

New System Services Ramping Product

Industry Workshop

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31st March 2022



Agenda

- Context of changing power system needs and new challenges
- History of the ramping product
- What is the proposed service and why is it needed?
 - TSOs recommend the introduction of a new ramping service as a Fixed Term contract
- Contractual aspects
- Next steps
- Q&A



Context – Fixed Contracts Process

- Potential new ramping service proposals governed under the Fixed Contract Arrangements process set out in **SEM-21-021**
- Under the process, TSOs assess the need for targeted procurement of services
- The TSOs' assessment should consider:
 - The technical scarcities on the system;
 - The current volume of services, and the sources of that volume;
 - Any localised system needs; and
 - Any other issues the TSOs consider relevant to the assessment

Context – Fixed Contracts Process (cont'd)

- TSOs will submit assessment to the SEMC with a high-level recommendation whether to initiate a Fixed Contract procurement process
- SEMC will review and may issue a Direction to the TSOs to prepare a detailed proposal for this procurement process
- The TSOs will publish the detailed proposal for public consultation
- The TSOs will submit a Recommendation Paper to the SEMC
- The SEMC following its review will then publish a Decision paper setting out the arrangements for that Fixed Contract procurement



Changing power system needs and new challenges

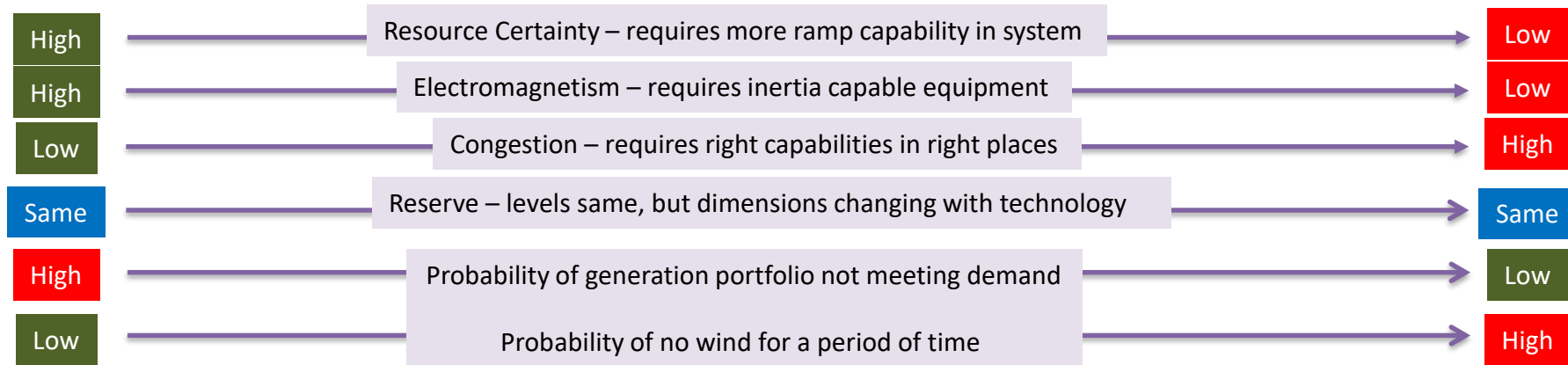


Overarching Vision

- In large scale investments the best outcomes are when those who are best able to manage the risk are responsible for the risk.
- There are 4 risks outside of the control of investors in electricity – **oversupply, constraints, curtailment and TLAFs**
- If the markets do not explicitly deal with these risks, the outcome is a false economy



Challenges to the System over the Decade



2020

2023

2025

2026

2028

2030



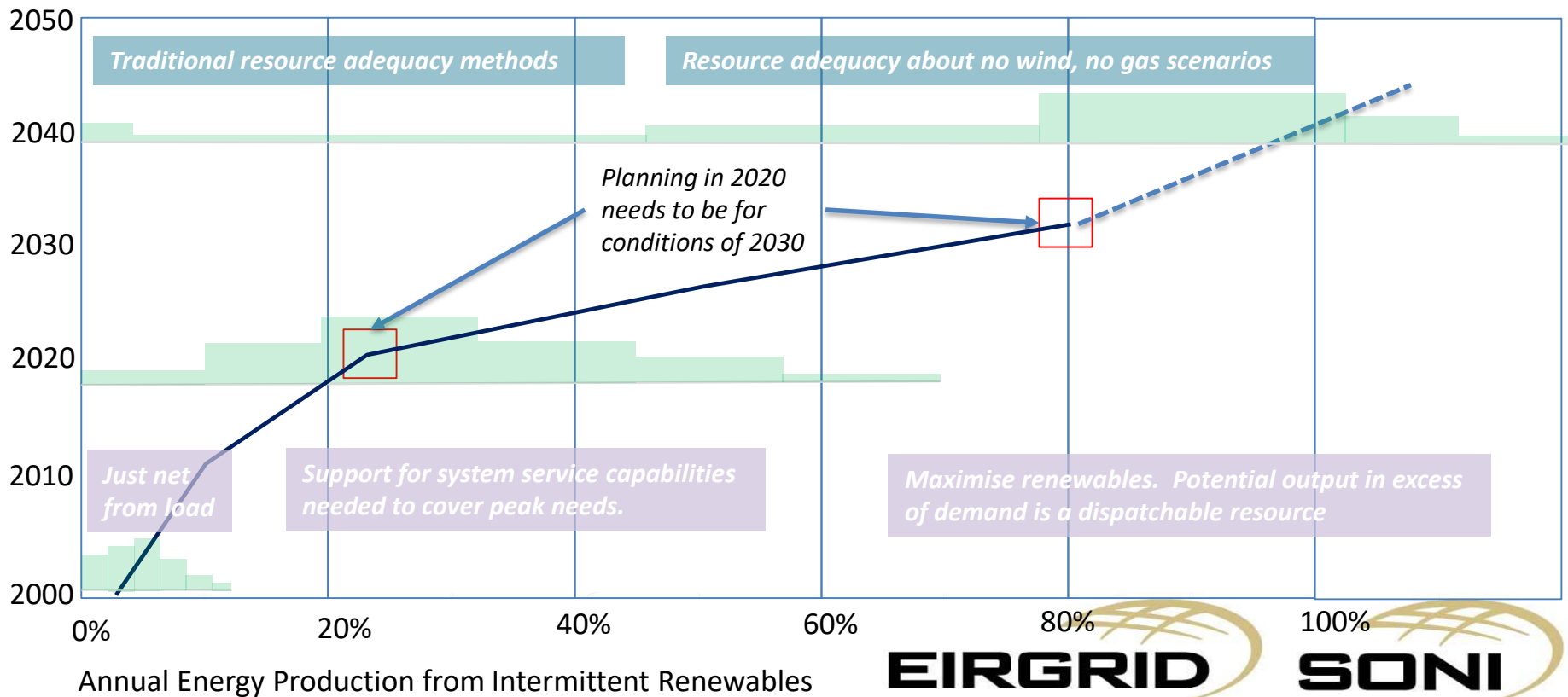
Moving through the Operational Stages

SNSP	Stage1	Stage2	Stage3	Stage4	Stage5	Year
0%	100	0	0	0	0	2000
<50%	90	10	0	0	0	2010
50<75%	60	30	10	0	0	2020
75%<100%	10	50	30	10	0	2030
>100%	5	25	30	30	10	2040

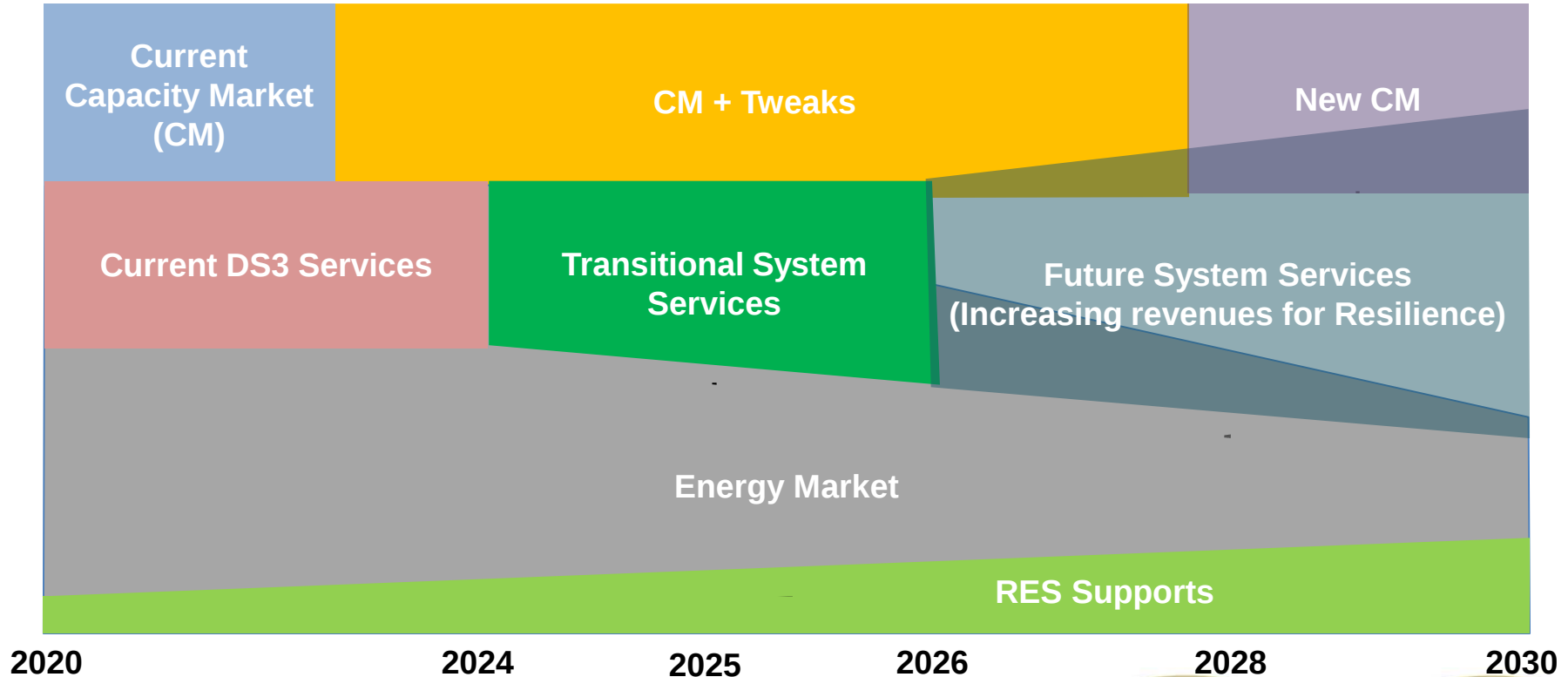
Operating Policy - Volumes

Operating Stage	Reserves	Ramping	Electro-magnetism	Adequacy
Stage 1	500 MW (75% LSI)	None	8 -1000, Sys 20000 MWs	Probability of loss of con plant
Stage 2	500 MW (75% LSI)	None	8 -1000, Sys 20000 MWs	Probability of loss of con plant
Stage 3	500 MW (75% LSI) 200 MW FFR	1-3-8	8 -1000, Sys 20000 MWs	Probability of loss of con plant
Stage 4	500 MW (75% LSI) 200 MW FFR	1-3-8-12	8 -1000, Sys 20000 MWs	No wind
Stage 5	500 MW (75% LSI) 200 MW FFR	12	8 -1000, Sys 20000 MWs	No wind

