

DS3 System Services Industry Workshop

Dundalk

14th October, 2013

Agenda

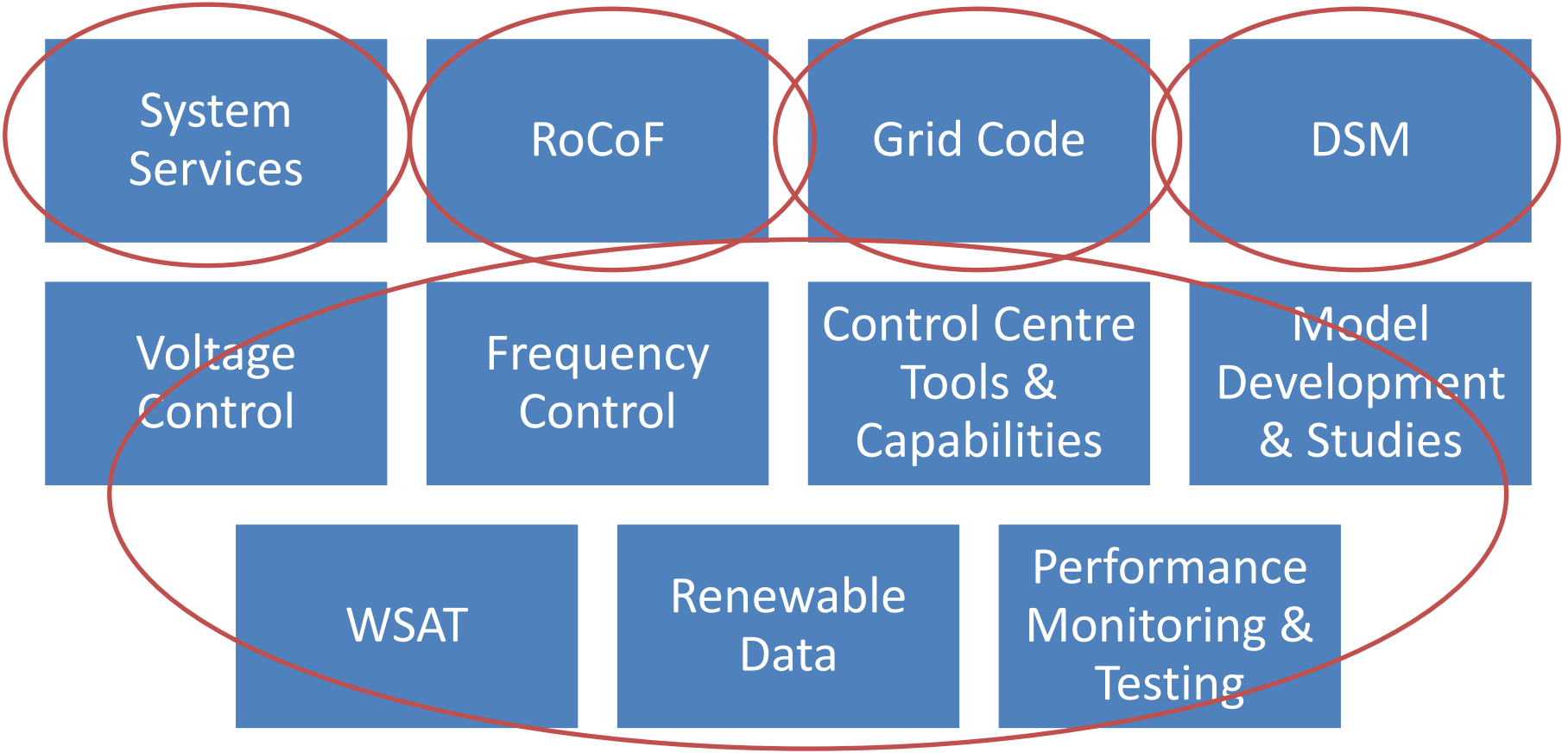
10.30	Introduction
10.35-11.00	Service Definitions <ul style="list-style-type: none">• RA Overview• Open Discussion
11.00-11.10	Electricity Association of Ireland Presentation
11.10 – 11.50	Economic Analysis <ul style="list-style-type: none">• RA Overview• Questions for Industry• Open Discussion
11.50 – 12.00	Wrap up and Conclusion

Purpose of Today's Workshop

- **Service Definitions**
 - Gain a greater understanding of industry's views
 - Hold an open discussion on the definitions of the services
- **Economic Analysis**
 - Provide Industry with an indication of the SEMC approach
 - Opportunity to hear industry's views on the next steps

System Services & the Wider DS3 Programme

DS3 Programme



Impact on DS3 Timelines

- The further modelling work to be carried out by TSOs as required by SEMC is likely to impact the delivery of other DS3 work streams
- TSOs will publish a revised DS3 Project Plan later this year.

