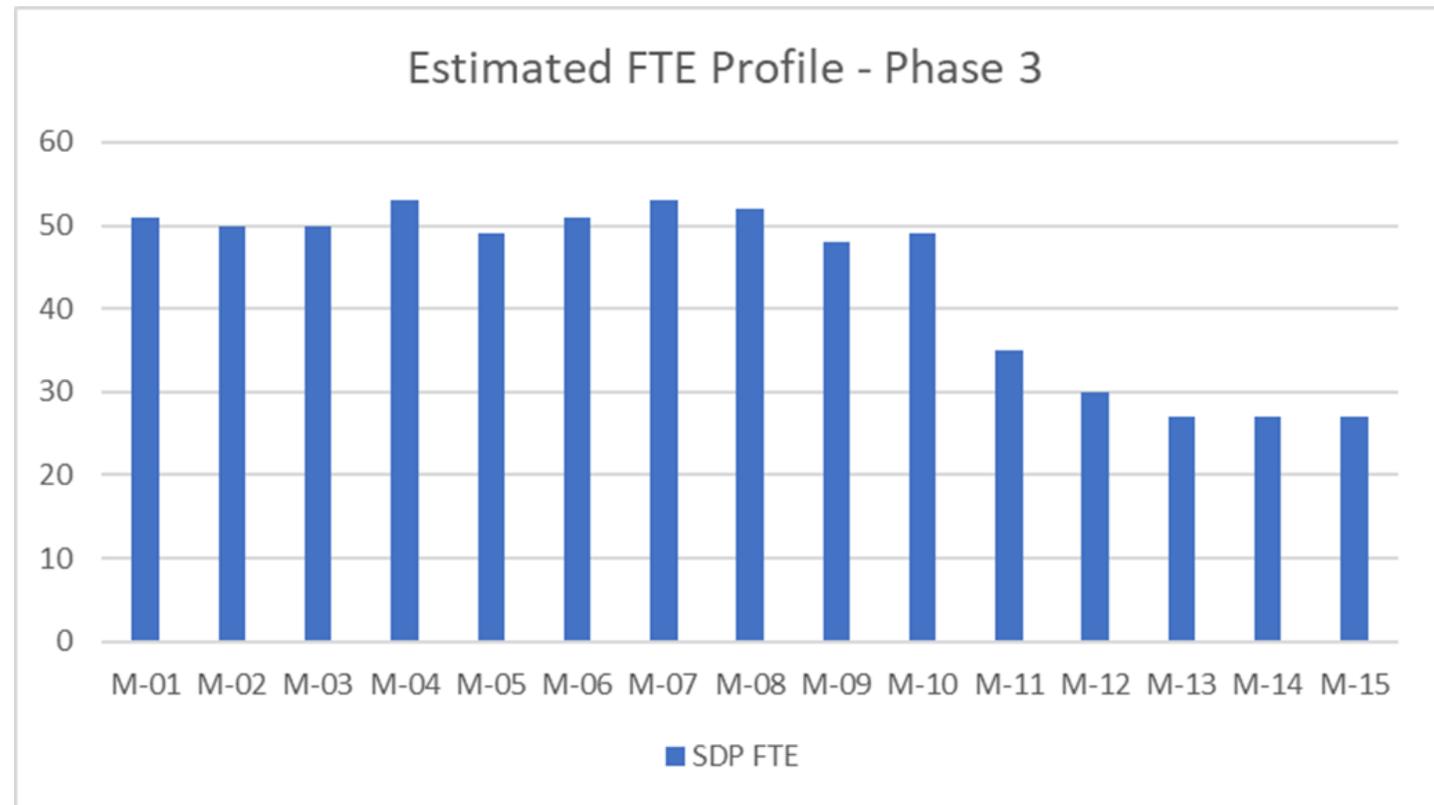
SDP_02 ESPS Integration Update

- Trading and Settlement Code mod voted for approval at December mods committee.

- Mod to Grid Codes to go to Grid Code Review Panels in the coming months.
    - Part of a wider body of work to incorporate ESPS units into Grid Codes.
    - Changes resulting from the Scheduling and Dispatch Programme are minor clarifications to SDC sections.
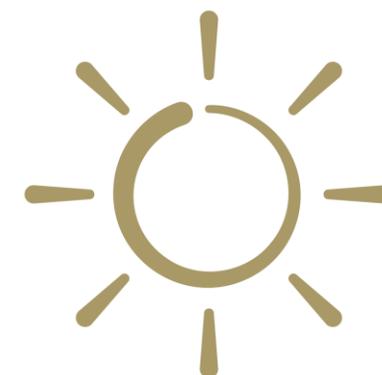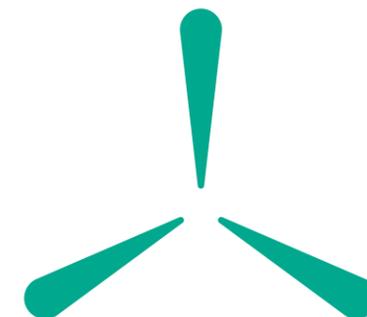
SDP_01 Non-Priority Dispatch Renewables (NPDRs) Update