The Impact of Increased RES-E



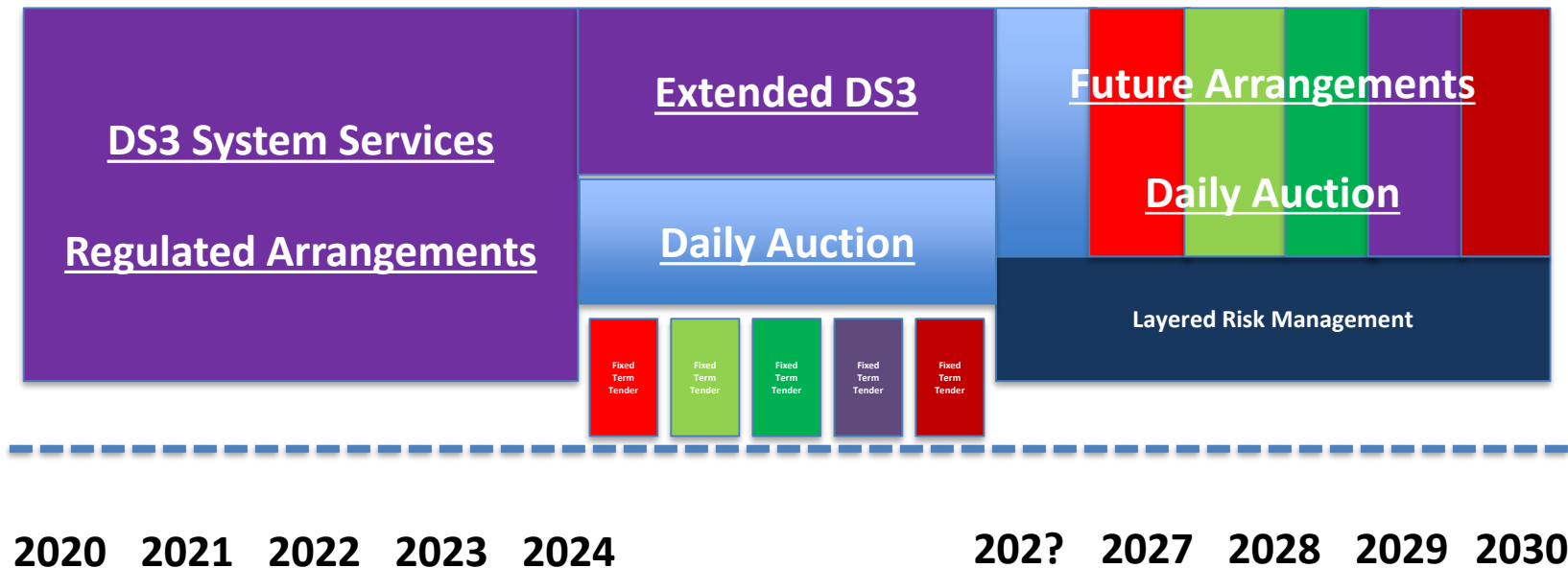
Investment challenges over the decade



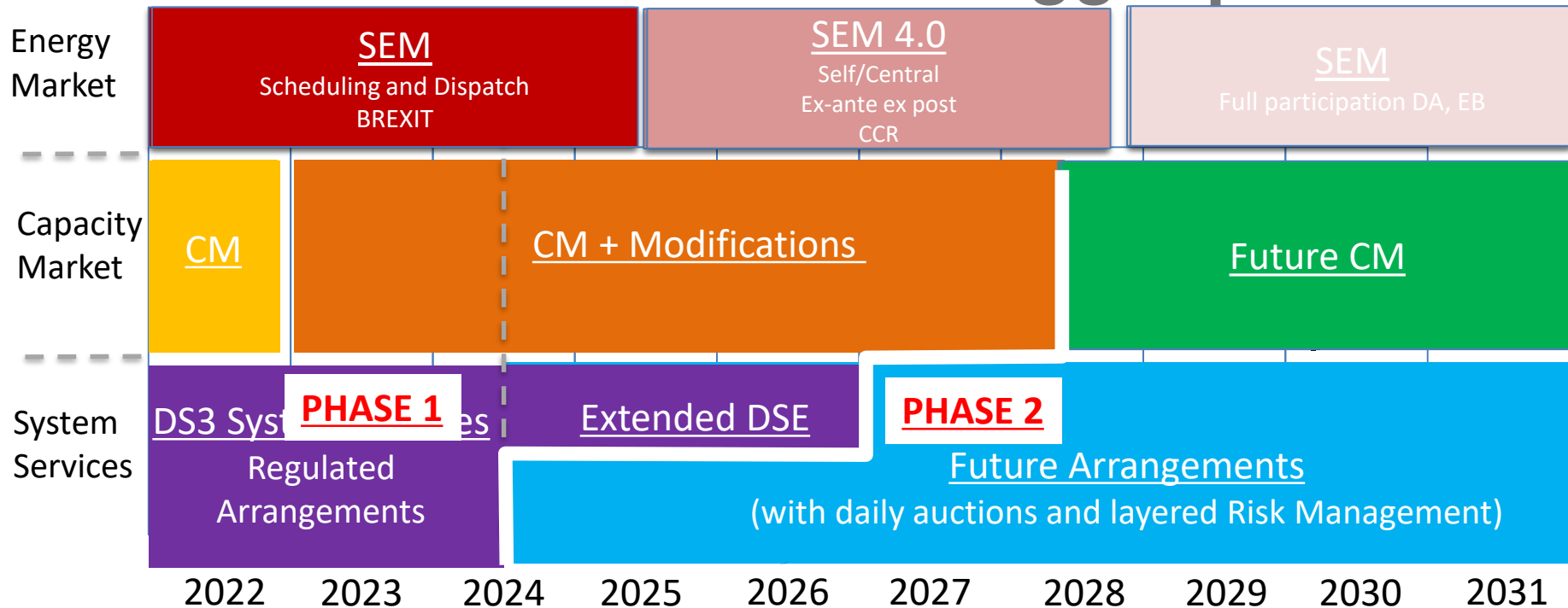
TSO Future Arrangements for System Services (FASS) Recommendation

- Spot market for all system services
- Layered Risk management (CfD) against this spot market
- Market Power/Price Caps set consistently with the value of System Services (€5.8 billion over next decade)
- Arrangements enduring to at least 2040
- Due to progress to date implementation needs to be phased

TSO approach to current difficulties



But need to look at the bigger picture!

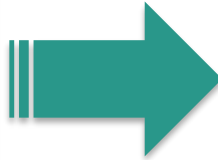


A wide-angle, nighttime aerial photograph of a coastal city. The city is densely packed with lights, reflecting on the water of a large harbor. In the foreground, dark, silty hills with some sparse vegetation lead down towards the city. The sky is a deep blue with some light clouds.

The History of the Ramping Product



Background – Operations and DS3



Detailed Analysis

- 2008 - All Island Grid Study
- 2010 - Facilitation of Renewables
- 2011 - Ensuring a Secure Sustainable System

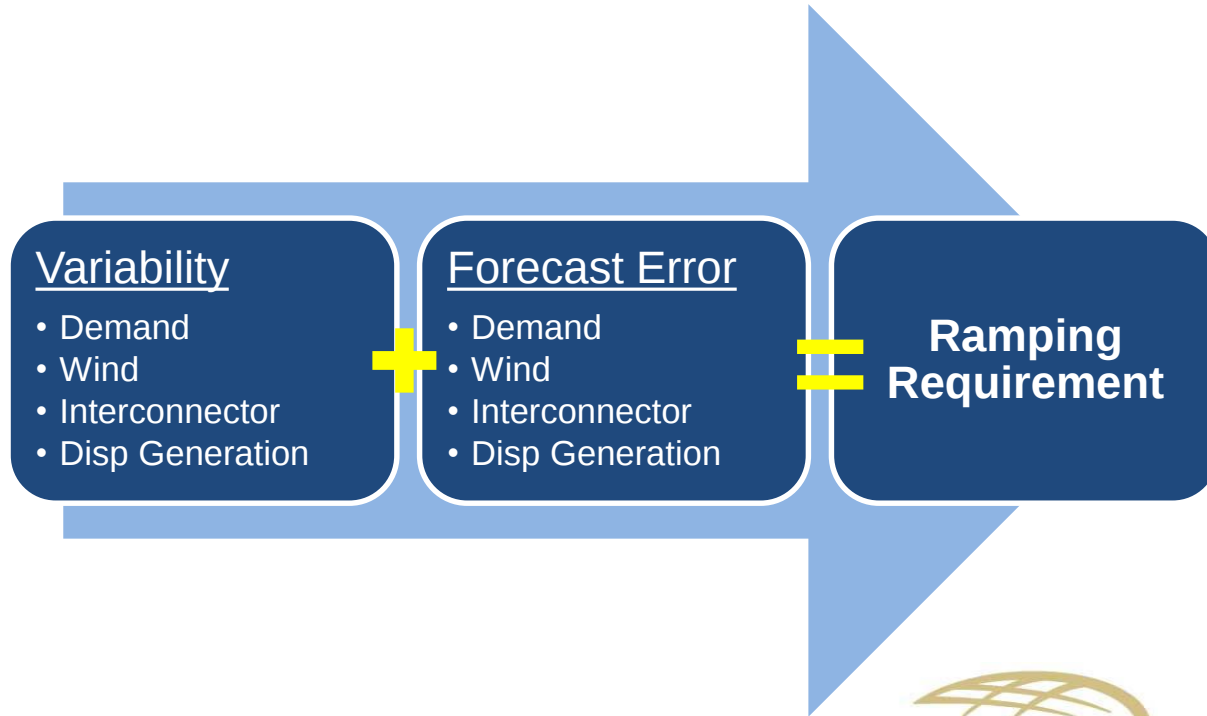
Technical

Delivering a Secure Sustainable System

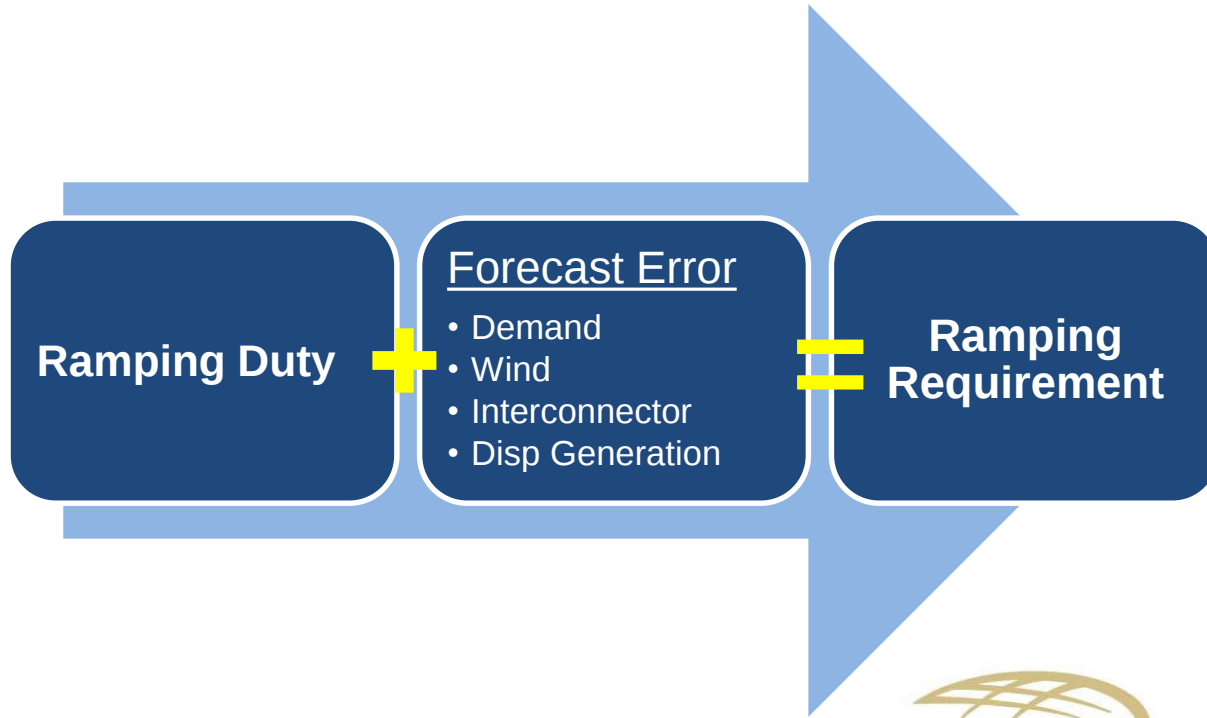
- 2011 – Programme established
- Meeting the RES Policy Objectives efficiently while maintaining system security
- Holistically considering technical, commercial and regulatory needs of the system
- Engaging with all industry stakeholders