SEMC Consultation Paper

Published 3rd September, 2013

SEM-13-060

SEMC Position

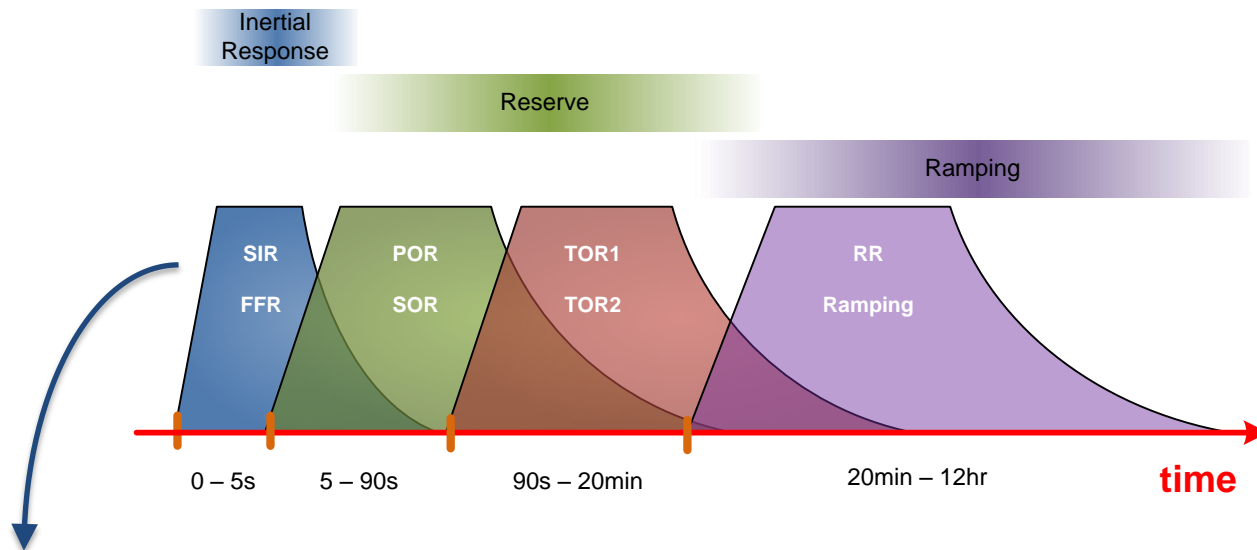
- SEMC supports the need for system services and it should proceed without unnecessary delay
- SEMC acknowledges the considerable effort of the TSOs in preparing the Recommendations
- SEMC is minded to approve the technical aspects of the Recommendations
- Further analysis on the economic and commercial aspects required

Responses

- Strong support for DS3 generally, and System Services in particular
- Broadly supportive of services proposed; some issues raised regarding range of available OEMs; flexibility in the definitions; new technology
- Concern expressed regarding timelines for implementation of DS3; particularly the impact of a phased approach
- View that RMI project and DS3 should progress separately – interactions should be managed
- Other issues regarding commercial aspects raised

New Services		Existing Services	
SIR	Synchronous Inertial Response	SRP	Steady-state reactive power
FFR	Fast Frequency Response	POR	Primary Operating Reserve
DRR	Dynamic Reactive Response	SOR	Secondary Operating Reserve
RM1	Ramping Margin 1 Hour	TOR1	Tertiary Operating Reserve 1
RM3	Ramping Margin 3 Hour	TOR2	Tertiary Operating Reserve 2
RM8	Ramping Margin 8 Hour	RRD	Replacement Reserve (De-Synchronised)
FPFAPR	Fast Post-Fault Active Power Recovery	RRS	Replacement Reserve (Synchronised)