- Trading and Settlement Code mod to go to mods committee for a vote in February.
    - Additional sessions to be held in advance of mods committee meeting.
        - o Wednesday 17th at 2pm
        - o Wednesday 24th at 2pm
    - Please email SchedulingandDispatch@EirGrid.com if you wish to attend.
    - Please send any requests, proposals, examples, etc. on the NPDR mod to the above address for inclusion in these sessions.

- Mod to Grid Codes to go to Grid Code Review Panels in the coming months.
    - Changes are minor clarifications to SDC sections only.
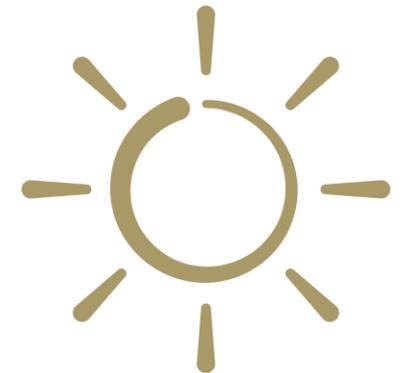
SDP_01 Queries

Will this unit still be treated as Priority Dispatch when it comes off the REFIT scheme?
Does the unit need to reregister when it comes off REFIT?

A unit coming out of support won't mean they'll automatically lose priority dispatch. Details on what determines eligibility can be found in the documents Decision Paper on Eligibility for Priority Dispatch Pursuant to Regulation (EU) 2019/943, published by the SEM Committee.
Participants also have the option to give up Priority Dispatch if they wish.

If the unit retains Priority Dispatch, they will be settled in the BM the same as today. Information on this found in SEM training modules found at https://www.sem-o.com/training/modules/.
If the units give up priority dispatch, they will become NPDRs.

Compensation for non-market based redispatch under Article 13(7) of the Clean Energy Package is being discussed elsewhere in the context of the judicial review.

A unit does not need to re-register when it comes off REFIT.
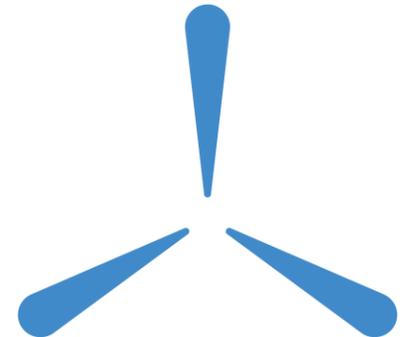
SDP_04 Wind and Solar Dispatchability Improvements: Constraint and Curtailment

- Participants raised concerns about the allocation of constraint and curtailment and the ability to take into account changing weather conditions.

- A new function - rebalancing - will reallocate constraint or curtailment across units in a group according to their ability to contribute at that time, e.g. due to changing weather conditions.

- Rebalancing will result in zero net change to the group MW target but will cause some units to increase output and some units to decrease output.

- At a unit level, instructions will just present as new LOCLs and CURLs.

- Updated logic is also required to manage multiple overlapping constraint groups. Currently if a unit is contributing to two or more security violations, constraints are applied cumulatively.

- Target model is for constraints to be applied in parallel, i.e. recognition that reducing output for security violation #1 helps alleviate issues associated with security violation #2.

- Further details of calculation logic included in appendix to these slides.
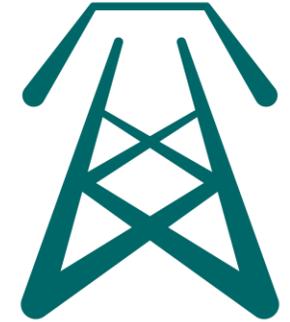
SDP_04 Wind and Solar Dispatchability Improvements: Energy Balancing of NPDRs

- All NPDR units will be subject to an active Merit Order (energy balancing) Setpoint. This will be a reference point for the application of any constraints or curtailment.

- As a consequence, NPDR units will generally always have Active Power Control (APC) enabled. Note that APC is linked to tighter frequency regulation.

- NPDR units may receive setpoints which are higher than their realtime availability (if in merit) to account for future changes to output. For settlement purposes, a deemed Dispatch Instruction will be generated with a value of the lower of the setpoint and availability to avoid undue uninstructed imbalance charges.