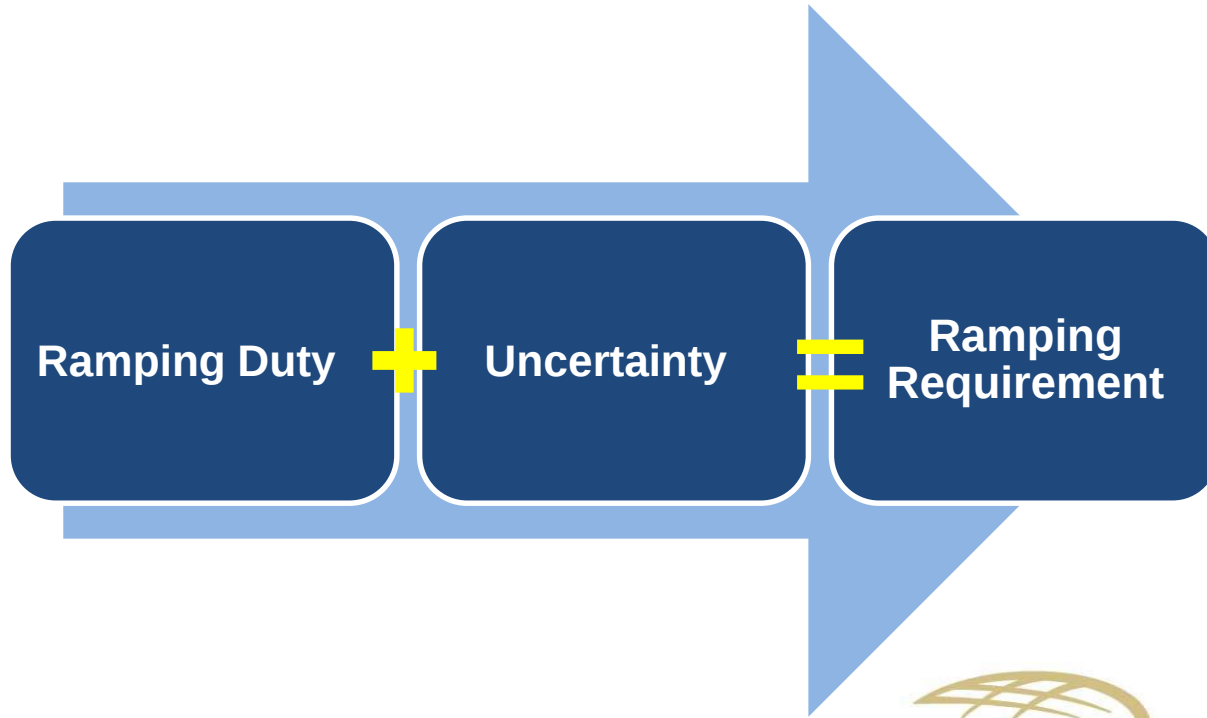
Ramping Concept



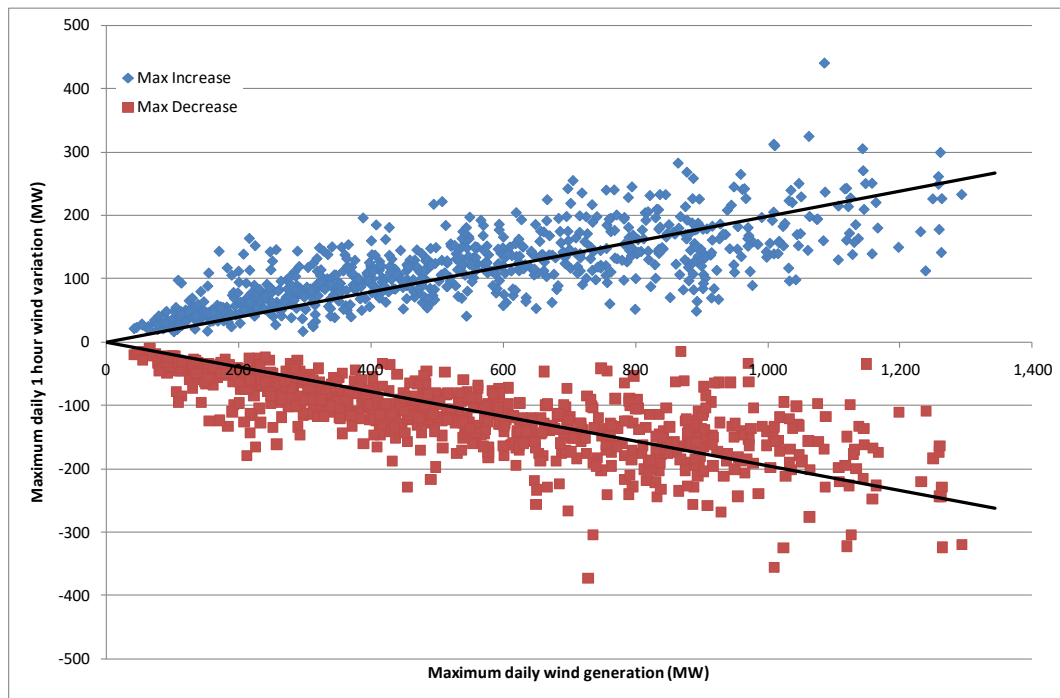
Ramping Concept



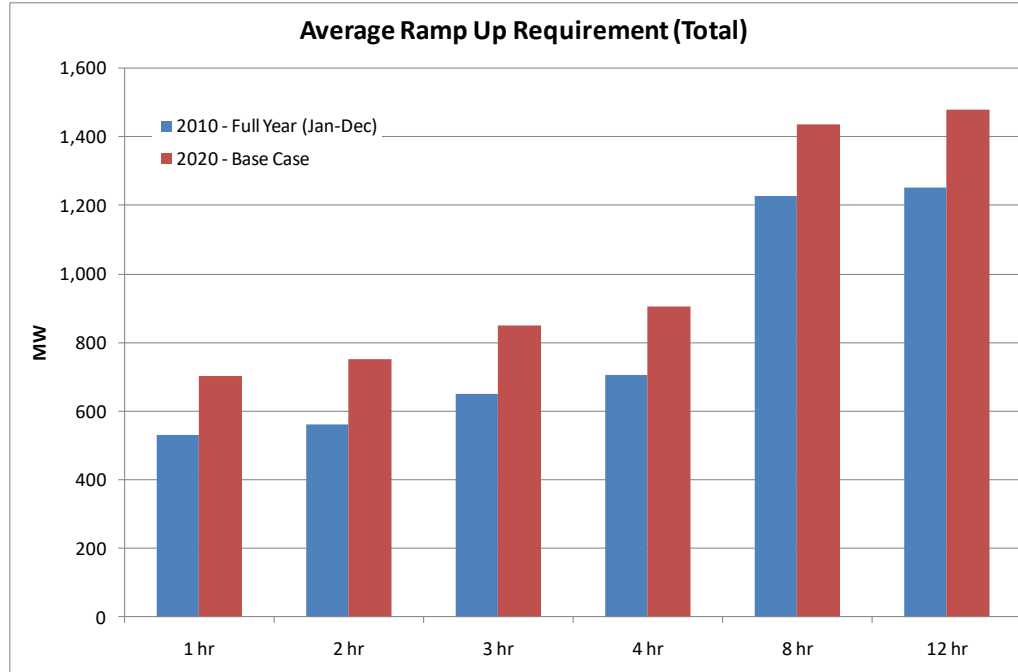
Ramping Concept



Wind Variability (1 hour)



Ramping Requirement

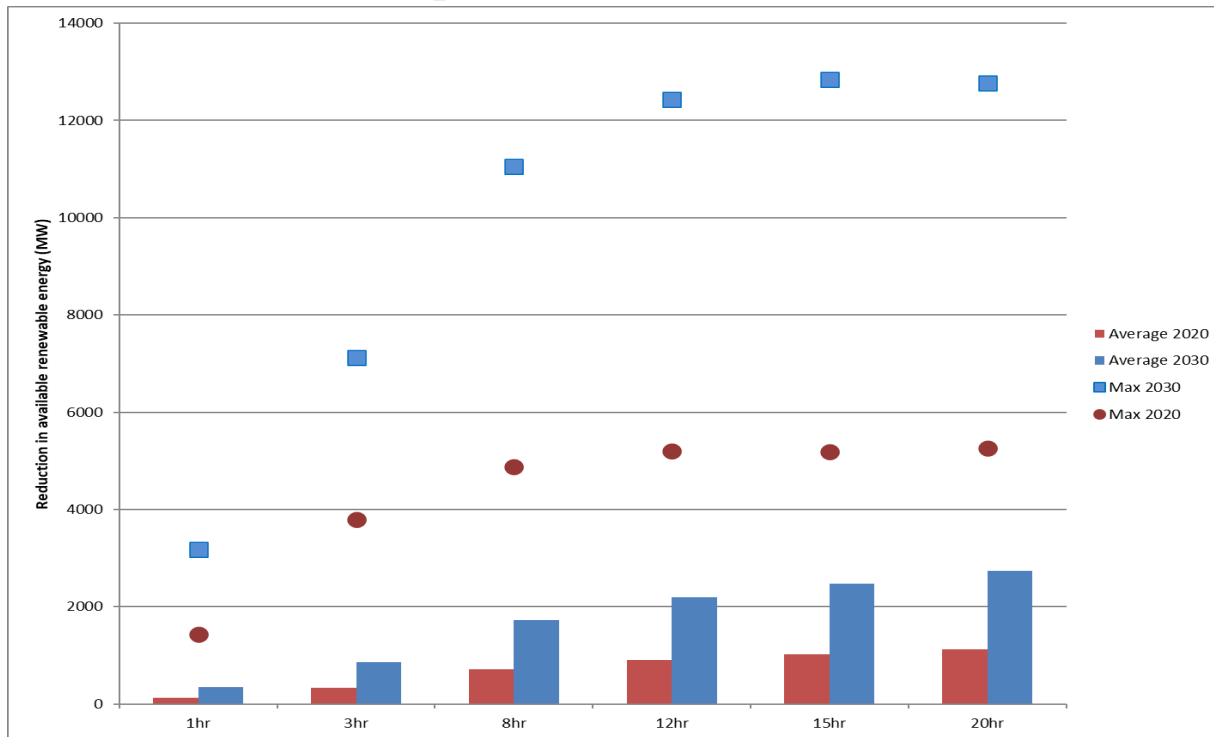


A wide-angle, nighttime aerial photograph of a coastal city. The city is densely packed with lights, reflecting on the water of a large harbor. In the foreground, there are dark, silhouetted hills or mountains. The sky is a deep blue with some light clouds.