Frequency Control



- Synchronous Inertial Response
- Fast Frequency Response
- Fast Post-Fault Active Power Recovery

Synchronous Inertial Response

- New service
- Aims to increase inertia on the system
- Some concerns raised by respondents
 - No value to response under 2 seconds for non-synchronised units
 - Incentivise flexibility
 - Remove 15s & 45s threshold

Open Discussion on this service

Fast Frequency Response

- New service
- Provides a faster response than POR, works in conjunction with SIR
- Some concerns raised by respondents
 - A response under 2 seconds should be incentivised
 - Sustainable response should be incentivised
 - Current definition may not provide most value to system
 - More flexibility in the definition

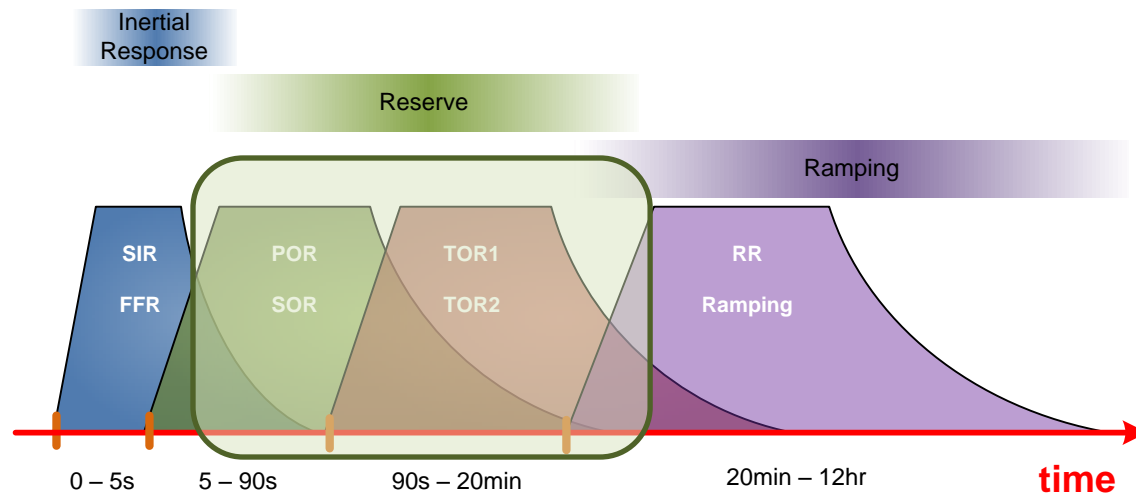
Open Discussion on this service

Fast Post-Fault Active Power Recovery

- New service
- Mitigates the impact of voltage disturbances on system frequency
- Respondents generally supportive

