Future Power Markets

Stakeholder Engagement

Industry Workshop: 08 May 2024

This presentation provides an update on the Future Power Markets Programmes.

Achievable – Valuable – "Simple"

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Future Power Markets - Industry Outreach

Why Are We Here?

Inform

We are here is to provide information about the ongoing programmes of work in the Future Power Markets space and the impact on the market participant community. We will provide a view of the programmes' drivers, functional details, structure, timelines, and stakeholder engagement.

Discuss

We will discuss the changes and how this impacts you and your portfolio. We will discuss the functional, technical, and formal arrangement changes, stakeholder engagement, and programme management updates. 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 your thoughts on the FPM programmes, the functional, technical, and regulatory 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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FPM - Industry Workshop

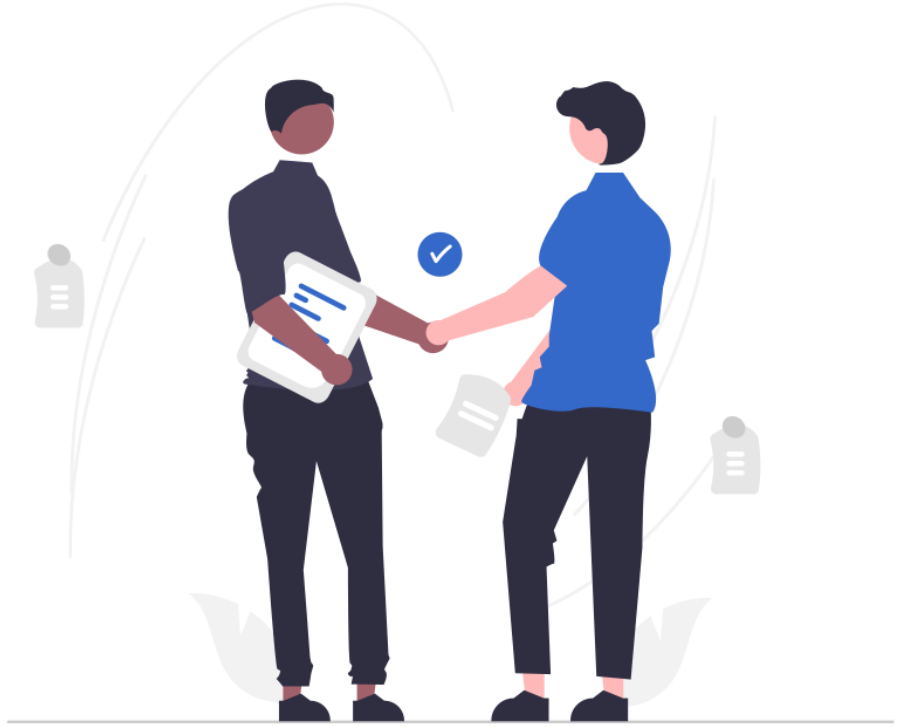
Setting Expectations

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 FPM.



FPM: Industry Workshop (8th May 2024)

Agenda for today's workshop

Time	Topic
14:00 – 14:05	Introduction & Housekeeping
14:05 - 14:10	Future Arrangement System Services – Status Update
14:10 – 14:15	Scheduling & Dispatch – Status Update
14:15 – 14:20	Strategic Markets Programme – Status Update
14:20 – 14:55	Overview of Strategic Markets Programme Initiatives
14:55 - 15:00	AOB/Close out

FASS Programme Update

FASS: Status Update (April 2024 Industry Workshop)

As planned, no issues | Improving
Minor - moderate concern | Steady
Significant issue / concern | Worsening

FASS — Summary Status

Overall Status	→	Overall green status following the commencement of the DASSA Design Consultation period and publication of TSOs' Phased Implementation Roadmap (PIR), providing clarity in terms of programme trajectory and scope.
Schedule	↓	Schedule remains green, however extension of DASSA consultation increases the risk of programme delays and is challenging for the TSOs to accommodate due to the interdependent nature of business design workstreams.
Resourcing	→	TSO programme teams are staffed and engaged to continue work at pace. However, continued funding approval is required to maintain resources
Finances	→	Awaiting RA decision on Phase 2 Uplift and Phase 3 & 4 ROM Estimate Funding Application. Expectation that existing funding will be exhausted by June 2024.

Key Messages

Service Provider Sentiment:
- TBC. Survey to be issued at later date in addition to feedback gather through existing engagements channels.

Key Activities for Immediate Action
- Funding approval
- DASSA Consultation query responses

Positive Developments (Since Last Report)
- Publication of System Services Code Panel ToR
- DASSA Auction Design Industry Workshop
- IT System Procurement continues

Challenges (Since Last Report)
- Funding uncertainty persists

Note: DS3 System Services Tariff Consultation is outside of the scope of the FASS programme. This is covered under existing operations.

Refreshed: 7th May 2024

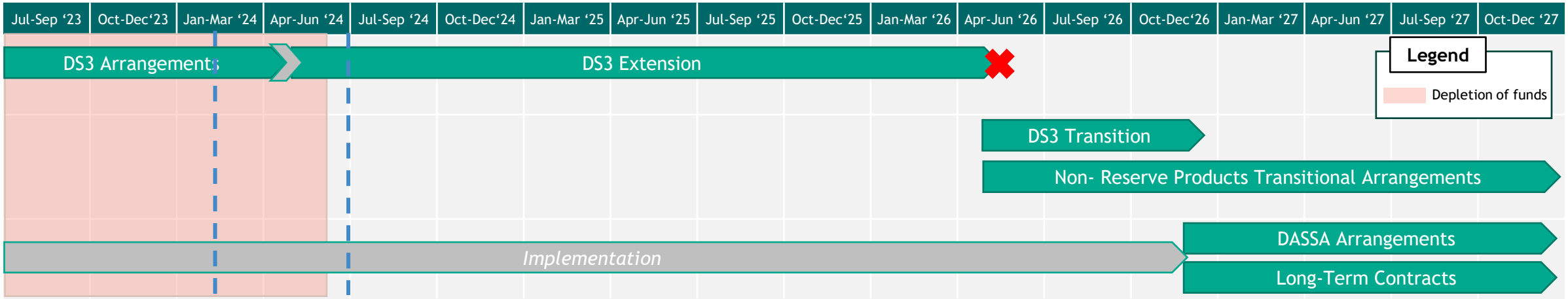
This update is provided to the FPM industry workshop on 8th May 2024.