- Existing logic for applying, relaxing and removing constraint and curtailment requires updates to account for energy balancing actions on non-priority renewable units (NPDRs).

SDP_003: Fast Frequency Response - Day in the life

Submit and validate transactional data

- *Units verified as able to provide FFR will have Reserve Capability Curves (submitted via TSO approval process)*
- *Units verified as able to provide FFR will submit FFR declarations via EDIL (where using EDIL) or will have no cap to the Reserve Capability Curve*
- *Units provide COD, TOD, Forecast Availability and Physical Notifications as required for the Unit type*

TSO determines indicative operations schedules (LTS, RTC, RTD)

Control Room Engineers use scheduling outcomes as decision support to dispatch decisions, In real-time, Control Room Engineers have a real-time view of reserves via the EMS

Scheduling optimisation includes meeting reserve requirements (including FFR, as a % of the Largest Single Infeed)

Indicative schedules are published in displays and reports

Control Centres(s) make dispatch decisions

Balancing actions are included in pricing, with flagging/tagging applying FFR SO flagging rules in a similar manner to all other reserve types (e.g. POR). Settlement of FFR provision is via existing system services settlement processes

Approved DIs issued to Generator Units

Units receive dispatch instructions via EDIL or EMS

Pricing and imbalance settlement (based on DIs, PNs and metering)

SDP_005: Reserve Services Scheduling and Dispatch - Day in the life

Submit and validate transactional data

- *Units verified as able to provide each reserve type will have Reserve Capability Curves (submitted via TSO approval process)*
- *Units verified as able to provide each reserve type will submit unit declarations via EDIL (where using EDIL) or will have no cap to the Reserve Capability Curve*
- *Units provide COD, TOD, Forecast Availability and Physical Notifications as required for the Unit type*

TSO determines indicative operations schedules (LTS, RTC, RTD)

Control Room Engineers use scheduling outcomes as decision support to dispatch decisions, In real-time, Control Room Engineers have a real-time view of reserves via the EMS

Scheduling optimisation includes meeting reserve requirements (including FFR/SOR/TOR1/TOR2, as a % of the Largest Single Infeed)

Indicative schedules are published in displays and reports

Balancing actions are included in pricing, with flagging/tagging applying reserve SO flagging rules. Settlement of reserve provision is via existing system services settlement processes

Control Centres(s) make dispatch decisions

Approved DIs issued to Generator Units

Units receive dispatch instructions via EDIL or EMS

Pricing and imbalance settlement (based on DIs, PNs and metering)

Important Note: reserve modelling is already in place – this initiative is to ensure that all reserve contributions can be taken into account in scheduling by Control Room Engineers

SDP_006: Synchronous Condensers Scheduling and Dispatch - Day in the life

Synchronous Condenser
Scheduling & Dispatch

Submit and validate transactional data

- COD and TOD set selection
- Physical Notifications (stepwise), assumed to be zero
- Support submission data for negative output range
- Forecast availability (max=0, min=consumption when in Sync Cond mode)
- Zero start up and no-load costs

TSO determines indicative operations schedules (LTS, RTC, RTD)

Sync Condensers' energy consumption and inertial response will be taken into account in scheduling. They will not contribute to reserves. They will provide voltage support in real-time.

Indicative schedules are published in displays and reports

For SC units, Control Centre decides when they should be synchronised / desynchronised (and will provide inertial support when synchronised)

Control Centres(s) make dispatch decisions re Sync. Condensers

Settlement utilises the (already implemented) MOD_13_19 logic, where if the System Service Provider Flag = 1, Imbalance Charge/Payment is set to zero

Approved DIs issued to SCs, via EDIL

SCs always dispatched via EDIL, using SYNC and DESY instructions

Pricing and imbalance settlement (based on DIs, PNs and metering)

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Stakeholder Engagement: Industry Workshop

Stakeholder Engagement

Stakeholder Engagement will continue. We will host more industry-wide workshops and focused sessions for different groups (technical, programme management).

Engagement is bi-directional. We need to hear from you! You will hear from us.

Bilateral Meetings

Ongoing bilateral meetings to discuss SDP details.

Industry-Wide Engagement

- Monthly cadence for Industry workshops
- Standing placeholder at Market Operator User Group

Stakeholder Engagement: Industry Workshop

Contacting SDP

To raise an issue or query for the Scheduling & Dispatch Programme:

Contact	SDP Queries
	SchedulingandDispatch@Eirgrid.com
	Operating Hours
	9:00am - 5:00pm IPT (Mon-Fri)
	Queries received outside of operating hours will be addressed the next business day.