Open Discussion on this service

Frequency Control

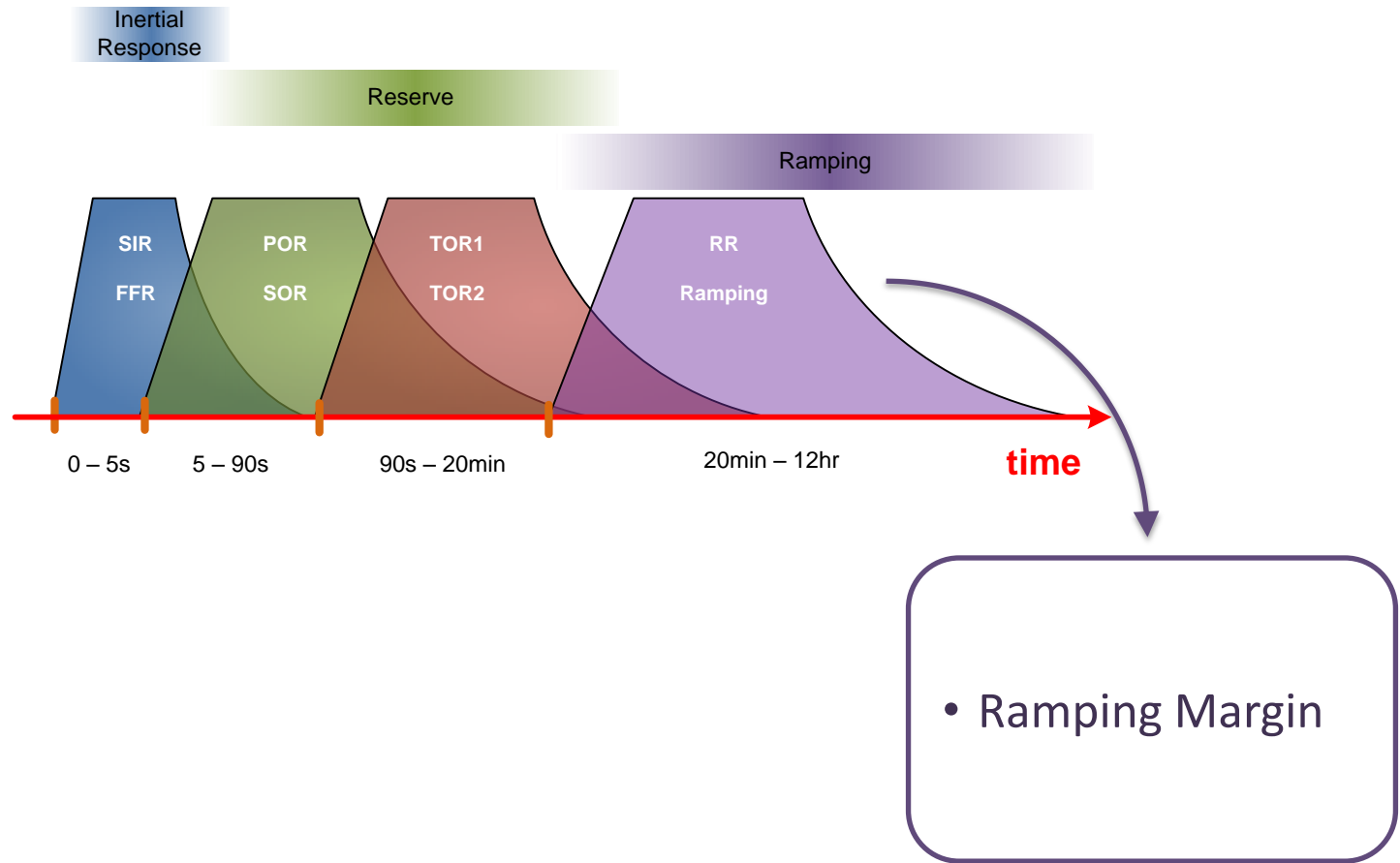


Operating Reserve (POR/SOR/TOR)

- Existing services
- No changes proposed to existing reserve services
- Respondents generally supportive

Open Discussion on these services

Frequency Control



Ramping Margin

- New services
- Some requests for clarification
- Ramp-down service?
- Greater flexibility; TOD

Replacement Reserve

- Modified Existing Service
- Respondents generally supportive

RM Service	Ramp-up Requirement	Output Duration
RM1	1 hour	2 hours
RM3	3 hours	5 hours
RM8	8 hours	8 hours