DASSA Design Consultation

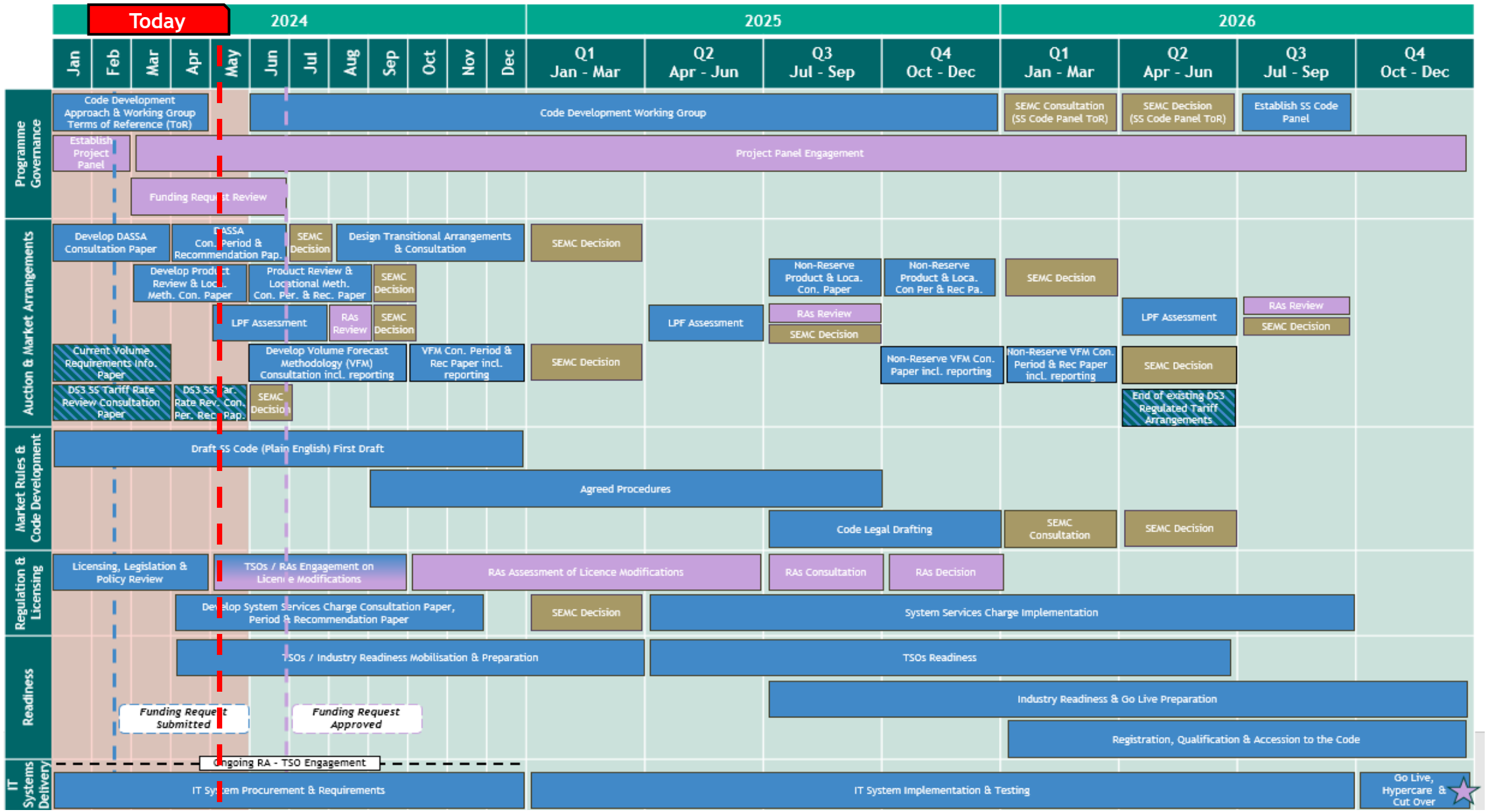
Extended 10-week consultation period remains underway. Responses to be submitted by May 24th.
Note: Programme schedule remains very challenging and risk that further delays will have material impact to timelines.

Additional consultation material and written responses have now been published by the TSOs on the respective websites. Email notification issued.

We also welcome any further questions to be directed to FASS@Eirgrid.com or FASSProgramme@soni.ltd.uk
Queries are requested by the 15th May for responses to be issued ahead of consultation close.



Phased Implementation Roadmap - Level 1



Milestone Reference List

*Milestone closed internally, ongoing discussion with RAs re. next steps.