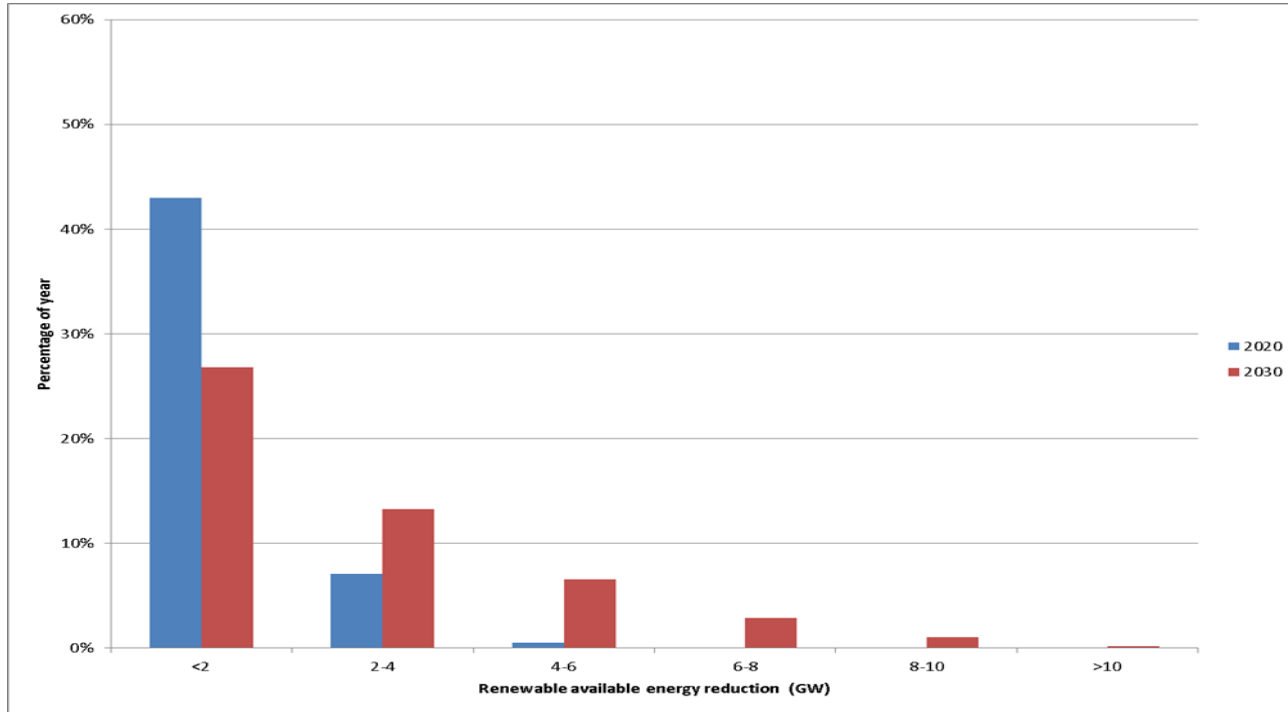
The Need for Ramping in 2030



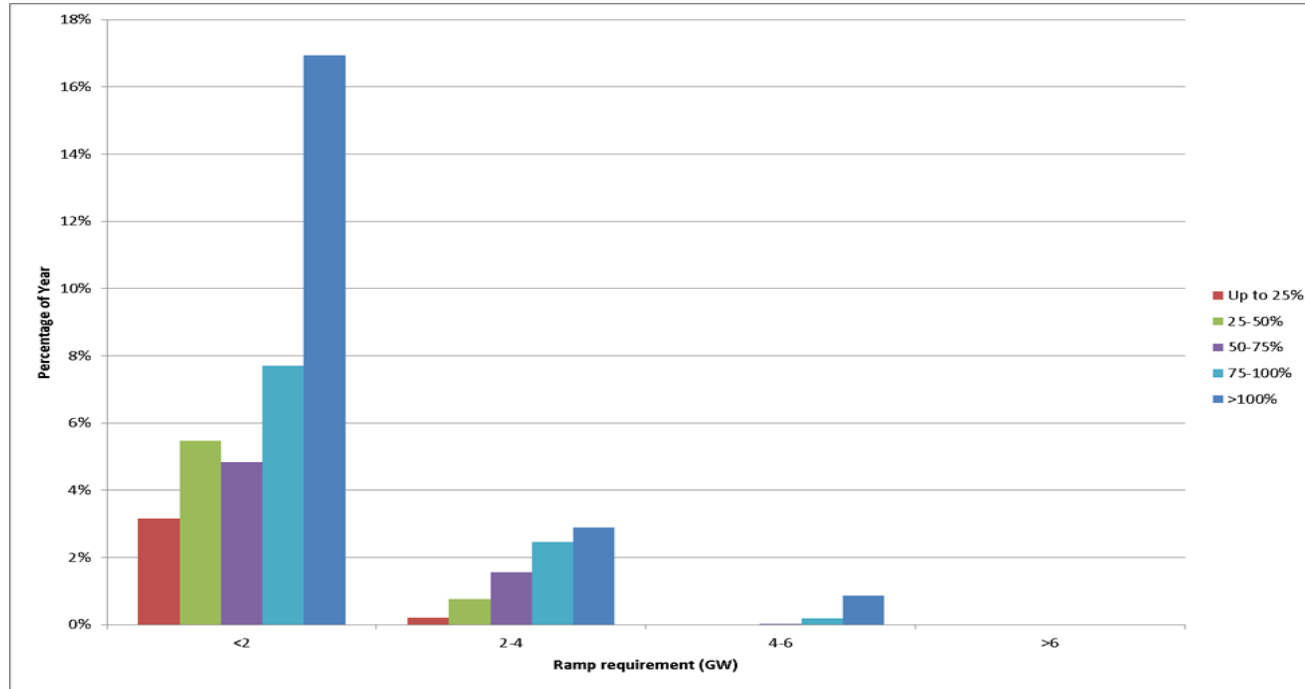
Wind Requirement 2020 2030



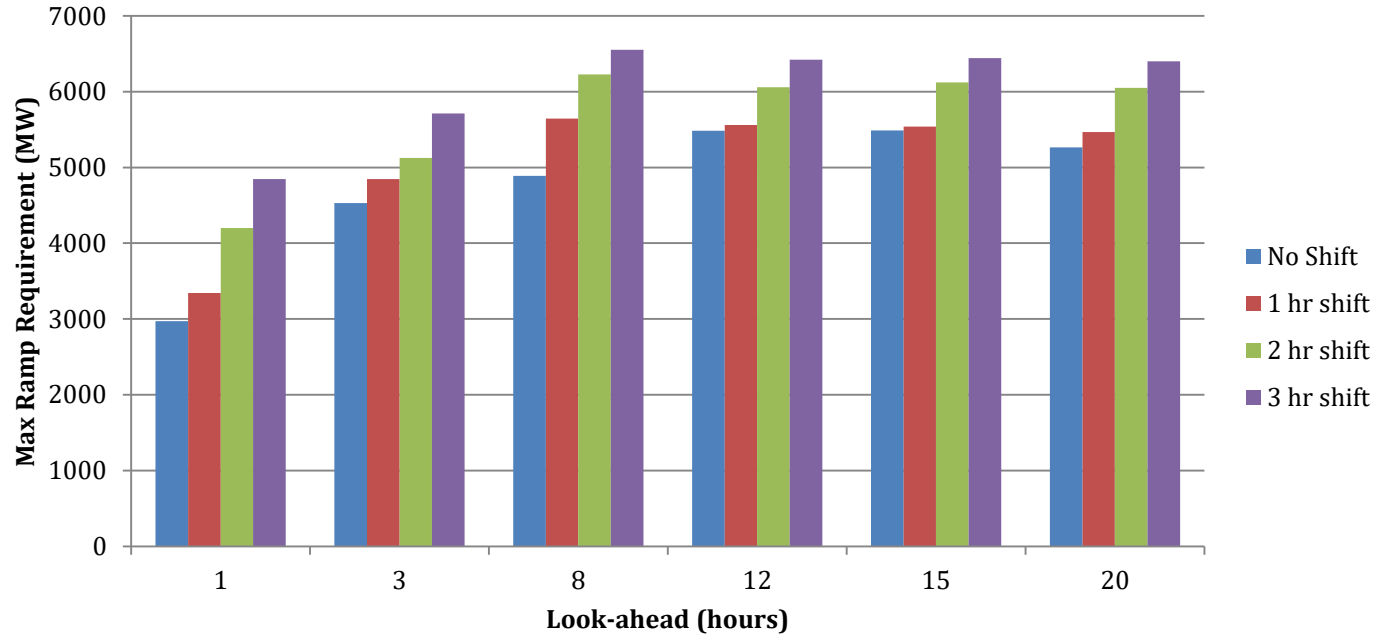
Frequency of Large Wind Requirement Downward Ramp



In which Operational Stages is the risk present?

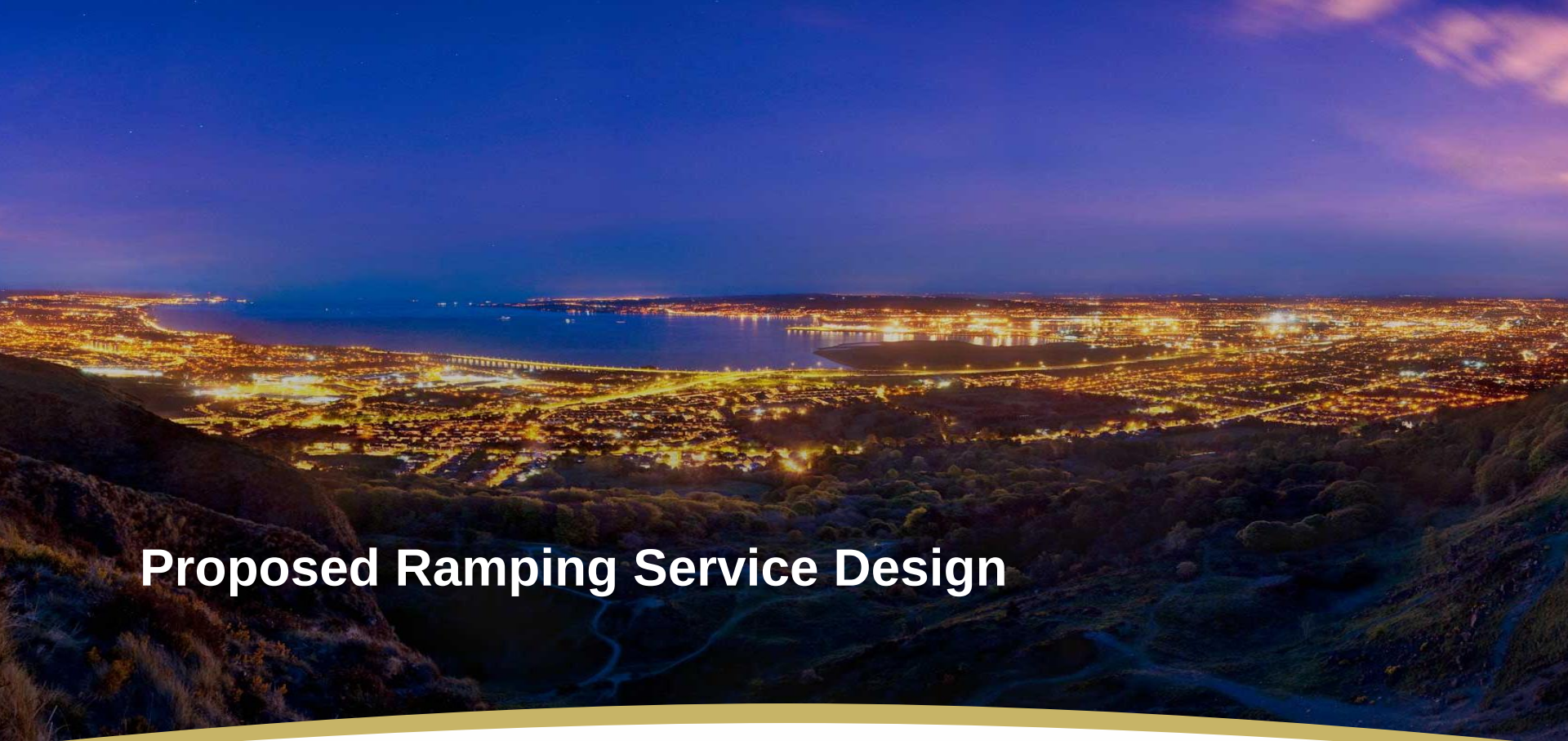


But what about the uncertainty of the Forecast?