Information to Provide
• Your Name
• Your email & phone number
• Your organisation
• Topic of Issue/Query
• Description of the issue or query
• Any additional information to aid in understanding the issue or query

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Scheduling & Dispatch: Industry Workshop (December 2023)

Future Workshop Schedule

Date	Day of Week	Time	Location
07 February 2024	Wednesday	1:00 p.m. - 4:00 p.m.	Dundalk + Virtual Option
06 March 2024	Wednesday	1:00 p.m. - 4:00 p.m.	Dublin + Virtual Option
10 April 2024	Wednesday	1:00 p.m. - 4:00 p.m.	Belfast + Virtual Option

Future Discussion Topics

- System Delivery Plan (w/ milestones)
- Market Participant Readiness Criteria and Results
- Business Readiness
- Programme Readiness
- Technical Details (test environment, qualifications)
- Transition Plan (Registration, Data Readiness)
- Go-Live Plan

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SDP Readiness

Market Participant Readiness
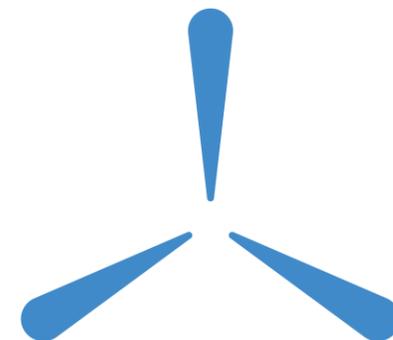
SDP Readiness: A Quick Refresher from November 2023 Industry Workshop

What is Readiness?	Readiness is the assessment of the level of preparedness for SDP Go-Live.	
To Whom Does it Apply?	MPs: Market Participant segments affected by the SDP changes Business: TSOs/MO Business Units affected by the SDP Changes SDP Team: Programme delivery of the SDP Changes	
When Will it be Conducted?	December 2023 through SDP Go-live. Conducted first for Tranche 1 Initiatives, then repeated for Tranche 2.	
How Will it be Used?	Use of self-assessment surveys to evaluate the level of readiness. Use these to identify gaps and other information needed, so that any outstanding issues are resolved in a timely matter.	
How Will it be Reported?	The degree of Readiness will be quantified for individual MPs, the MP segments, and the MP community as a whole and reported via scorecards, IWs, bilateral meetings and other media. Individual MP scorecards will only be shared with that MP.	
Why Does it Matter?	It is important that the TSOs and the MO are aware of the level of Readiness within their business units/teams and the MP community so any issues can be resolved in time for SDP Go-Live.	

Key Principles

1. **Transparent:** Provide a clear view of all Readiness Criteria and the methodology for evaluating, scoring, and publishing Readiness for the entire community.

2. **Cooperative:** Must operate an open and cooperative exchange among the Business, the SDP Team, and the Market Participants.

3. **Fair:** Must be consistent in the evaluation and reporting of Readiness across all parties.

4. **Simple & Meaningful:** Must be relatively straightforward, while being thorough enough to adequately assess the degree of Readiness.

5. **Outcome-Oriented:** Must focus on the data and outcome and less on the actual process. Must maintain flexibility in the process to achieve the objectives.

SDP

Market Participant Readiness Survey #1 Results
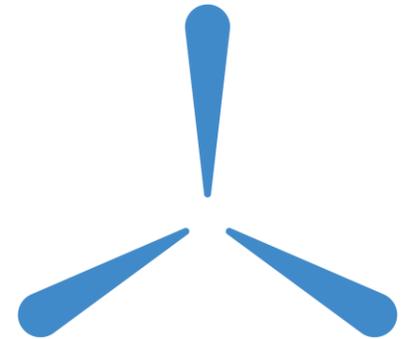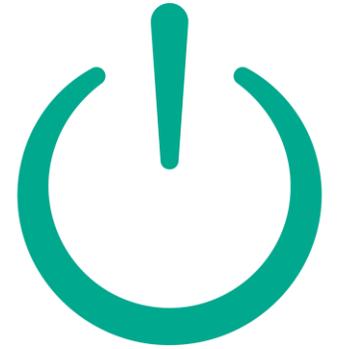
SDP: MP SDP Readiness Survey #1

Timeframe	Distributed 15 December 2023 Responses due 5 January 2024	
Who received the Survey?	Mailed to previously registered SDP Industry Workshop attendees Posted as SEMO Market Message	
How was it disseminated?	Via Survey Monkey	
Focus	The first Readiness Survey focused on four main areas: • Awareness • Timing • Training • Testing	
Responses	21 responses covering 16 different companies	
Results	Drumroll …….	