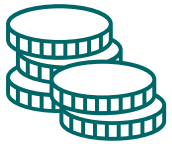
Milestone #	Milestone Description	Milestone Dependencies	Milestone Owner	Milestone Target Date	Status
FASS.01	Establish The Project Panel	-	RAs	February 2024	Complete
FASS.02	SEMC Decision On Phased Implementation Roadmap	-	SEMC	February 2024	Approved
FASS.03	Commence IT Systems Procurement	FASS.02	TSOs	February 2024	Complete
FASS.04	Publish Phased Implementation Roadmap 1	FASS.02	TSOs	March 2024	Complete
FASS.05	Publish FASS Daily Auction/Procurement Design Consultation Paper	FASS.04	TSOs	March 2024	Complete
FASS.06	Commence Detailed Requirements	-	TSOs	March 2024	Complete
FASS.07	Establish System Service Code Development Working Group ToR	FASS.04	TSOs	April 2024	Complete
FASS.08	Issue List of Proposed Licence Modifications to RAs	-	TSOs	April 2024	Complete
FASS.09	Publish FASS Daily Auction Product Review and Locational Methodology Consultation Paper	-	TSOs	May 2024	In Progress
FASS.10	FASS Programme Funding Request Approval	-	RAs	June 2024	Pending
FASS.11	Publish FASS Daily Auction/Procurement Design Recommendation Paper	FASS.05	TSOs	June 2024	In Progress
FASS.12	SEMC Decision on FASS Daily Auction/Procurement Design	FASS.11	SEMC	July 2024	
FASS.13	Publish Annual Layered Procurement Assessment Recommendations Paper 2024	-	TSOs	July 2024	
FASS.14	Publish FASS Daily Auction Product Review and Locational Methodology Recommendation Paper	FASS.09	TSOs	August 2024	
FASS.15	Commence Grid Code Review	FASS.14	TSOs	September 2024	
FASS.16	Publish Phased Implementation Roadmap 2	FASS.04	TSOs	September 2024	
FASS.17	SEMC Decision on FASS Daily Auction Product Review and Locational Methodology	FASS.14	SEMC	September 2024	
FASS.18	SEMC Decision on Annual Layered Procurement Assessment 2024	FASS.13	SEMC	September 2024	
FASS.19	Publish System Services Charge Recommendations Paper	-	TSOs	November 2024	
FASS.20	Publish High Level Readiness Approach	FASS.12	TSOs	November 2024	
FASS.21	Publish Volume Forecasting Methodology Recommendation Paper including Volumes Requirements Reporting	FASS.17	TSOs	December 2024	
FASS.22	Draft Plain English Version of SS Code	FASS.07 FASS.12 FASS.17	TSOs	December 2024	

DASSA Consultation Workshop

The DASSA Consultation workshop took place virtually on Wednesday 24th April.

The workshop gave a detailed overview of the DASSA auction design, mechanics, FAM and secondary trading with 'Day in the life' examples presented to support the discussion. The TSOs welcomed industry feedback on a number of topics and encouraged industry to send in any queries or feedback they might have to the FASS mailbox.

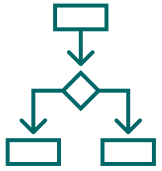
Key Themes



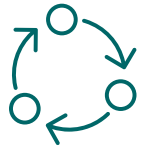
Bidding Process

Clearing Process

Commitment Obligations



Secondary Trading



Final Assignment Mechanism

Key Stats

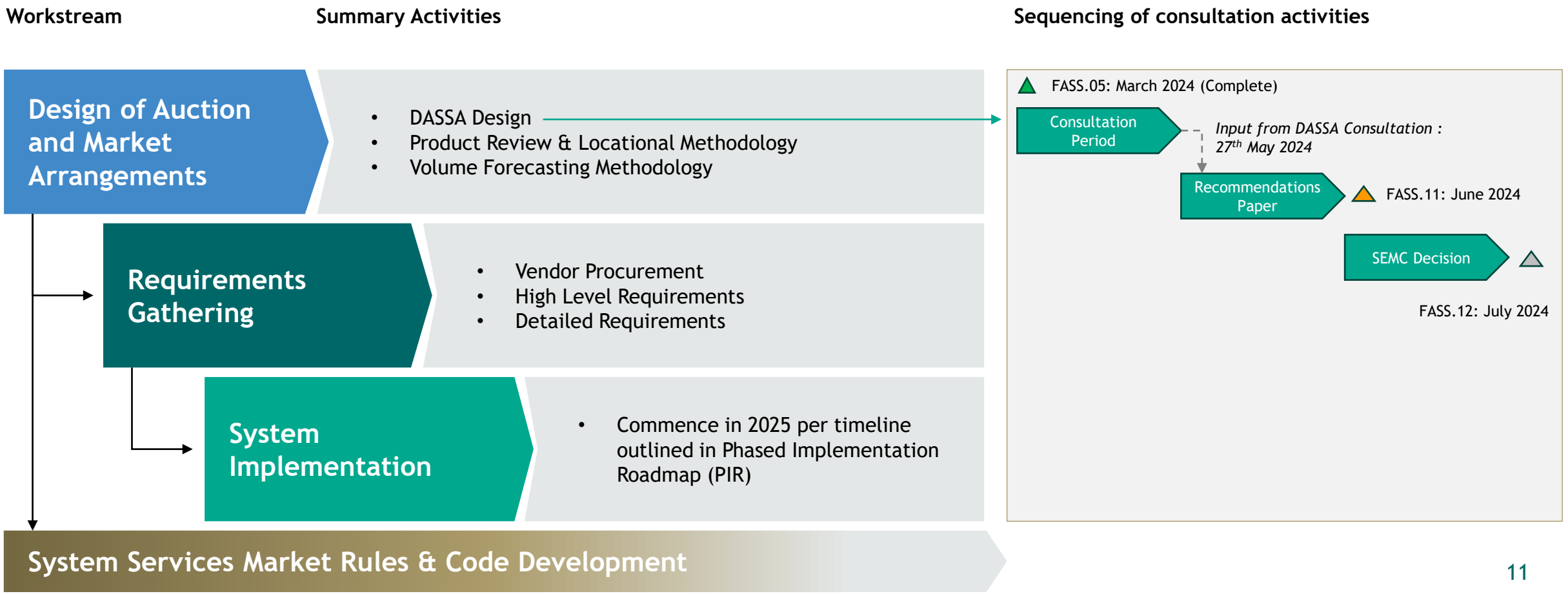
- 100+ attendees
- 90 queries received to date

