



SEM Implementation of Meter Data Reading Aggregation, Communication and Storage

SIMDRACS Workshop1

12th April 2005

CER / Ofreg
CER Offices, Plaza House, Belgard Road, Tallaght, Dublin.
11.00 am – 3.30 pm



Agenda

- 1100hrs SIMDRACS Governance
- 1110hrs Facilitation of non-market (below de minimis) generation once SEM goes-live
- 1210hrs High-level business processes for metered data delivery and queries
- 1245hrs Q&A
- 1315hrs Lunch and Refreshments



SIMDRACS Governance

- Six entities in SIMDRACS
 - SONI *
 - SEM Implementation Team
 - Regulatory Authorities (CER + Ofreg)
 - NIE T&D *
 - ESB Networks *
 - ESB National Grid *
- * collectively provide different types of participant's metered data to the Market Operator
 - Roles assumed to continue broadly as currently



SIMDRACS Scope

- Delivery of wholesale meter data to SEM for settlement
- Managing knock-on effects on retail markets
 - NIE T&D and ESB Networks
- Input minimum harmonisation in Metering Code required for SEM go-live to relevant workstream
- Input minimum changes to licences and legislation to relevant workstreams
- A detailed list and an approach to further requirements post SEM go-live



SIMDRACS External Timeline

- Determination of facilitated non-SEM pool trades for July 2007 – **Topic one today**
 - May 5th 2006
- Determination of business processes around data queries – **Topic two today**
 - c. June 6th, 2006
- Systems delivered for integrated market testing
 - March 30th, 2007



Related Ongoing Work

- Consultations
 - Arrangements for micro-generation (Ireland)
 - Licensing (Ireland)
- Legislation
 - Measuring Instrument Directive (Northern Ireland, Ireland)
- SEM Workstreams
 - Legislation, licences, SEM contracts, T&SC + Agreed Procedures, SEM Implementation...



Determination of facilitated out-of-market trades for July 2007

Decision: May 5th



Who Can Choose Not to Be in the Market?

- Trading Site with MEC < 10MW
 - Called “below de minimis generator” in this presentation
 - Have choice to sign up to T&SC and participate in market or not
 - Note: always obliged to have a generator licence
- Any demand consumer does not have to participate
 - Never an obligation to get a supply licence and participate
 - That choice is always there for demand consumers



Below De Minimis Generator

- This section describes how a below de minimis generator sells electricity after July 2007
- It can choose to Participate in the Pool
 - Described in next few slides
- It can choose to not Participate in the Pool
 - Options presented



Pool Participation

- Principle: Current financial position in existing bilateral markets are possible in SEM pool
- Description of Participation and examples follow



Signing-Up to the SEM Pool

- All my generators will have a licence
- I must become a Party to the T&SC
- I must Participate in the Pool, and Register with the Market Operator every Generator on my Trading Site
- If I net import to that Trading Site on occasion, I must associate that demand with a licensed Supplier who also participates in the Pool



Payment from SEM Pool

- I can become a Price Maker or a Price Taker
 - Price Makers must be dispatchable or controllable
- I receive money from the Market Operator on a weekly basis
 - I require no other counter-party to my trade



Administration in SEM Pool

- I must pay market participation fees
 - Amounts not yet determined
- I must pay credit cover
 - Amount to be posted not yet determined but small for generators
- Depending on ability to be dispatched or controlled, I have different obligations to submit data to the market operator
 - Non dispatchable price-taking generation (“Autonomous”), for example, submit no data



Financial Contract Outside of SEM Pool

- Generator receives payment for a volume at a price
 - Revenue received
- Contracts for difference at different volumes and prices can be put in place against that revenue
 - Counter-parties required, e.g. suppliers, traders, etc.