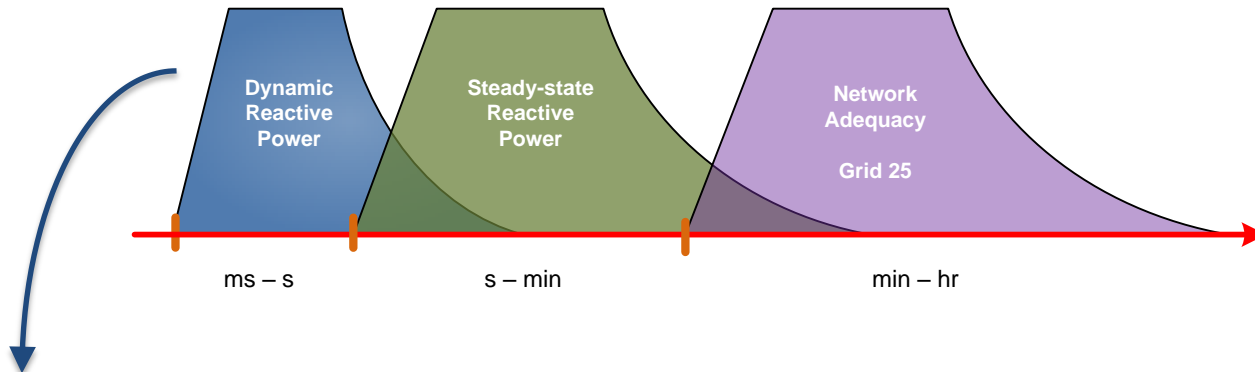
Open Discussion on these services

Voltage Control

Transient Voltage Response

Voltage Regulation

Network



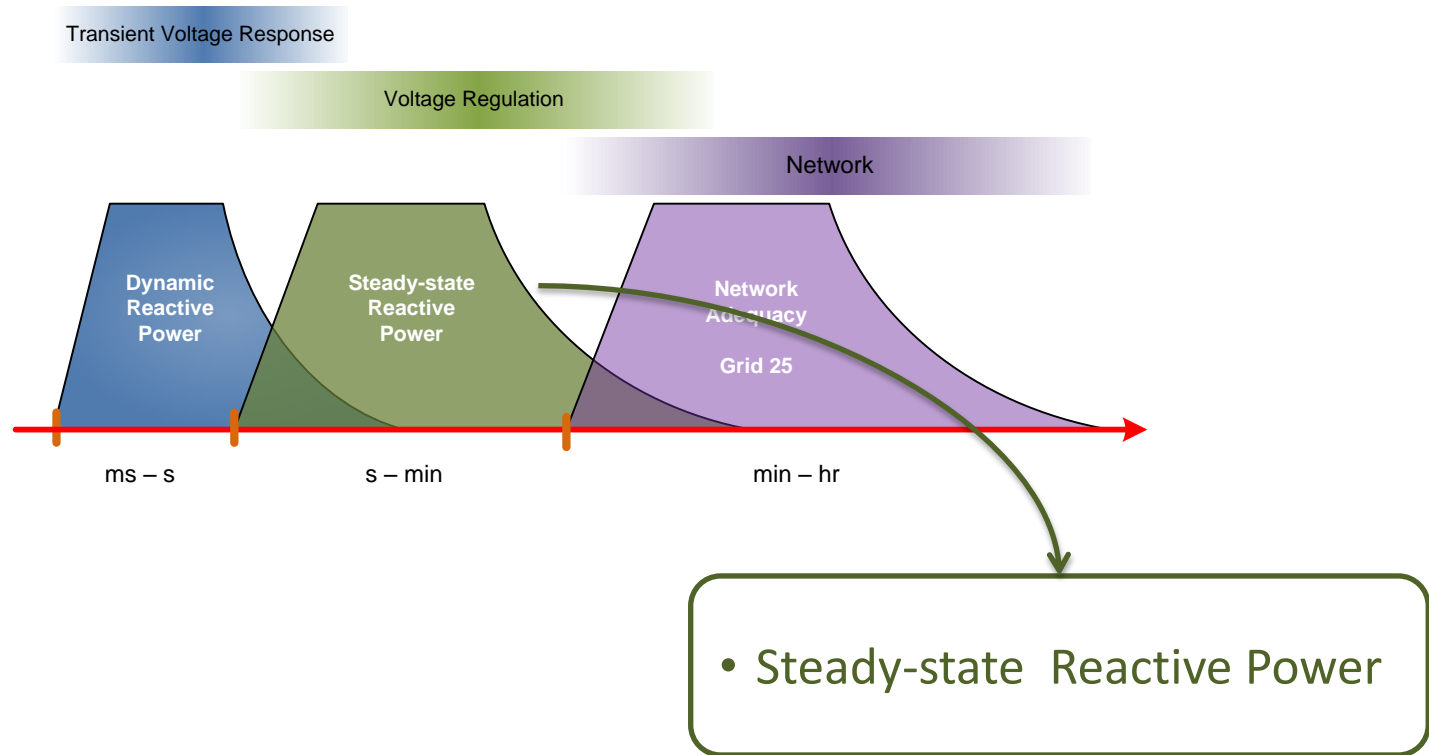
- Dynamic Reactive Response

Dynamic Reactive Response

- New service
- Provides reactive current in the event of voltage dips
- Respondents generally supportive

Open Discussion on this service

Voltage Control



Steady State Reactive Power

- Modified existing service
- Provision of reactive power from the widest possible active power range is incentivised
- Some concerns raised by respondents
 - P_{\max} not applicable to all technology
 - Distribution generators
 - Locational element

Open Discussion on this service

Next Steps

- Detailed review of responses and today's discussion
- Decision paper to be submitted to November SEM Committee
- Publication early December

- Any other questions?