Next Steps

- Workshop slides and examples published to industry 25th April. *Complete*
- Workshop queries and minutes circulated with industry 1st May. *Complete*
- Address industry queries received through the FASS mailbox ahead of the consultation deadline. A two-week extension has now been granted at industry's request, responses to be submitted by May 24th

Implementation sequence and interdependencies

- A two-week extension of the DASSA arrangements consultation has been granted following requests by industry.
- Schedule remains challenging and extension of any design activities increases the risk of programme delays
- Extensions are challenging for the TSOs / Ras to accommodate without mitigating actions due to the interdependent nature of business design workstreams.



Thank You

Questions can be submitted to

FASS@Eirgrid.com or
FASSProgramme@soni.ltd.uk

Next Steps:

- The DASSA consultation will be open for an additional 2 weeks closing on **24th May 2024.** Industry queries are requested by the 15th May in order to be addressed ahead of consultation close.
- Following this consultation the TSOs will publish a recommendation paper in advance of the SEM Committee Decision in **July 2024** as per the timelines set out in the PIR.
- Product Design and Location Methodology Consultation Paper to be published end of May 2024 as per the timelines set out in the Phased Implementation Roadmap.

Programme Status Update

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.

Tranche 1: - SDP-01 Operation of Non-Priority Dispatch Renewables (NPDR)

- SDP-02 Energy Storage Power Station (ESPS) integration

- SDP-04 Wind dispatchability improvements

Tranche 1 Go Live: April 2025

Tranche 2: - SDP-03 Fast Frequency Response (FFR)

- SDP-05 Reserve services scheduling and dispatch

- SDP-06 Synchronous condenser scheduling and dispatch

Tranche 2 Go Live: October - December 2025

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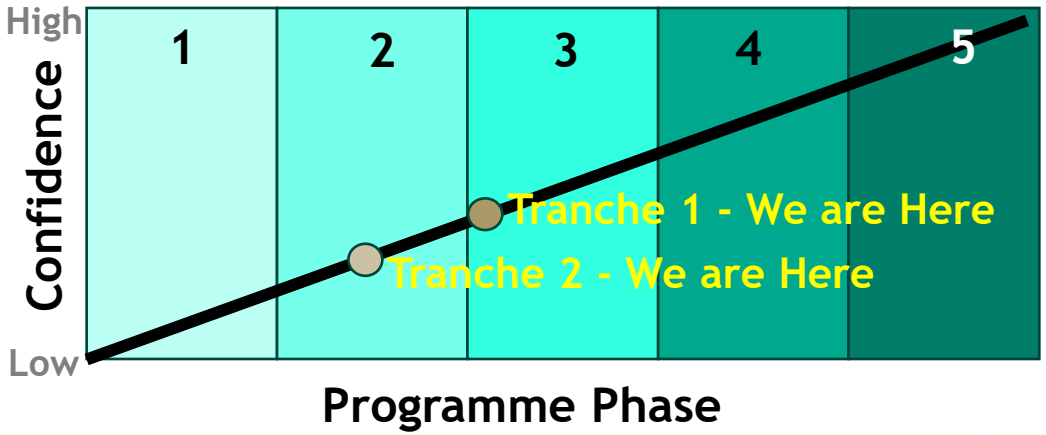
Scheduling and Dispatch: Milestones

Phase 2

SOEF Milestone ID	Milestone	Dates	
Tranche 1	Requirements Definition Complete for Scheduling and Dispatch Programme Tranche 1 Initiatives	September 2023	✓
Tranche 1	System Design Complete for Scheduling and Dispatch Programme Tranche 1 Initiatives	March 2024	
Tranche 1	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)	March 2024	✓
Tranche 2	Requirements Definition Complete for Scheduling and Dispatch Programme Tranche 2 Initiatives	July 2024	
Tranche 2	Publication of milestones for Scheduling and Dispatch Programme Tranche 2 Initiatives	September 2024	

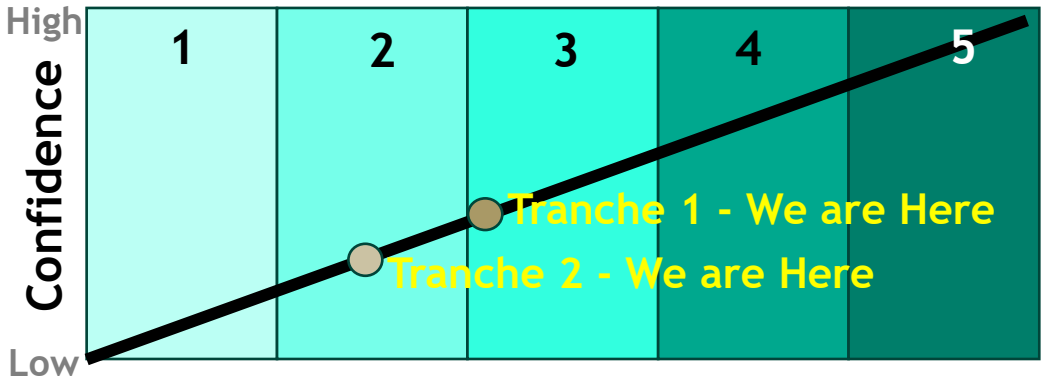


We currently have an overall **low - medium** level of confidence on the timelines. Confidence levels will increase as milestones are achieved and programme progresses further into Phase 3 for Tranche 1 and Phase 2 for Tranche 2