SEM Pool Rules

- Note that there are no derogations from SEM rules
 - Common contract
- But SEM rules are different for different types of Participants
 - See Section 5 of the Code



Example A: Sell all power to more than one supplier

- Currently trade 100% of output in bilateral market with two percentage of output physical contracts
- In SEM:
 1. Participate in pool
 2. Receive SMP for total output
 3. Fixed percentage of output physical contract A → financial contract for difference for partial volume A
 4. Fixed percentage of output physical contract B → financial contract for difference for partial volume B



Example B: Sell some power through a bilateral and spill remainder

- Currently trade in bilateral market with fixed physical contract, selling remainder as spill
- In SEM:
 1. Participate in pool
 2. Receive SMP for total output
 3. Fixed physical contract for partial output → financial contract for difference for partial volume



Example C: Spill everything

- Currently spill 100% of output as spill
- In SEM:
 1. Participate in pool
 2. Receive SMP for total output



No Participation

- Principles: Should be able to sell to any supplier that wants to take the contract & existing “retail” trading (e.g. wheeling) should continue
- Series of Questions and Proposals presented



Question 1

- Can a below de minimis generator partially participate in the Pool?
 - i.e. only 50% of metered generation is sold through a Generator Unit
 - Other 50% is sold to a supplier in a retail contract outside the Pool (see later)



Proposal 1

- SEM is a gross mandatory pool
- Proposal: below de minimis generators are either fully participant in SEM pool, or fully non-participant
 - This proposal precludes the possibility of retail out-of-market trades, with remaining out-of-contract generation spilling into the pool
- Comments welcome on this Proposal 1



Supporting Reasons for Proposal 1

- Must be a full market participant now to do this
 - Is facilitated in SEM for full market participants (Example B)
- IT Systems
 - MRSO / NIE T&D systems (and SO system in event of controllable non-participant wind farms) will need to be cognisant of bilateral contracts for potentially large number of meters
- Policy
 - MRSO will de facto take on a market function
- Querying of data process
 - Pool Meter Data Query to Market Operator
 - Bilateral non-pool Meter Data Query to MDP



Question 2

- I am a licensed fully non participant generator? How does my generation get accounted for?
 - Can I sell to many different suppliers?



Proposal 2

- The current out-of-market trading will be as follows:
 - Generator must sell to one licensed supplier only
 - Generator meter must be registered by the licensed supplier with MRSO / NIE T&D
 - MRSO / NIE T&D will aggregate total non-participant generation metered data to a single supplier
 - Market Operator will subtract this generation metered data from the suppliers total demand metered data before settling with suppliers net position in the Pool
- Comments welcome on this Proposal 2

Reasons for Proposal 2

- Must be a full market participant now to do this
 - Is facilitated in SEM for full market participants (Example A)
- Will clarify and formalise process in both jurisdictions for selling to all suppliers
 - An improvement
- IT Systems
 - MRSO / NIE T&D systems (and SO system in event of controllable non-participant wind farms) would need to be cognisant of bilateral contracts for potentially large number of meters
- Policy
 - MRSO would de facto take on a market function

Question 3

- I am a licensed generator in Northern Ireland and I wheel. Will this continue? Will wheeling be implemented in Ireland?
- Wheeling is where a generator without a supply licence or participating in the pool can supply nominated customers
 - Generator paid if net export remaining
 - Customers alternatively supplied if not enough wheeled generation from licensed participating suppliers



Proposal 3

- Maintain wheeling for Northern Ireland
 - Maintained in monthly retail market
 - Estimated data for first settlement
 - Captured immediately if NIE T&D is supplier
 - Captured in Pool at first resettlement
- No wheeling implementation in ESB retail market systems
- Comments welcome on this Proposal 3



Reasons for Proposal 3

- Status quo
 - Does not require expensive adjustments of systems in Northern Ireland
 - Estimation process can minimise risk for wheeling generation
- ESB IT Systems
 - Market systems complicated and there is a risk to SEM delivery with this requirement
- Policy
 - MRSO would de facto take on a market function



Notes on Governance

- Non-market retail rules are currently under SLA between ESB Networks and Suppliers
- Non-market retail rules are under development in FEMO
 - Governance will follow from NIE T&D
- Changes to these current locations, or harmonisation will only be taken if absolutely necessary



Notes on Contracts

- Physical bilateral contracts (e.g. AERs, etc.) must become financial CfDs
- Power cannot be sold physically outside the pool and then also sell that power to the pool



Notes on Intermediary

- The Intermediary process works as follows:
 - Generator must still become a Party to T&SC
 - Intermediary is the counterparty to a physical contract and takes title to the power
 - Generator that is a Party nominates the Intermediary and also provides for alternative Intermediary
 - Intermediary takes on all obligations in the Code
 - Nomination of Intermediary subject to Regulatory Approval
 - Intermediary may appoint a generator to submit Offer data
- Therefore it is equivalent to full participation in the pool – just someone else is doing it for you