SDP Readiness Survey #1: Facility Types Represented *
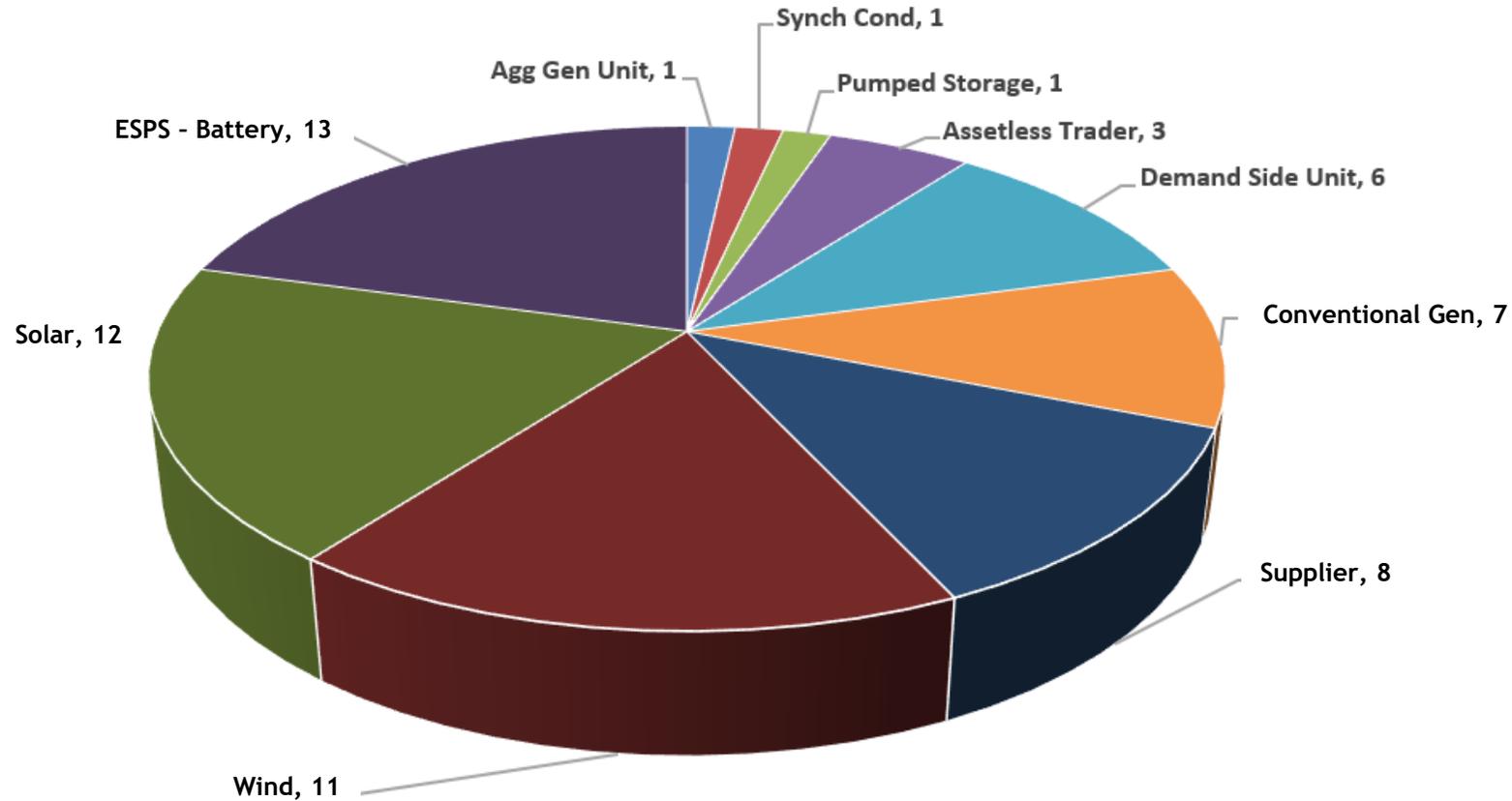
* All respondents were associated with more than one facility type

SDP Readiness Survey #1: Awareness

1. How aware do you feel you are of how the SDP Changes affect your area of responsibility?
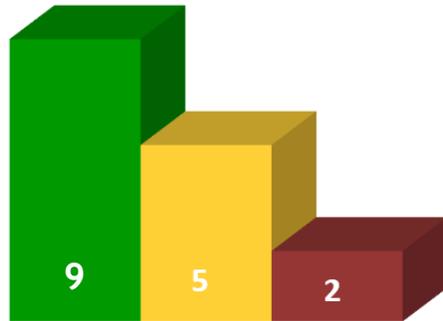
🟩	**High: Mostly aware but may have minor questions on some details**
🟨	**Moderate: Somewhat aware but need more details**
🟥	**Low or None: Have not assessed the impact or don't know about the changes**

Chart values: 9, 5, 2

2. Do you know where to find the latest information on SDP?   YES: 12 NO: 4

3. Do you have suggestions as to how EirGrid could improve the content and delivery of SDP information?

1. Centralised information
2. Published delivery timelines
3. Ensure all MPs reached

4. MS Word version of Day in the Life diagrams
5. Technology-focused workshops

Insights

- Majority of respondents have moderate to high awareness and all indicate need for delivery details.
- SDP Programme should continue proactive outreach to ensure increased MP engagement and awareness.
- Ensure all information is readily available and in usable format.