Scheduling and Dispatch: Milestones

Phase 3

SOEF Milestone ID	Milestone	Dates
Tranche 1	System Build Commenced for Scheduling and Dispatch Programme Tranche 1 Initiatives	March 2024
Tranche 1	Publication of key milestones for testing and go-live, including revised ISEM Technical Specification of Scheduling and Dispatch Programme Tranche 1 Initiatives	June 2024
Tranche 1	Regulatory Authority approval for TCS, CMC & GC Mods for Scheduling and Dispatch Programme Tranche 1 Initiatives	June 2024
Tranche 1	Implementation and Go Live for Scheduling and Dispatch Programme Tranche 1 Initiatives	April 2025
Tranche 2	Implementation and Go Live for Scheduling and Dispatch Programme Tranche 2 Initiatives	Oct – Dec 2025



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SDP: Status Update (April 2024 Industry Workshop)

As planned, no issues
Minor - moderate concern
Significant issue / concern
Improving
Steady
Worsening

Refreshed: 07 May 2024

This update is provided to the SDP industry workshop on 08 May 2024

SDP

Summary Status

Overall Status	→	Overall programme status is Green. Design is almost complete for Tranche 1 initiatives, remaining design documents to be completed over the next couple of days. Strong support for SDP across stakeholder community.
Schedule	→	SDP milestones have been shared with industry. SDP are progressing detailed implementation plans and plan to publish additional milestones in June 2024. Detailed design with IT vendors almost complete. Potential change to AMBER status if Modifications approval extends beyond planned date.
Resourcing	→	TSO/MO programme teams are fully staffed and engaged to continue work at pace.
Finances	→	SEMC All-Island Programme sub-committee approved the full funding request for the S&D (phases 3-5) programme on 22nd March 2024.

Key Messages

MP Sentiment is Green (steady)

- MPs actively engaged and driving forward solutions
- Strong support for SDP

Key Activities For Immediate Action

- Consultation on SEM-13-011 changes
- Tranche 2 design and engagement
- Preparation of detailed programme plan

Positive Developments (Since Last Report)

- Detailed Design complete (T1), Detailed Requirements under review (T2)
- ESPS Modification recommended for approval by mods committee on 23-Apr
- Progressing SEM-13-011 annex changes

Challenges (Since Last Report)

- No new challenges

SDP Tranche 1 Initiatives – Modifications Update

SDP_01 Operation of Non-Priority Dispatch Renewables (NPDR)	SDP_02 Energy Storage Power Station (ESPS) Integration	SDP_04 Wind Dispatchability Improvements
Trading and Settlement Code		
SDP_01 T&SC mod was recommended for approval by the Modifications Committee on 08-Feb and was sent for RA decision.	Updated SDP_02 T&SC mod was recommended for approval by the Modifications Committee on 23-Apr and was sent for RA decision.	TSO has provided proposed text for updates to SEM-13-011 annex to RAs, which is expected to be published for consultation in summer 2024.
Grid Codes		
The SDP_01 Grid Code mod has been reviewed by the Grid Code Review Panels/Joint Grid Code Review Panel on 20-Mar. Was recommended for approval by EirGrid panel, currently going through public consultation in NI. Following consultation, recommendation paper will be issued to CRU and UR.	The SDP_02 Grid Code mod has been reviewed by the Grid Code Review Panels/Joint Grid Code Review Panel on 20-Mar. Panel members requested more time to review, may need to be brought back to panels in June/July if changes are required.	

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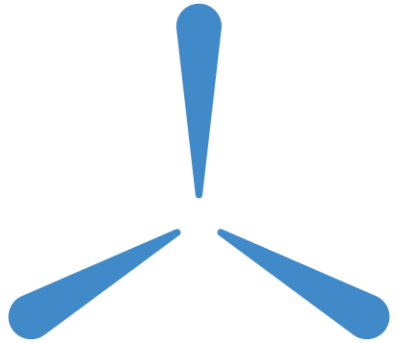
SDP_06 Synchronous Condenser Scheduling and Dispatch



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

SDP006

Synchronous Condenser Scheduling & Dispatch

Submit and validate transactional data

- *Cost-reflective start up and no-load costs (if applicable)*
- *Single complex PQ pair (if applicable)*
- *Physical Notifications to be submitted as zero MW*
- *Forecast availability (max avail=0, min output=0 or consumption (<0) to indicate that the unit is available to provide inertia and voltage support)*
- *Support submission data for negative output range (to support indication of availability)*

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

Sync Condensers will have no contribution to energy in scheduling (other than the consumption being included in the scheduling process when committed). They will only contribute to the inertial requirements and voltage requirements.
Scheduling will determine when the units should contribute to inertial and voltage requirements based on cost, availability and system needs.

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).
SC units will not be included in merit order lists.

Control Centres(s) make dispatch decisions re Synchronous Condensers

Approved dispatch instructions issued to Synchronous Condensers via EDIL

Settlement utilises the (already implemented) Mod_13_19 logic, where if the System Service Provider Flag = 1, charges/payments are set to zero.