DS3 Workshop

EAI Perspectives

14th October 2013



*A Sustainable Future Powered
by Electricity*

DS3 Programme

- EAI supports the roll out of DS3
 - RoCoF and System Services workstreams are both critical and should be treated and implemented consistently and simultaneously.
 - CBA should consider both workstreams and the delivery of 75% SNSP in the absence of RoCoF
- EAI supportive of work of TSOs to-date
 - Recognise RA work required but this should not delay the implementation of the overall DS3 services and products for 2015
 - 2015 timeline critical for timely delivery of flexible investments and renewable investments
 - Essentially critical to delivery of renewable targets for 2020

RoCoF Implementation

- PPA recognised that further studies are needed before a decision can be made on whether to approve the RoCoF grid code modification
 - OEM resources are constrained
 - Studies will not occur concurrently for generators
 - Detail on how compliance testing will be verified not available – more detail and input from TSOs needed to enable studies
- Studies cannot practically be delivered within proposed 18 month timeframe
 - TSO, OEM and generator collaboration needed to manage programme
 - Not reasonable to impose penalties on generators making reasonable endeavours to assist in delivery of programme

RoCoF Cost

- There is a system wide benefit of delivering RoCoF change – it equates to a 10% SNSP increase
 - It is undue discrimination to levy cost of change only on conventional generators as the benefit will be shared.
 - Levying cost on generators will incentivise derogations as opposed to completion of studies/compliance.

EAI Requests:

1. A collaborative programme to plan and deliver the RoCoF studies
2. Removal of penalties for generators engaged with collaborative programme
3. Socialising of the cost of the RoCoF studies across the market

Implementation of System Services from an Investor Perspective

- CBA needs to consider real counter-factual of DS3 not being delivered
 - Given binding targets, impact of non-delivery of DS3 is the cost of extra capacity needed to deliver 40% target **and** subsequent additional system costs.
- TSOs have recognised that investment is needed to deliver necessary system services
 - Infrastructure does not currently exist to deliver necessary flexibility.
 - Market needs to provide **added** revenues to deliver investment – not simply a transfer from capacity market to enhance ancillary market.
 - Phased implementation of products will not deliver required investment as investors may need suite of products to achieve business case.

Implementation of System Services from an Investor Perspective

- Market arrangements need to incentivise investments across technology types:
 - Dispatch based payments drive uncertain revenue streams and therefore dis-incentivise investment.
 - A minimum contract length of 7 – 15 years needed.
 - A value based approach to pricing products should apply a price floor at Long-Run Cost of service provision.
 - Market needs to be transparent and flexible to give confidence to investors and to provide signals for technology innovation.
 - Market mechanism needs to be stable and not subject to on-going intervention and change.

Economic Analysis: High Level Approach

Agenda

- SEMC View
- Approach to the Analysis
- Next Steps
- Focused Discussion
- Open Discussion

SEMC View

- Notwithstanding the considerable amount of analysis carried out to date by the TSOs the SEMC has reservations regarding the economic rationale and commercial arrangements proposed
- The €355m p.a. valuation of System Services
- Impact of other DS3 deliverables
- Distribution of the Production Cost savings
- Competitive processes for procurement
- Impact on consumer prices

Proposed Approach

Counterfactual

- 60% SNSP, current market design, current connected and contracted wind, GCS generation portfolio
- Compared against various scenarios and sensitivities

Outputs

- SMP
- Production costs
- DBC
- Curtailment levels
- RES output
- System Service volumes

Proposed Approach

- Investment scenarios for achieving SNSP increase
 - System Services
 - Network investment
- Procurement options considered will include:
 - Regulated approach
 - Market approach

Next Steps

- Approach to be decided at October SEMC
- Modelling results expected spring 2014
 - Subject to confirmation with TSOs
 - Detailed modelling approach to be discussed with TSOs following this workshop
- RAs will then prepare proposals for submission to the SEMC

Discussion