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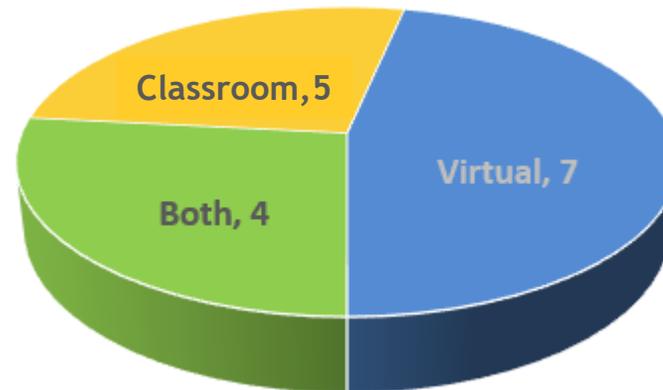
SDP Readiness Survey #1: Training

1. Do you think there is benefit in conducting training focused on SDP Changes?

YES: 14 NO: 2

2. If this training is offered, would you participate?

YES: 14 NO: 2

3. What training delivery format do you consider the most useful?


Classroom, 5
Virtual, 7
Both, 4

Insights

Majority see the merits of focused SDP Training and will participate. Virtual and Classroom format are welcome. Respondents intend to conduct training and will solicit more input as the SDP program progresses.

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SDP Readiness Survey #1: Timing

1. I-SEM Technical Specifications – how much in advance of Go-live do you need detailed interface and other technical details?

Months before Go-Live

Orgs

WANT
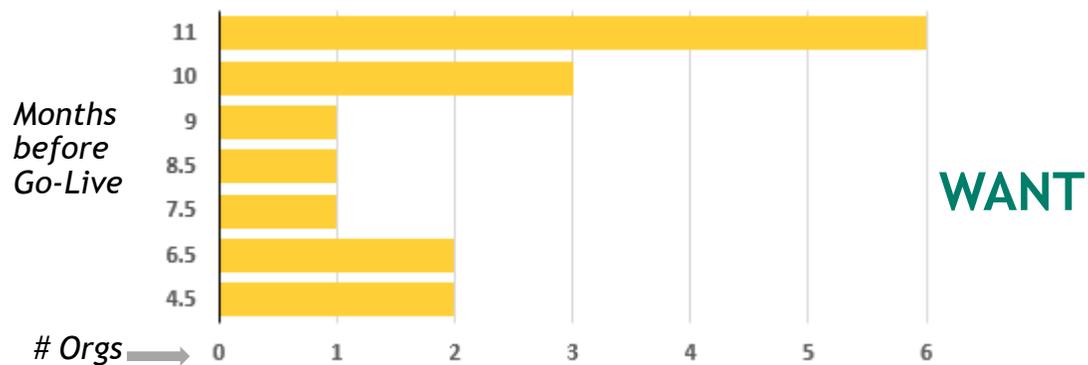
2. I-SEM Technical Specifications – if the above timeline could not be met, when do you consider the absolute deadline of having detailed interface and other details before there is a high risk that you would not be ready for SDP Go-Live?

Months before Go-Live

Orgs

NEED
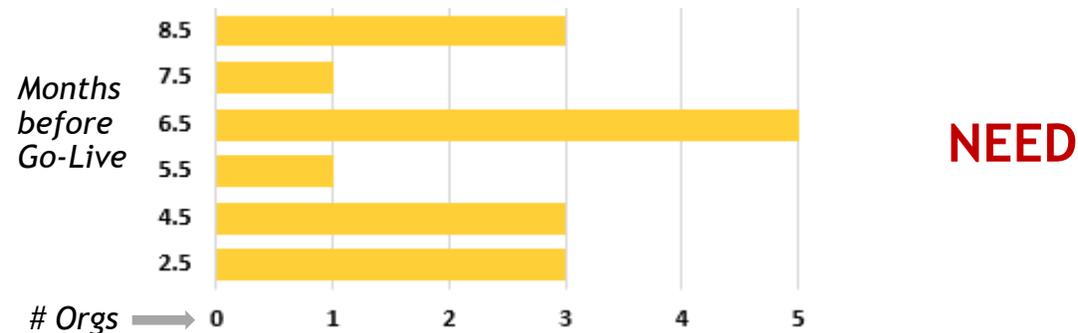
3. Based on SDP information currently available, can you describe a project timeline for your own SDP Readiness?