Pricing and imbalance settlement

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SDP Tranche 2: Treatment of Synchronous Condensers

Design Element	Description
Forecast Availability	• Max Availability = 0. • Min Stable Generation = 0. • Minimum Output = 0 or consumption level (<0) to indicate that the unit is available to be committed to provide inertia and voltage support.
Simple COD	• Single PQ Pair (zero prices).
Complex COD	• Cost-reflective start-up cost and no-load cost (if applicable). • Single PQ pair (if applicable).
PNs	• Zeros always (or not submitted, therefore defaulting to zero).
Declarations (EDIL)	• MNMW=0 or consumption level (<0) to indicate that the unit is available to be committed to provide inertia and voltage support.
Operational Scheduling	• LTS, RTC and RTD can determine when synchronous condensers are needed to meet inertia requirements based on costs, availability and system needs.
Dispatch	• Will be synchronised/dispatched to negative MW to run.
Settlement	• Already implemented settlement logic (per MOD_13_19) continues. • Fixed costs (if applicable) to be paid/recovered via Fixed Cost Charge.

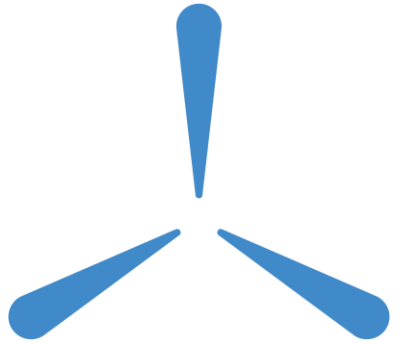
SDP Tranche 2: Initial view of VTOD parameters relevant to Synchronous Condensers

Generator VTOD Field	Inclusion	Low limi	High limit	XSD element	Synchronous Condensers
Participant Name	Mandatory	length=2	length=12	ParticipantName	*Per registered Participant list*
Resource Name	Mandatory	length=2	length=32	ResourceName	*Per assigned GU reference*
Set Number	Mandatory	1	6	SemSetNumber	*Must be one of 1-6*
Block Load Flag	Mandatory	boolean	boolean	SemBlockLoading:flag	*Must be set to False for Synchronous Condensers*
Maximum On Time	Optional	0	99999999.999	SemTimeF11C3	*Valid and to be included (will signifiy the maximum time for a Synchronous Condenser to provide inertia)*
Minimum Off Time	Optional	0	99999999.999	SemTimeF11C3	*Valid and to be included (will signifiy the maximum time for a Synchronous Condenser to be scheduled off, therefore not providing inertial support)*
Minimum On Time	Optional	0	99999999.999	SemTimeF11C3	*Valid and to be included (will signifiy the minimum time that a Synchronous Condenser can be scheduled once committed to provide inertia)*
Ramp Up Rate 1	Optional	0	99999.999	SemRampRate	*Applicable to Synchronous Condenser Units, between max=0 and min=consumption level when providing inertial contribution*
Ramp Down Rate 1	Optional	0	99999.999	SemRampRate	*Applicable to Synchronous Condenser Units, between max=0 and min=consumption level when providing inertial contribution*
Start Forbidden Range 1	Optional	0	99999.999	SemTodQuantity	*Assumption is that a Forbidden Range is needed to enforce being run at 0MW or -xMW (consumption level)*
End Forbidden Range 1	Optional	0	99999.999	SemTodQuantity	*Assumption is that a Forbidden Range is needed to enforce being run at 0MW or -xMW (consumption level)*
Minimum Stable Generation	Optional	0	99999.999	SemTodQuantity	*Must be zero for Synchronous Condenser units*

Remaining technical parameters are assumed not to be relevant to Synchronous Condensers:

- All parameters reflecting output ranges between 0 and Min Stable Generation (loading and deloading)
- Start-up times (assumed to be close to instantaneous)
- Warmth states
- Dwell times (given the assumed running at 0 MW or –x MW (consumption level)

Q&A



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Strategic Markets Programme

SMP has a wide scope, a significant portion of which are changes required for Celtic Interconnector Go-Live and enabling increased flexible technology

The following updates since last industry forum:

- **EU Integration:**
  - Work ongoing to develop High Level Requirements for EU Integration - requiring changes to market rules and schedules, operating processes and system scheduling;
  - Current Celtic Interconnector go-live is planned for Q4 2026, and integration with EU markets will need to be in place for this date
- **Post-Brexit Trading Arrangements:**
  - No update
- **Balancing Market Reform Updates:**
  - High level requirements for Balancing Market Reform initiatives are under development;
  - Once agreed, these will be assessed for code and system changes required and put into project delivery plans.

Development Process

Business

Business Conceptual Overview	High level view of what needs to be delivered, why, what elements of the current solution may be affected
Where we are	
High Level Requirements	What are the critical elements of the functional/technical requirements (i.e. “what needs to be delivered”)?

Implementation Team

Detailed Requirements	Vendor-specific detailed requirements
Designs	Vendor designs to explain how are each of the critical elements being delivered as part of a solution
Delivery	Delivery of approved designs

Dispatchable Consumption: Day in the life

Dispatchable Consumption

Treatment of Dispatchable Consumption

***Note**: DCUs are not Generator Units or Supplier Units; they are registered as a separate Unit type*

Ex-Ante Trading

Participants may trade in the ex-ante markets (DAM, ID) with respect to DCUs, as for all other Unit types

Submit transactional BM data for DCUs

For DCUs, input data for the BM includes:

- *Complex COD (SUC, NLC, PQ pairs with divisibility indicators per MW step)*
- *Simple COD (PQ Pairs with divisibility indicators per MW step)*
- *Technical Offer Data*
- *Forecast availability (max=0, MSG=0, minout <=0)*
- *Real-time declarations via EDIL (for energy and reserves)*
- *Reserve capability curves, for relevant System Services Products*