So what...?

- There is a demonstrable increased ramp down risk to power system operation for 2030
- There is a need for a longer term ramping product in the order of 12 hour duty, 5 hour horizon and available up to 60% hours of the year
- More analysis needs to be conducted to estimate system risk including demand, solar, interconnectors..

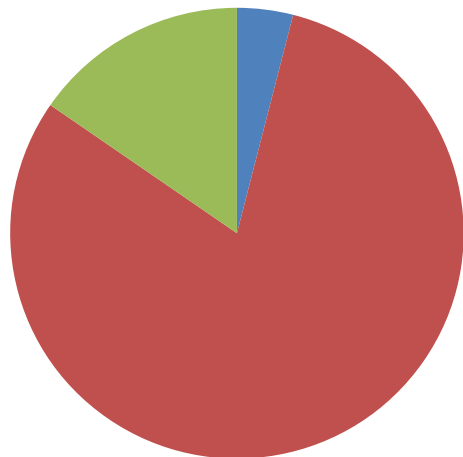
A wide-angle, nighttime aerial photograph of a coastal city. The city lights are reflected in the water of the harbor. The foreground shows dark, silty hills with some sparse vegetation. The sky is a deep blue with some light clouds.

Proposed Ramping Service Design

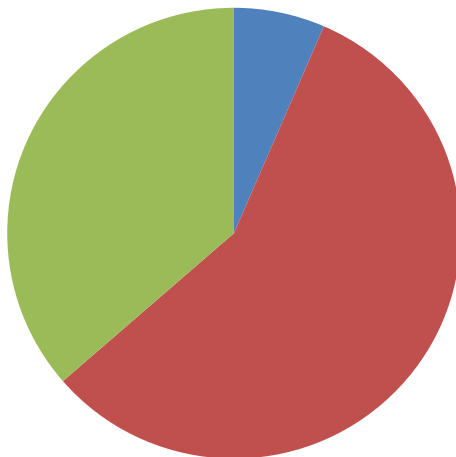


Installed Capacity – 2010, 2020, 2030

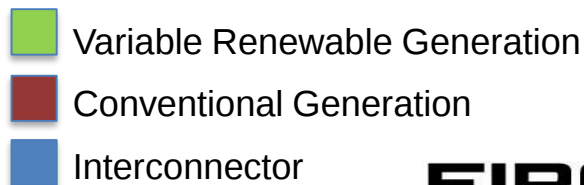
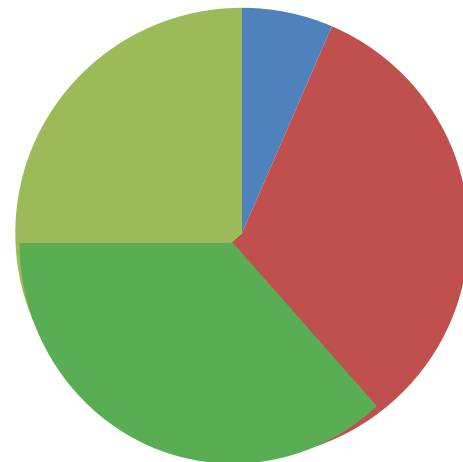
2010



2020



2030



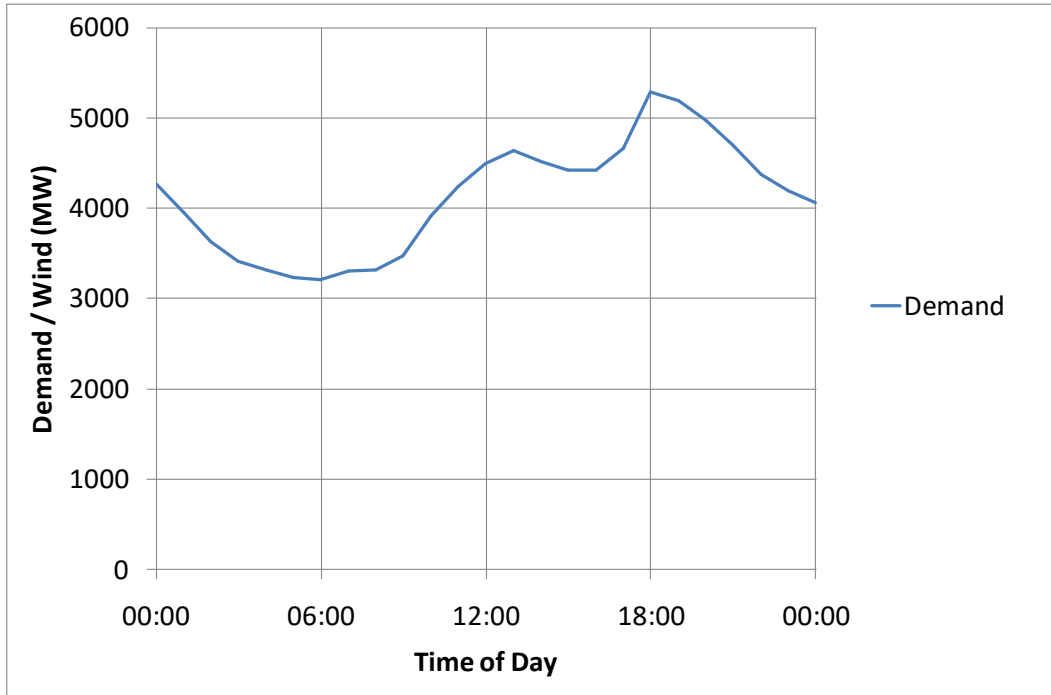
Ramping Margin Product

Product: Margin available with high degree of certainty in [x] hours time and maintained for [y] hours

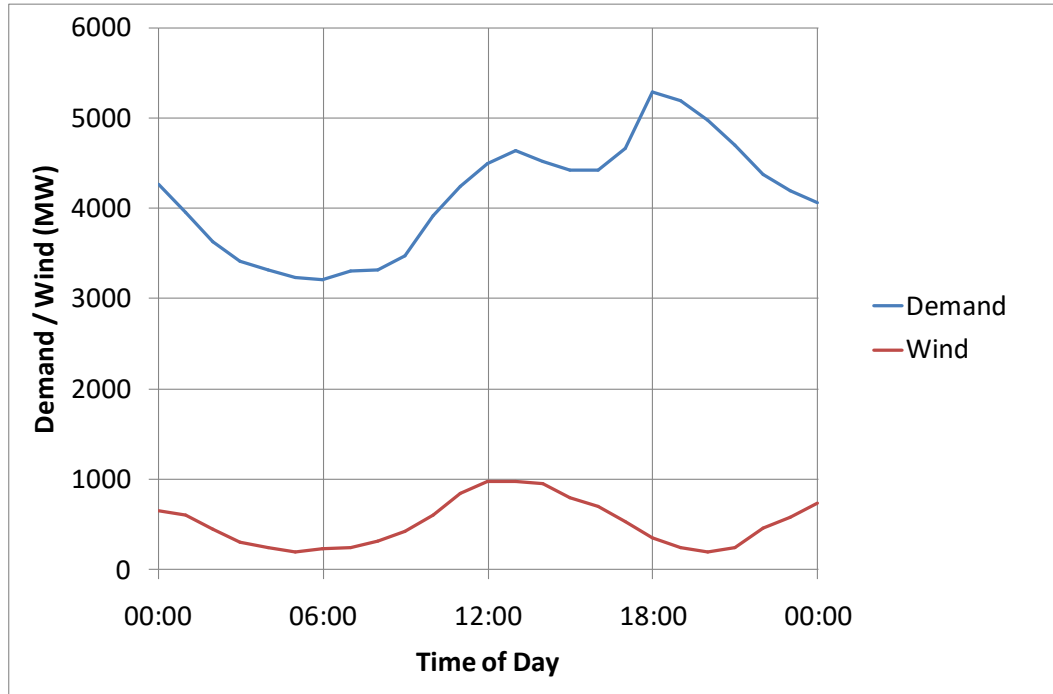
- Three time horizons and durations
 - 1 hour horizon with 2 hour duration
 - 3 hour horizon with 5 hour duration
 - 8 hour horizon with 8 hour duration
- Payment based on
 - Initial Dispatched Output
 - Ramping Capability
 - Availability in Duration Window