Summary of Proposals

- Below de minimis generator can
 - Participate in the Pool
 - No need for contracts if only spilling, market participation over-head
 - Get an intermediary to participate in the pool for them
 - Not participate in the pool and sell all electricity to one participating licensed supplier
 - Need for a contract, no market participation overhead



Summary of Proposals II

- Same rules apply to autoproducers that export on occasion
 - But if SEM participant, will need to have a licensed participant supplier for import
 - Possibly the autoproducer itself if a supplier licence is obtained
- Same rules apply to demand
 - Supplier licence will be required for SEM participation
 - Possibly the demand itself if a supplier licence is obtained
- Comments welcome



High-level business processes for metered data delivery and queries & resettlement

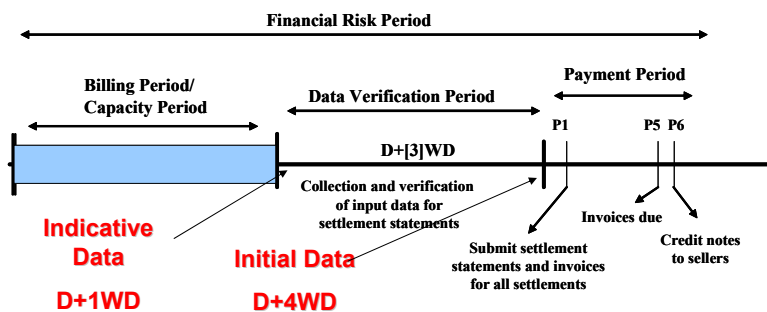
Decision: c. June 6th

This Section's Contents

- Describe Data Queries, Settlement Queries, Settlement Disputes
 - As implied in T&SC v0.10 and v1.0
- Change to implied business process of data delivery
 - Still weekly settlement for energy, monthly for capacity
- Seek trade-off between accuracy of information and business processes
 - Ties into Data Queries, Settlement Queries, and Resettlement Timeframe
- Discussion of timing of resettlements

Existing Weekly Data Send

- T&SC v0.10 and v1.0 assumes weekly delivery of data to SMO





Data Queries, Settlement Queries, Disputes

- Three working day Data Query window
 - WD+1 to WD+4, raised with Market Operator
 - Reasonable endeavours to solve within 4WD. Must be resolved with 10WD.
 - SMP can be reopened depending on nature and size of error, if any, found.
 - Resettlement may be automatically triggered if discovered error is material and problem not resolved within Data Query Period, otherwise wait until the next resettlement



Data Queries, Settlement Queries, Disputes

- Settlement Query may be raised anytime before +13M+5WD
 - No need to have filed a Data Query first
 - Limited items that can be queried
 - MG, MD, ND, EA, AA
 - Must be solved within 1 month
 - SMP cannot be reopened
 - Resettlement may be automatically triggered if error is material, otherwise wait until the next resettlement



Data Queries, Settlement Queries, Disputes

- Settlement Disputes may be raised anytime after Initial Settlement (for energy or capacity)
 - Must have filed a Settlement Query first
 - Goes to the Dispute Resolution Board (DRB)
 - Detailed procedures for Disputes in Section 2
 - Timelines for resolution can be much longer than one month
 - SMP can be reopened, resettlement essentially determined by the DRB



New: Daily Delivery of Data to Participants I

- T&SC said weekly delivery of data
- Daily process because
 - Requested by suppliers
 - Can be used to update required credit cover rather than forecasts
 - More common in implementation solutions
 - Facilitates steady business processes
- Knock on effect on Data Query, Resettlement



New: Daily Delivery of Data to Participants II

- One working day after Trading Day, the MDPs send daily “indicative” data to the market operator
 - Polled market participant generation
 - Aggregated polled and estimated demand, aggregated non-market generation
 - Indicative settlement run