<u>7</u> did not respond; <u>6</u> indicated no plan yet with 3 stating until they get timelines it is not practical to establish their plan; <u>1</u> is just starting on a project plan; <u>1</u> indicated they would need 10 – 12 months once more info is available.

Insights

Technical details and specifications should be prioritized early in delivery.
A low number of established delivery projects is due to lack of published SDP timelines. This is a priority for the community.
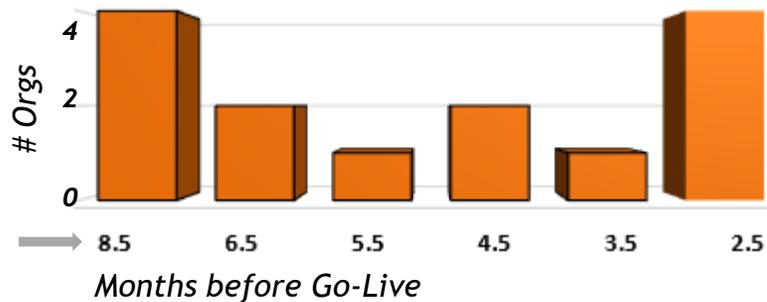
EirGrid semo SONI
Single Electricity
Market Operator

SDP Readiness Survey #1: Testing

1. Do you anticipate conducting participant testing for SDP changes?

- YES: 10
- NO: 1
- LIKELY: 3
- NOT SURE: 2

3. How far in advance of SDP Go-live should the SDP participant test environment be in available?

Bar chart — # Orgs vs Months before Go-Live (8.5, 6.5, 5.5, 4.5, 3.5, 2.5)

2. What types of participant testing do you believe are important for the SDP changes?

1. Interface and Process Flow

2. Operational (Day in the life) like I-SEM

3. Testing environment to cover SDP lifecycle from bid submission through to settlement.

4. Submit PNs across the day and provide (via flat file/other) the resulting dispatch instructions based on actual system conditions over the day.

5. Testing all BM submissions including COD, TOD and PN for NPDR and full Battery operation (ex-ante / Balancing Market).

6. End to end exchange of new submitted TOD/COD data. End to end tests of dispatch functionality and asset responses.

7. Include EDIL and any such alternatives. Previous minor changes to the EDIL web browser has caused operational issues.

8. Various testing scenarios for AGUs and DSUs from dispatch to settlement.

Insights

Majority of respondents will participate in testing.

A strong preference for test environment enabling the full lifecycle of SDP initiatives.

Sufficient time to utilize the SDP test environment is indicated.

SDP Readiness: Overall Summary & Next Steps

Overall Summary

- ~21 responses from 16 different companies to 1st MP Readiness Survey

- Responses received were thoughtful with good insights and suggestions

- ~40% of respondents reported less than full understanding of the SDP impact on their operations.

- Most respondents are interested in training with a mix of virtual and in-person classroom favored.

- Many respondents identified a requirement for technical details/specs 10-12 months in advance.

- Most respondents have not yet developed a full project plan/timeline. All are awaiting definitive timelines for SDP delivery.

- All respondents signaled intent to participate in testing. Strong desire for testing full lifecycle of SDP changes.

Next Steps

1. Prepare SDP Readiness Web Page

2. Organize next SDP Readiness Survey

3. Reach out to Market Participants who have not yet fully engaged on SDP

Next Steps

Please provide feedback when you have reviewed and considered the information from today's discussion.

Follow-up from any "Listen" item discussed today.

Be on the lookout for the next Industry Workshop, to be scheduled at a monthly cadence.

SDP: Glossary

Term	Definition
BA	Business Analyst
BM	Balancing Market
CC	Control Centre
CCT	Control Centre Tools (LSAT, RMT & VTT)
COD	Commercial Offer Data
CSB	Counterparty Settlement and Billing
DI	Dispatch Instruction
DRDQ	Dispatch Regime Dispatch Quotient
EG	EirGrid / SONI / SEMO
EMS	Energy Management System
ESPS	Energy Storage Power Station
FFR	Fast Frequency Response
GDX	Group Data Exchange
GSP	Generator Setpoint
HIS	Historical Information Server
HLR	High Level Requirements
IPO	Innovation and Planning Office
IPQBOA	Instruction Profile Quantity Bid Offer Acceptance
JAPR	Jurisdictional Active Power Ratio
MI-STL	MMS to CSB integration
MMS	Market Management System
MOL	Merit Order List
MPI	Market Participant Interface
NF	Non-Functional
NPDR	Non-Priority Dispatch of Renewables Unit
OMS	Outage Management System