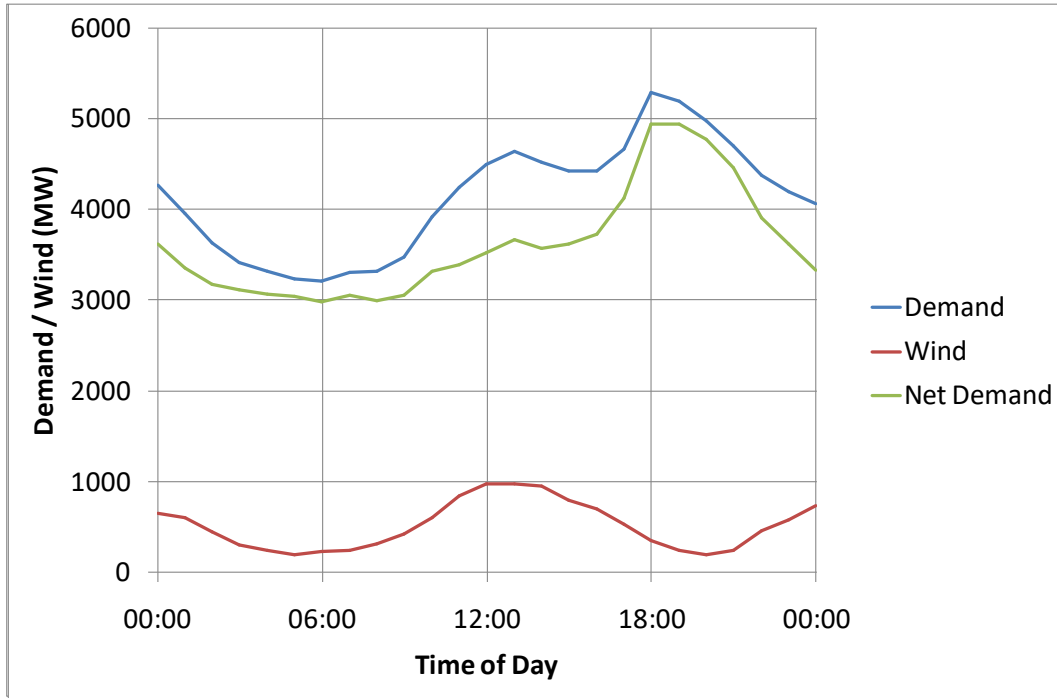
Ramping Concept



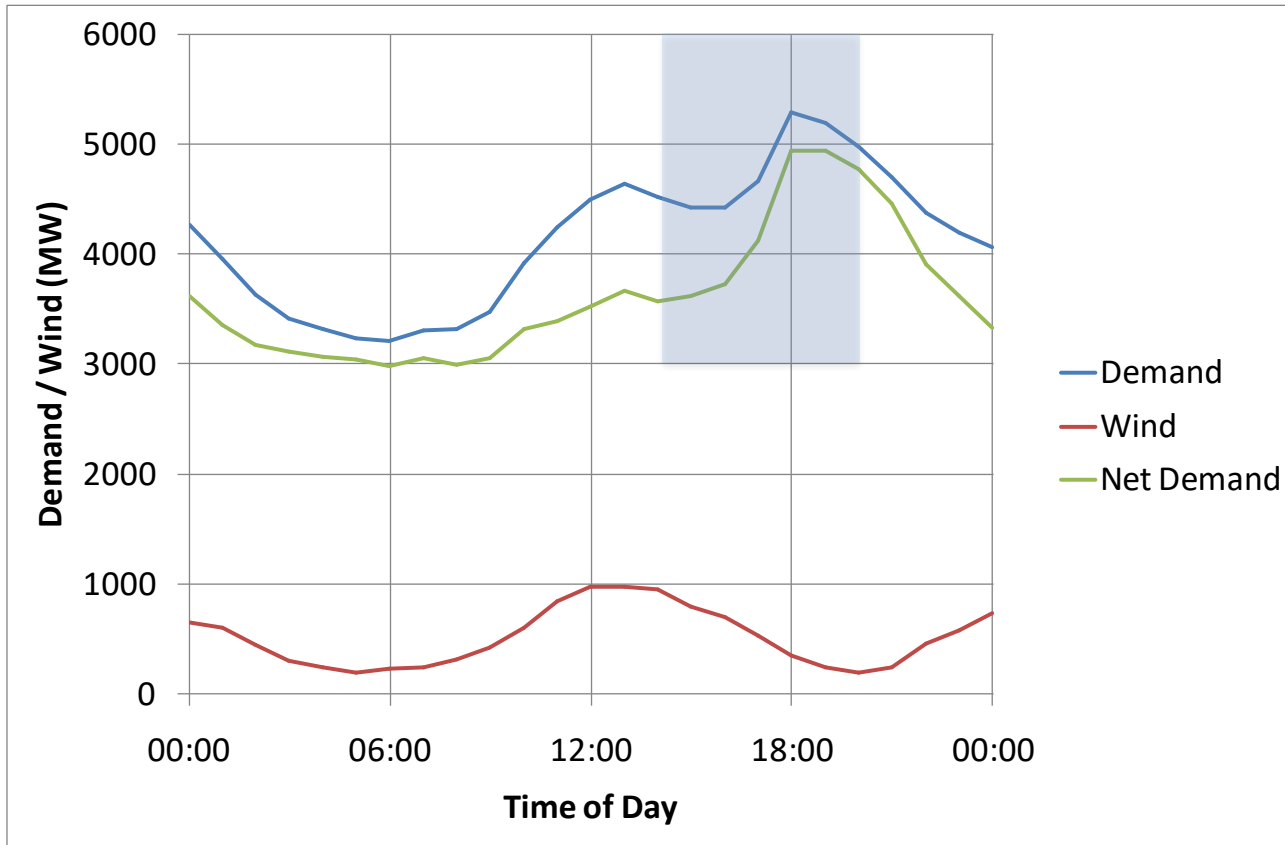
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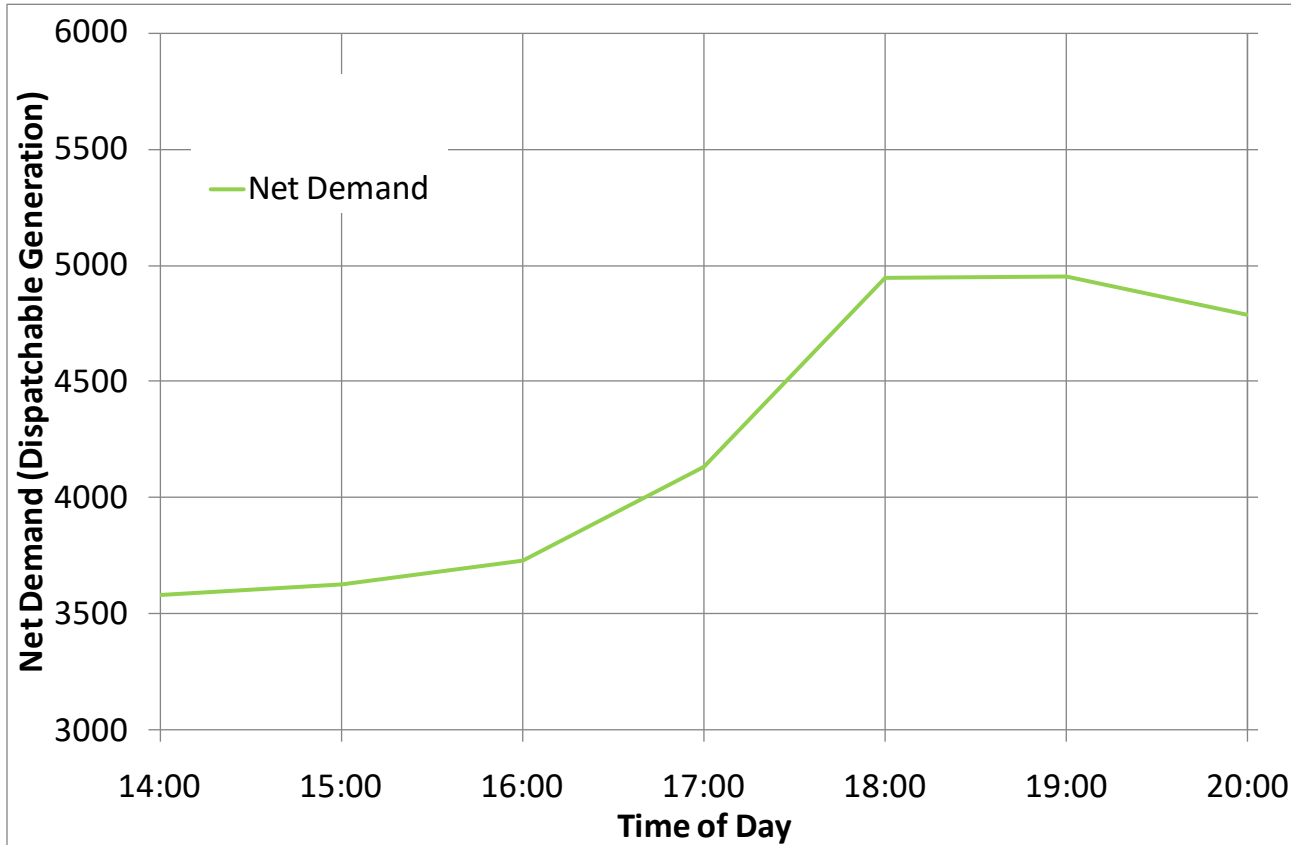
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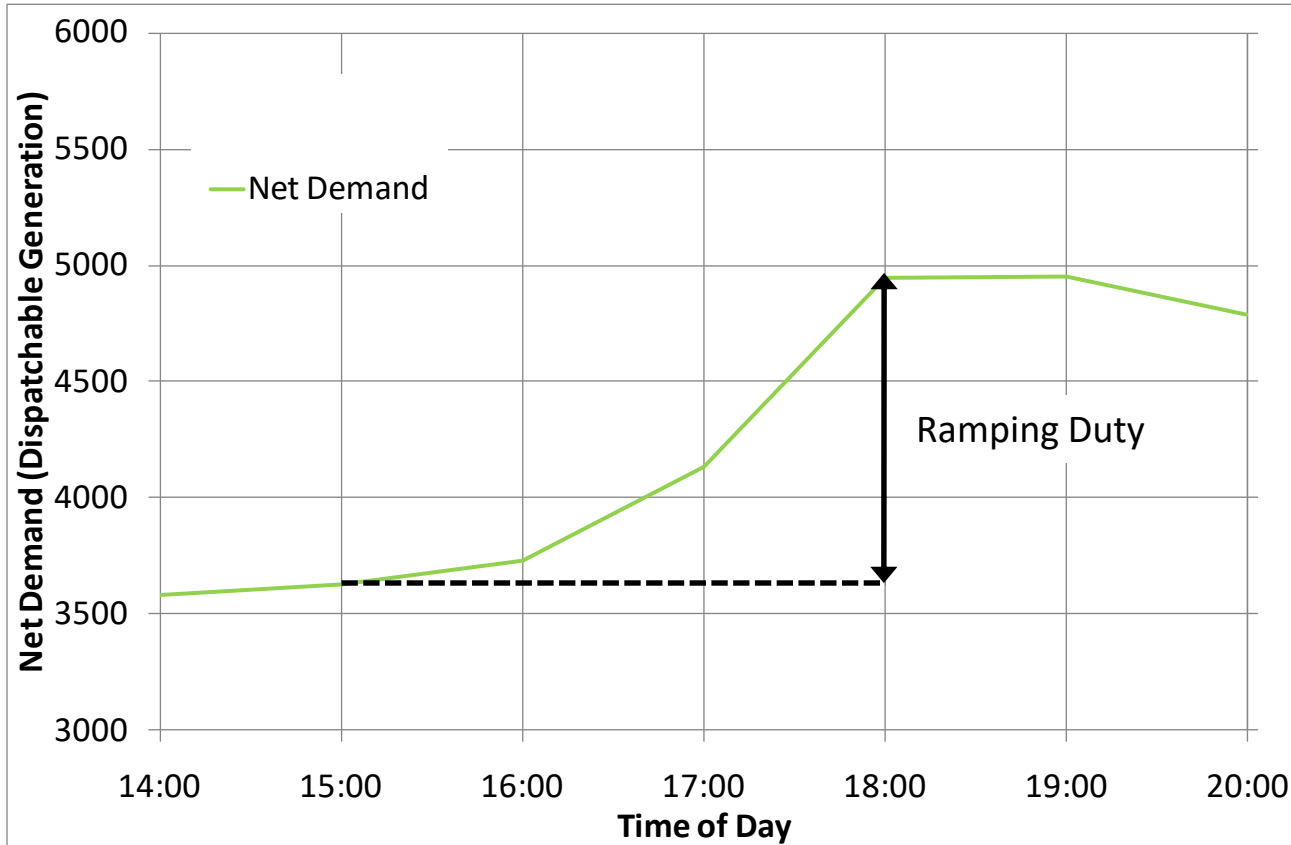
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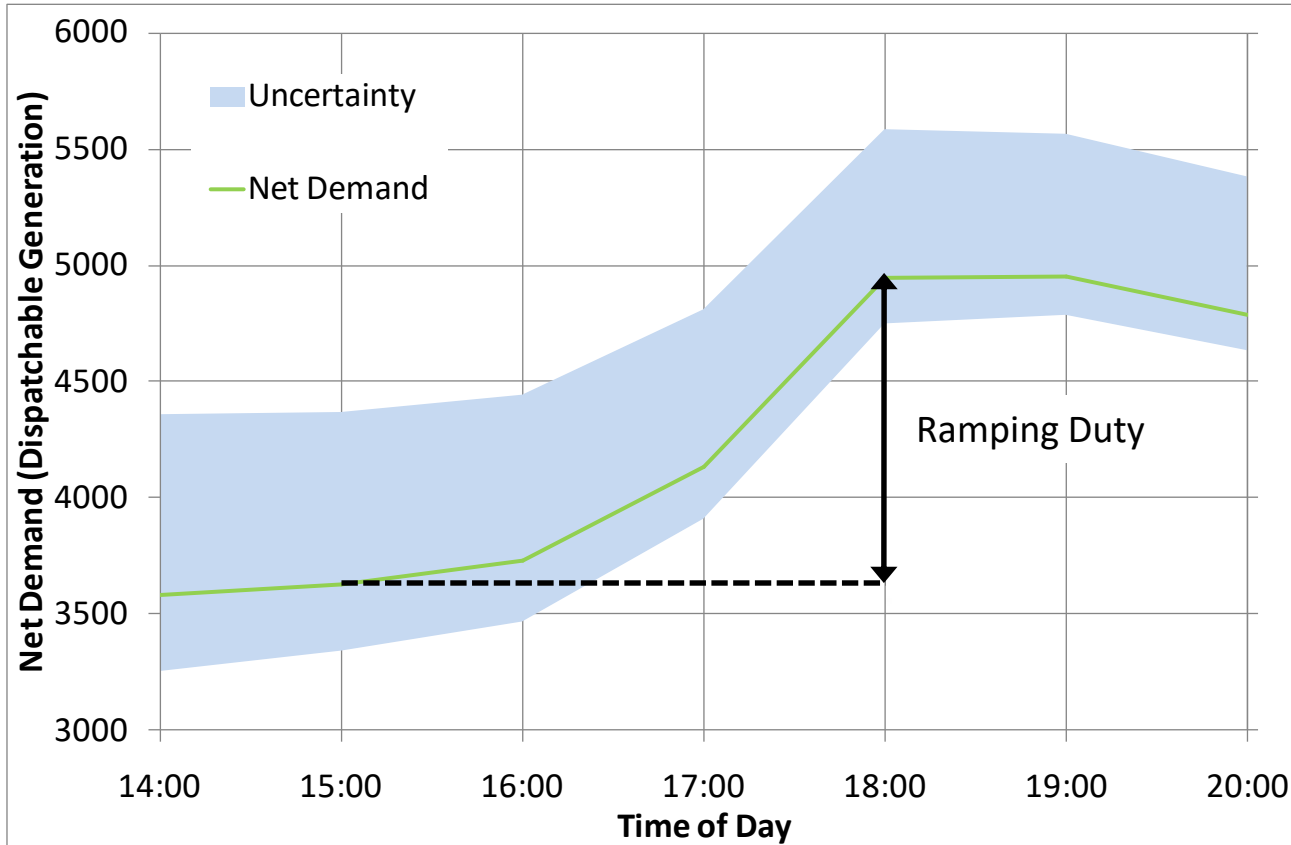
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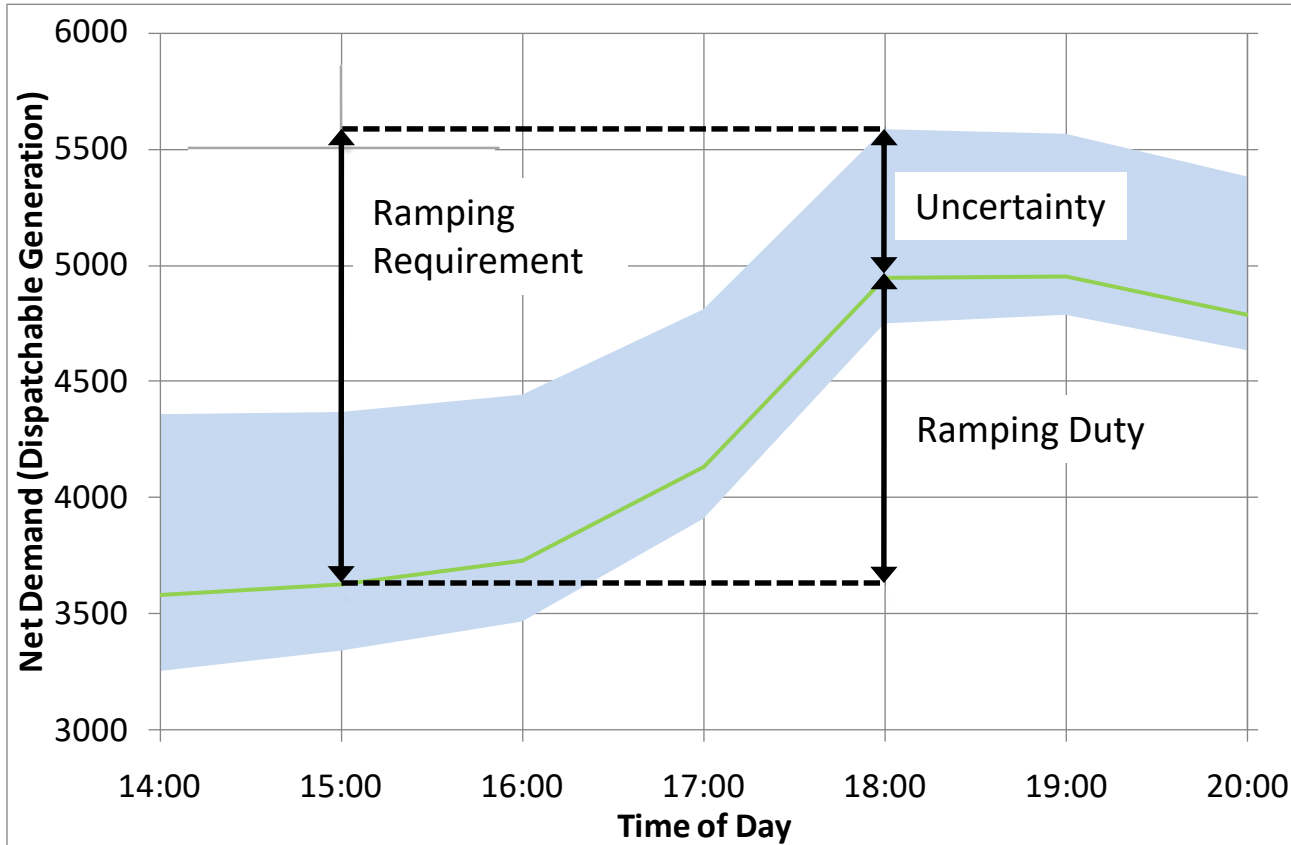
Ramping Concept