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

TSOs include DCUs in operational scheduling, with a decision to move DCUs away from PNs reflected in the costs submitted by Participants. If PN=0, the scheduler will normally only recommend action for a DCU where the action reduces the schedule production cost

DCUs are included in scheduling reports in the same manner as for all other units included with the Operational Scheduling Runs

Indicative schedules are published in displays and reports

For DCUs units, Control Centre decides when they should be dispatched (MWOF<0) or when increased consumption should end (via MWOF=0 instruction)

Control Centres(s) make dispatch decisions re DCUs

Approved DIs issued to DCUs, via EDIL

DCUs will always be dispatched via EDIL, primarily using MWOF instructions (they will be considered ON and available where their lower availability limit is not zero

DCUs are settled in the same manner as for all other units, as part of BM settlement processes

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

EirGrid GROUP

DCU = electroboilers, hydrogen electrolysers, etc.

Enduring NPDRs: Day in the life

Enduring NPDR

Enduring arrangements for NPDRs in dispatch

Scheduling

Execute Operational Scheduling Runs

TSOs execute Operational Scheduling Runs using existing tools (via MMS):
- *LTS (Long Term Schedule), up to 30h horizon*
- *RTC (Real-Time Schedule), 3.5 hour horizon*
- *RTD (Real-Time Dispatch): 1 hour horizon*

Calculate Constraint (market-based, by NPDR)

Calculate Constraints (aggregate for PDs per Constraint Group)

Calculate Curtailment (aggregate for NPDRs+PDs)

Relies on deriving:
(a) By unit for constraint associated with NPDRs
(b) In aggregate for constraint associated with PDs per WCG
(c) In aggregate across NPDR+PD for curtailment per jurisdiction

Dispatch

Control Room Engineers take actions based on decision support tools

Constraint Actions: Pro-rata for PDs, market based for NPDRs

Curtailment Actions: Pro-Rata for NPDRs+PDs

NPDR Balancing Actions (via Merit Orders), per SDP delivery

Approved DIs issued to NPDR/PD Units, via EMS (WDT)

Approved actions for renewable units are issued via control setpoints within the EMS (WDT) (and are provided to MMS in the required Dispatch Instruction format for use in pricing and settlement processes)

Key:
LTS = Long Term Schedule
NPDR = Non Priority Dispatch Renewable
PD = Priority Dispatch
RTC = Real-Time Commitment
RTD = Real-Time Dispatch
WDT = Wind Dispatch Tool

Multiple NEMOs: Day in the life

Multi NEMO

Multiple NEMO Arrangements

Registration (one-off)

- Registration of Assetless Units required for nomination
- Registration of Assetless Units required for settlement

Assetless Units must be registered so that cross-NEMO and cross-border exchanges (and associated imbalances) can be appropriately nominated and settled

Trading

- Participant trading via their respective NEMO(s)
- NEMO ex-ante trading execution
- NEMO confirmation of cleared trades

Participants may trade via any NEMO to which they are registered (including multiple NEMOs for the same period) – trading risks for the same volume will rest with Participants. NEMOs execute trading processes, producing cleared trades/associated prices

Nomination

- NEMO nominations (local trades)
- NEMO nominations (cross border exchanges)
- NEMO nominations (Cross-NEMO)

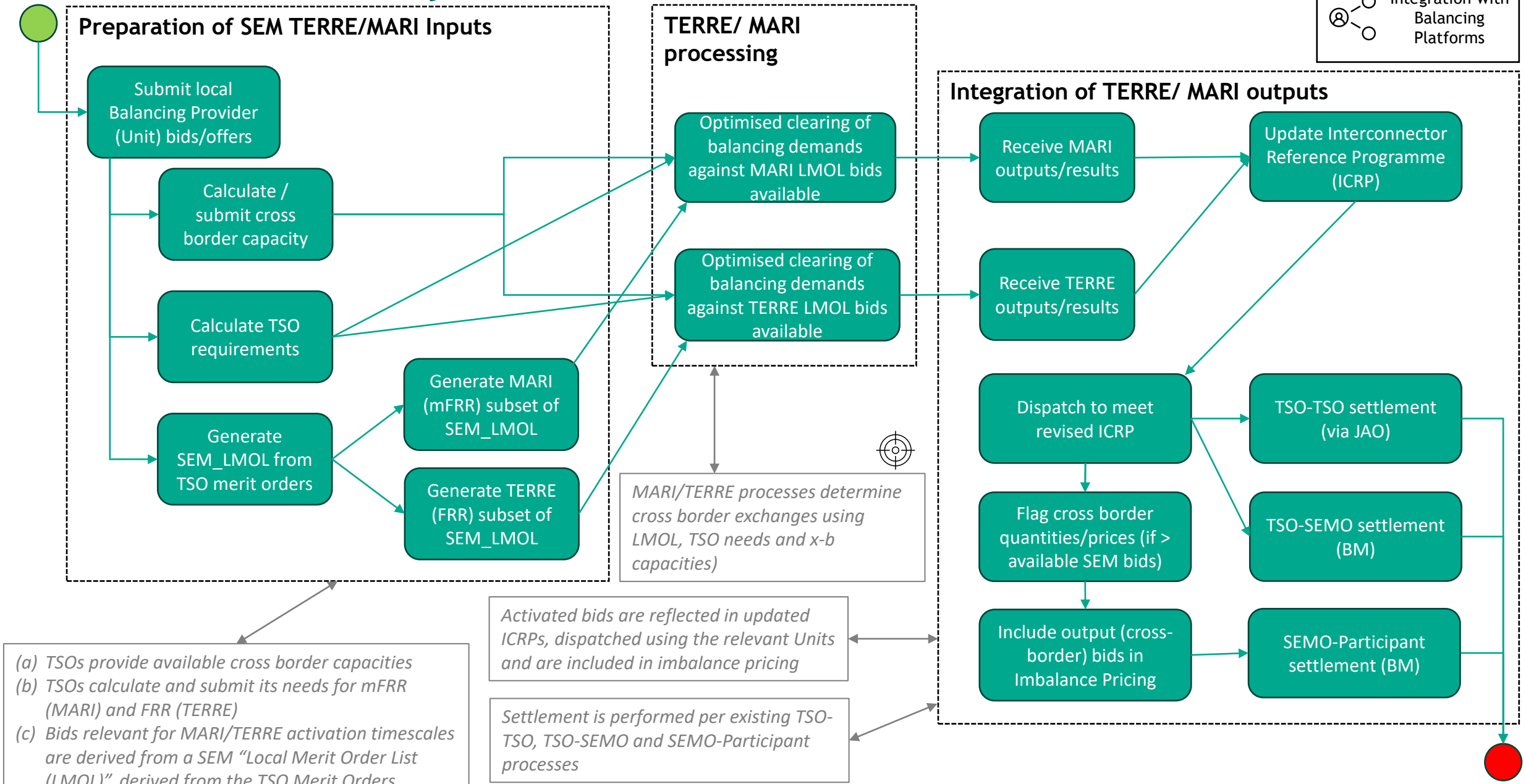
NEMOs provide nominations which encompass trades by Participants (local trades), cross-border exchanges (between TSOs) and exchanges between NEMOs