| Term	Definition
OUI	Operator User Interface
PD RES	Priority Dispatch. Renewable Energy Source
PIMB	Imbalance Price Calculation
PIO	People and Information Office (IT)
PN	Physical Notification
PS	Pumped Storage
QD	Dispatch Quantity
QM	Metered Quantity
RMT	Ramping Margin Tool
ROM	Rough Order of Magnitude
RSD	Reserve Scheduling Dispatch
RT	Real Time
RTQBOA	Real Time Quantity Bid Offer Acceptance
RTU	Remote Terminal Unit
S&D	Scheduling and Dispatch
SCADA	Supervisory Control and Data Acquisition
SDP	Scheduling and Dispatch Programme
SEMO	Single Electricity Market Operator
SME	Subject Matter Expert
TOD	Technical Offer Data
TSO CSB	Transmission System Operator Counterparty Settlements & Billing
UC	Use Case
WDT	Wind Dispatch Tool
WEF	Wind Energy Forecast
WPRED	Wind Predictor

Apply

- Unit Setpoint = Group Target x (Unit Reference Quantity/ Sum of Reference Quantities)

- For curtailment:
  - Unit reference quantity = nominal output

- For constraints:
  - Unit reference quantity = nominal output

                    OR

  - Unit reference quantity = what nominal output would be if no other constraint groups were active.

- Constraint set points may not be issued to the unit if it is already bound by a lower set point from another constraint group.
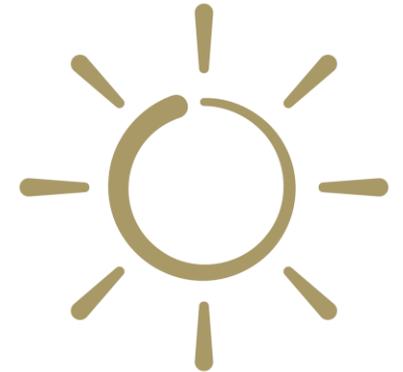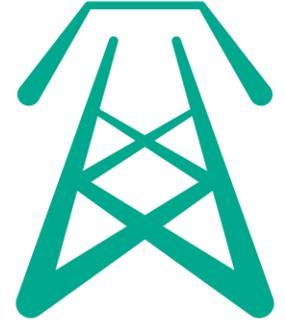
Rebalance

- Rebalancing is applied to a single group. Units bound by an action of a different type or from a different group may be excluded from the calculation.

- The group MW target remains unchanged for rebalancing. Rebalancing will result in zero net change but will cause some units to increase output and some units to decrease output.

- A limit factor may at times be used by the Grid Controller to split Rebalancing across several actions. This is to mitigate MW swings on the system.

- Unit Setpoint = Group Target x (Unit Reference Quantity/ Sum of Reference Quantities) x Limit Factor

- For curtailment:
    - Unit reference quantity = Minimum of availability, merit order set point, constraint set point

- For constraints:
    - Unit reference quantity = Minimum of availability, merit order set point, curtailment set point

- Calculated constraint set points may not be actively issued to the unit if it is already bound by a lower set point from another constraint group.
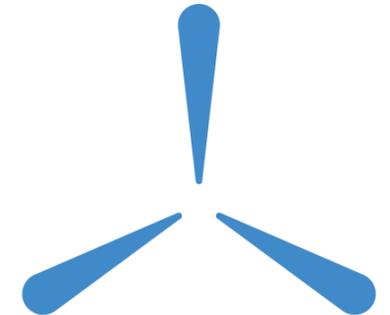
Relax

- Unit Setpoint = Unit Current Position + [(Group Target - Group Current Position) x (Unit Reference Quantity/ Sum of Reference Quantities)]

- For curtailment:
  - Unit reference quantity = headroom between nominal output and next highest quantity of a different type (availability/merit order/constraint)

- For constraints:
  - Unit reference quantity = headroom between nominal output and next highest quantity of a different type (excluding curtailment)

    OR
  - Unit reference quantity = headroom between what nominal output would be if no other constraint groups were active and next highest quantity of a different type (excluding curtailment)

- Constraint set points may not be issued to the unit if it is already bound by a lower set point from another constraint group.

Remove

- For curtailment:
    - Unit set point = Minimum of availability, merit order set point, constraint set point

- For constraints:
    - Unit set point = Minimum of availability, merit order set point

      OR
    - Unit set point = Minimum of availability, merit order set point, set points from other constraint groups