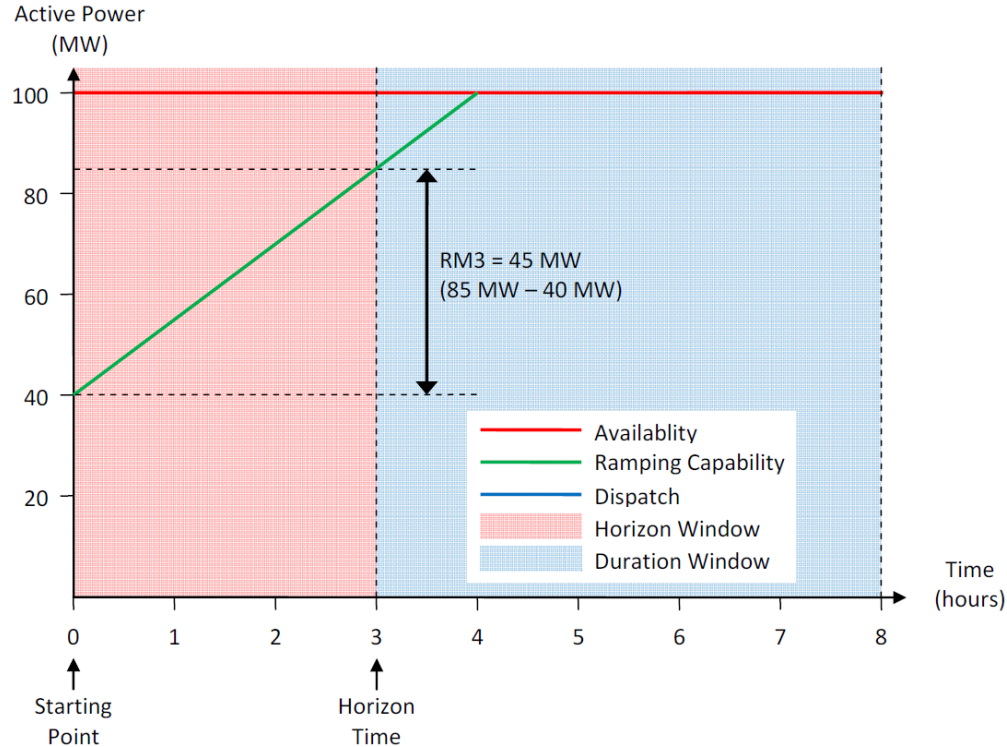
Ramping Concept



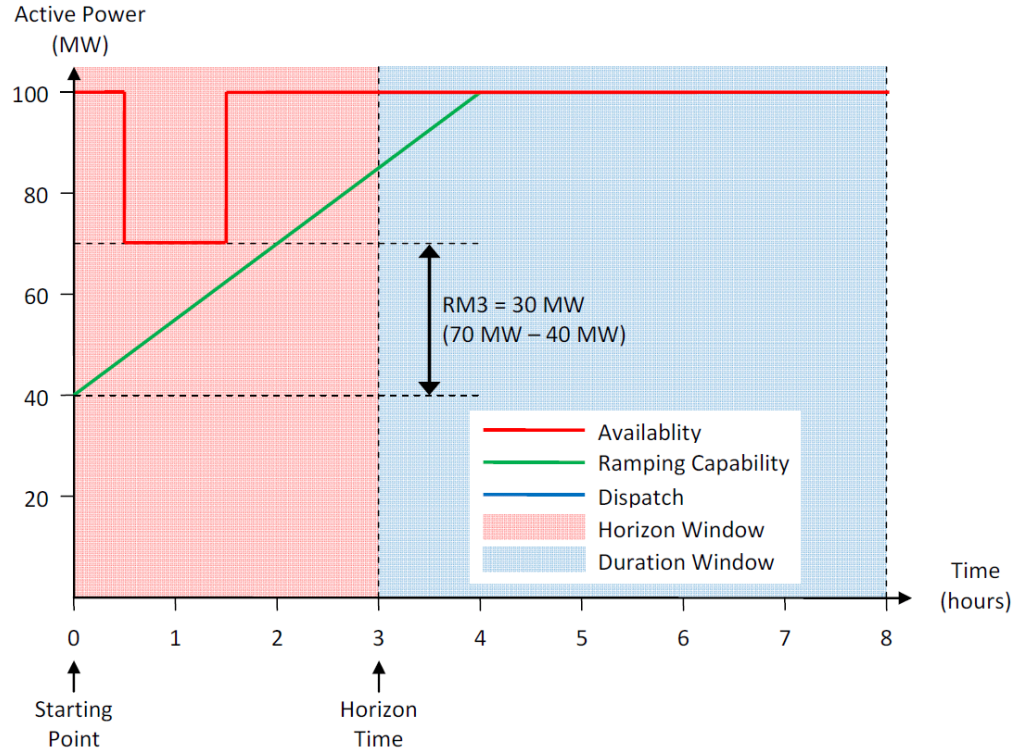
Ramping Concept



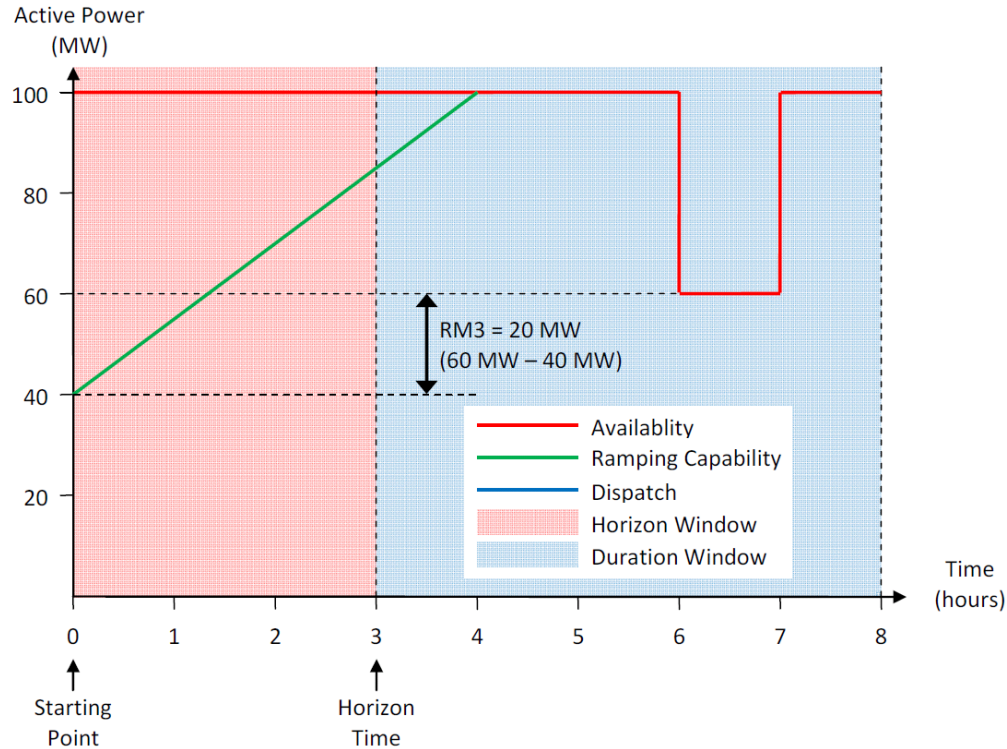
Ramping Margin (RM1, RM3 & RM8)



Ramping Margin (RM1, RM3 & RM8)



Ramping Margin (RM1, RM3 & RM8)



A wide-angle, nighttime aerial photograph of a coastal city. The city lights are reflected in the water, and the foreground shows a dark, forested hillside. The sky is a deep blue with some light clouds.