New: Daily Delivery of Data to Participants III

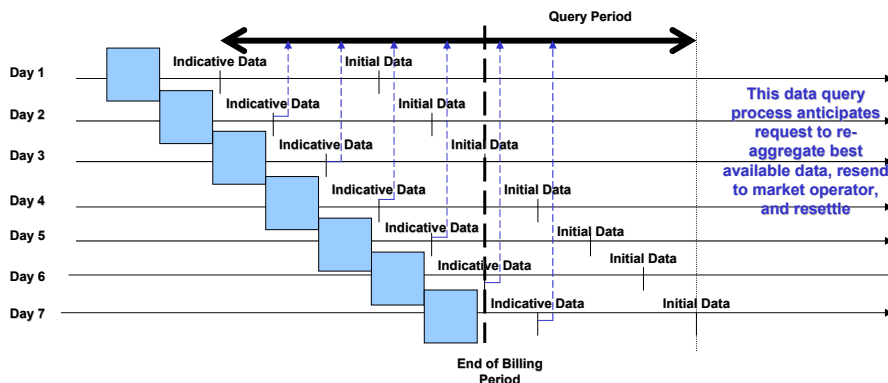
- Four working days after Trading Day, the MDPs resend daily “initial” data to market operator and participants
 - Automatically updated with most up-to-date information, whether a query was sent in or not
- Each day for “initial” data, Market Operator settles that data
 - Bill created at end of billing period from aggregate of previous data

Querying Data

- Following process refers to Data Queries of daily market data to the Market Operator only
 - Settlement Queries and Settlement Disputes will remain unchanged
- Queries for non-market data subject to the rules in the agreements between meter operators, usually referenced to Metering Code and Grid Code

Data Queries Daily Option 1

- On a Trading Day Basis, TD+1WD→BP+4WD



Under Option 1

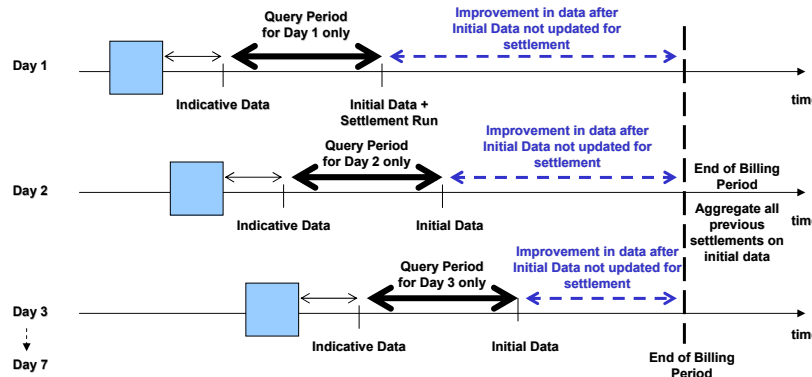
- With daily file send, after Initial Data, Market Operator will not expect any more data for that Trading Day
 - Weekly settlement will be an aggregation of the daily initial settlements
- Supplier could continually query Day1 data just to see if improvement from Day1 initial data to BP+4WD occurred
 - Existing data is re-examined and all data is resent
 - Must be resolved within 10 days (best endeavour 4 days)
 - Forces a resettlement if material improvement discovered
 - Even without resettlement there's a continual extra MRSO overhead
 - Continual MO overhead to see if changes are material

Basic Data Queries Materiality Analysis

- What is Material difference for Monday
 - Initial Data has c. 98.5% QH meter reads
 - BP+ 4WD data will have 99.9% of QH meter reads
 - At 50% accurate estimation, leads to 0.75% error for Initial Data, 0.05% for BP+4WD meter reads
- Is a 0.7% of volume improvement material for suppliers?
 - Non-pollable NQH meters will have negligible improvement over this period
- Is Option 2 acceptable?

Proposed Data Queries Daily Option 2

- On a Trading Day Basis, TD+1WD→4WD



Data Queries Materiality Analysis

- By end of settlement week, not all days will have reached 99.9% of meter reads
 - e.g. last day will remain at 98.5% meter reads
 - Therefore, estimate worst-case scenario loss in accuracy of settled volumes at 0.5%
- Note that non-pollable meters (NQH, non-half hourly) will have negligible improvement over this period
 - Where a supplier has a large volume of NQH meters, this error will be hidden in that 0.5% due to errors in estimates and profiles



Proposal 4 + Rationale

- Is Data Query Option 2 acceptable?
 - Trying to avoid the scenario where data queries raised as a matter of course rather than exception
- Comments welcome on Proposal 4



Question 5

- Resettlement is currently at 4 months and 13 months
 - Determined from discussion in the RRG
 - The estimation in QH does not get “picked up” until 4 months later
- Interested in discussing resettlement timeframes in light of:
 - Proposal 4 (preferred option)
 - Monthly retail market in Northern Ireland
- In light of new discussion on daily data send and retail market in Northern Ireland, is there appetite to change the resettlement timelines?



Thank You

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