Balancing Market Settlement

- Imbalance Settlement based on nominations, dispatch, metering

Settlement is performed for each respective Participant, taking nominations into account from multiple NEMOs where applicable

TERRE / MARI: Day in the life



ESPS/LDES ("enduring storage"): Day in the Life

LDES Call for Evidence provided valuable feedback to TSOs; as procurement discussions remain open, design considerations current retain both primary options (Type A + B). This focus on primary elements could be subject to change based on RA direction

ESPS/LDES

Energy Storage Power Stations/ Long Duration Energy Storage

Operations

Type A: "CfD style"

Ex-Ante Trading

Participants can trade in ex-ante and will submit BM COD / TOD / PNs

Submit transactional data (PNs, COD)

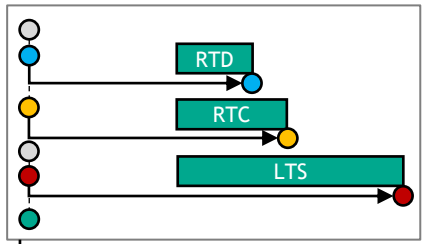
Type B: "service contract style"

Charge / Discharge Optimisation

"PN" and "price" derivation

TSOs will use historic data to predict expected Dispatch Down volume based on renewable forecasts. Optimisation using the best available market prices will determine efficient utility of charging / discharging, used to derive "PNs" and "prices" (DAM or Credit Assessment Price).

TSO derives storage targets from PNs/SoC



Operational Schedules will include storage targets for all ESPS units (however derived)

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

Control Centre(s) make dispatch decisions (charging / discharging)

All ESPS will be included in Merit Orders; no change otherwise to dispatch processes

Determine Imbalance Prices

Settlement

	"normal" ESPS Unit	Type A	Type B
Capacity Settlement	Yes	Yes	No
Ex-Ante Settlement	Yes	Yes	No
Balancing Market Settlement	Yes	Yes	Partial – only for Uninstructed Imbalances
System Services Settlement	Yes	Yes	No
Contracted ESPS (Contract) Settlement	No	Yes (2-way CfD based on auction award and revenues from trading in other markets)	Yes (paid based on auction award and unit availability)

Further Presentation / Engagement

- We are in the early stages of the design and no final decisions / commitments have been made
- Plan to continue to engage through this forum going forward
- Would welcome feedback for future engagement, e.g. dedicate future sessions to deeper dive on one topic?

Stakeholder Engagement: FPM Industry Workshop

Contacting FPM Programmes

To raise an issue or query for the Future Markets Programmes:

Contact	
	**SDP Queries** SchedulingandDispatch@Eirgrid.com **LDES Queries** FuturePowerMarkets@Eirgrid.com **FASS Queries** FASS@Eirgrid.com FASSProgramme@soni.ltd.uk **SMP Queries** SMP.PMO@Eirgrid.com **FPM Policy** FuturePowerMarkets@Eirgrid.com

Information to Provide

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

Future Power Markets: Industry Workshop
Future Workshop Schedule

Date	Time	Location
08 May 2024	14:00 – 15:00PM	Online
05 June 2024		Dublin
03 July 2024		TBD – Dublin, Belfast, Dundalk
07 August 2024		TBD – Dublin, Belfast, Dundalk
11 September 2024		TBD – Dublin, Belfast, Dundalk
09 October 2024		TBD – Dublin, Belfast, Dundalk
06 November 2024		TBD – Dublin, Belfast, Dundalk
04 December 2024		TBD – Dublin, Belfast, Dundalk

Future Discussion Topics

SDP

- ESPS and NPDR Modification Approval - Updates
- Detailed Implementation Plan
- Ongoing NPDR designation process updates

LDES

- Continuing to liaise with the RAs and Departments on next steps

FASS

- DASSA Design consultation to close 24th May 2024.
- Product Design and Location Methodology Consultation Paper to be published end of May 2024 as per the timelines set out in the

SMP

- Additional details on functional approach
- Additional topics TBD based on feedback

EMP

- TBD