Contractual Aspects



Proposed Type and Duration of Fixed Contracts

- All contractual aspects would be subject to consultation
- Considerations will include:
 - Length of contracts
 - Availability requirements
 - Firm access status
 - Whether there is a locational requirement for the service
 - Payment mechanism
 - Performance Scalars and use of Protocol



Further questions on remuneration

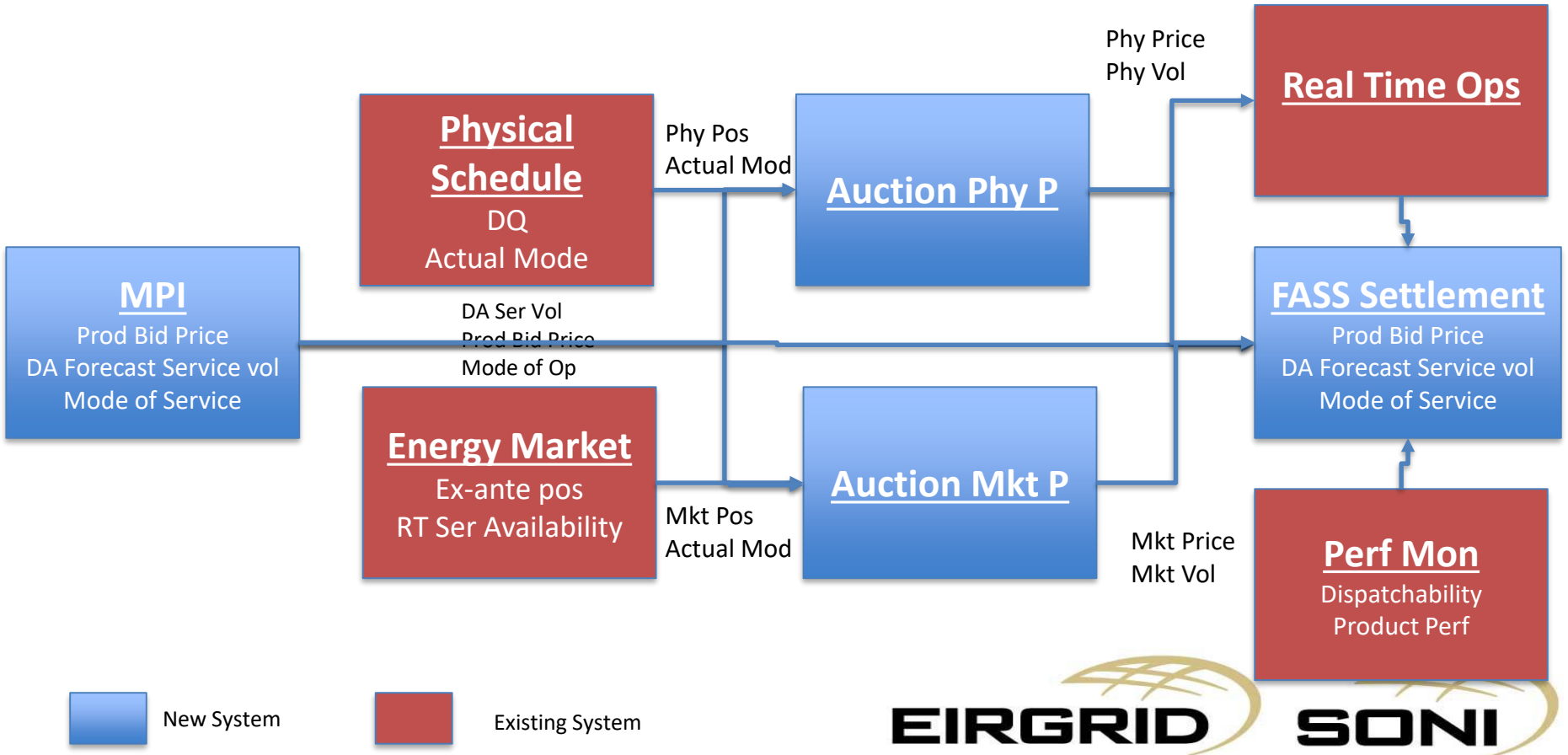
DS3 Approach

- Price Regulated
 - No restrictions
- Qualification
- Length of Arrangements

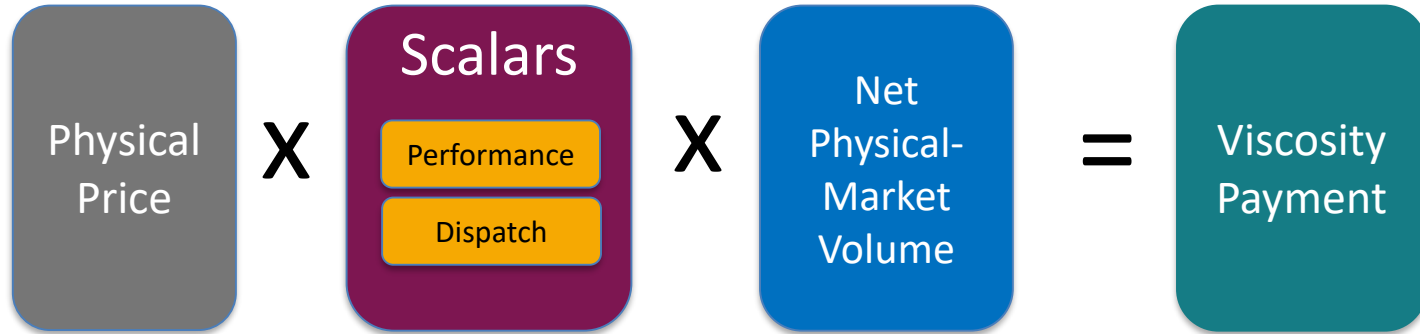
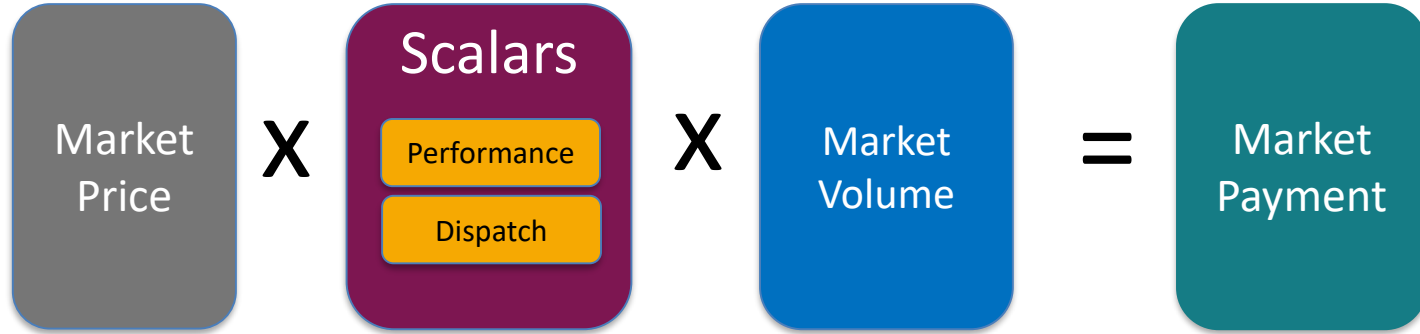
New Ramping Auction

- Volume Regulated
 - Circa 1000 MW of capability
- Auction Winner
 - price for 12 hour ramping per trading period
- 6 years..?

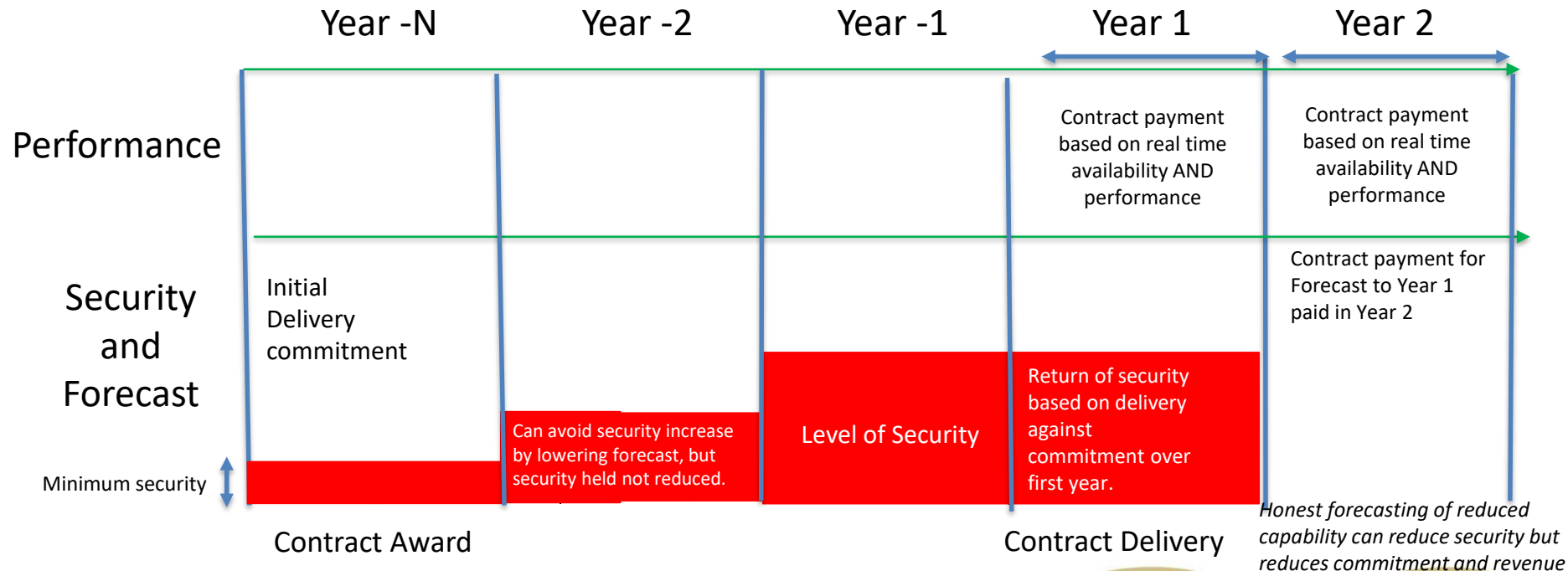
TSO HLD of Spot Market Design



FASS Settlement Market and Physical actions



Proposed Remuneration: Forecast and Performance



Questions on Remuneration

- Location – no but Firm Access
- Eligible Technologies
 - no restriction but need to be proven to deliver capability
 - Emissions limits a factor
 - Is SNSP a consideration?
- Consideration may be (for example) to offer product at least 30% hours of the year and be paid for service provision up to 60% of hours a year.

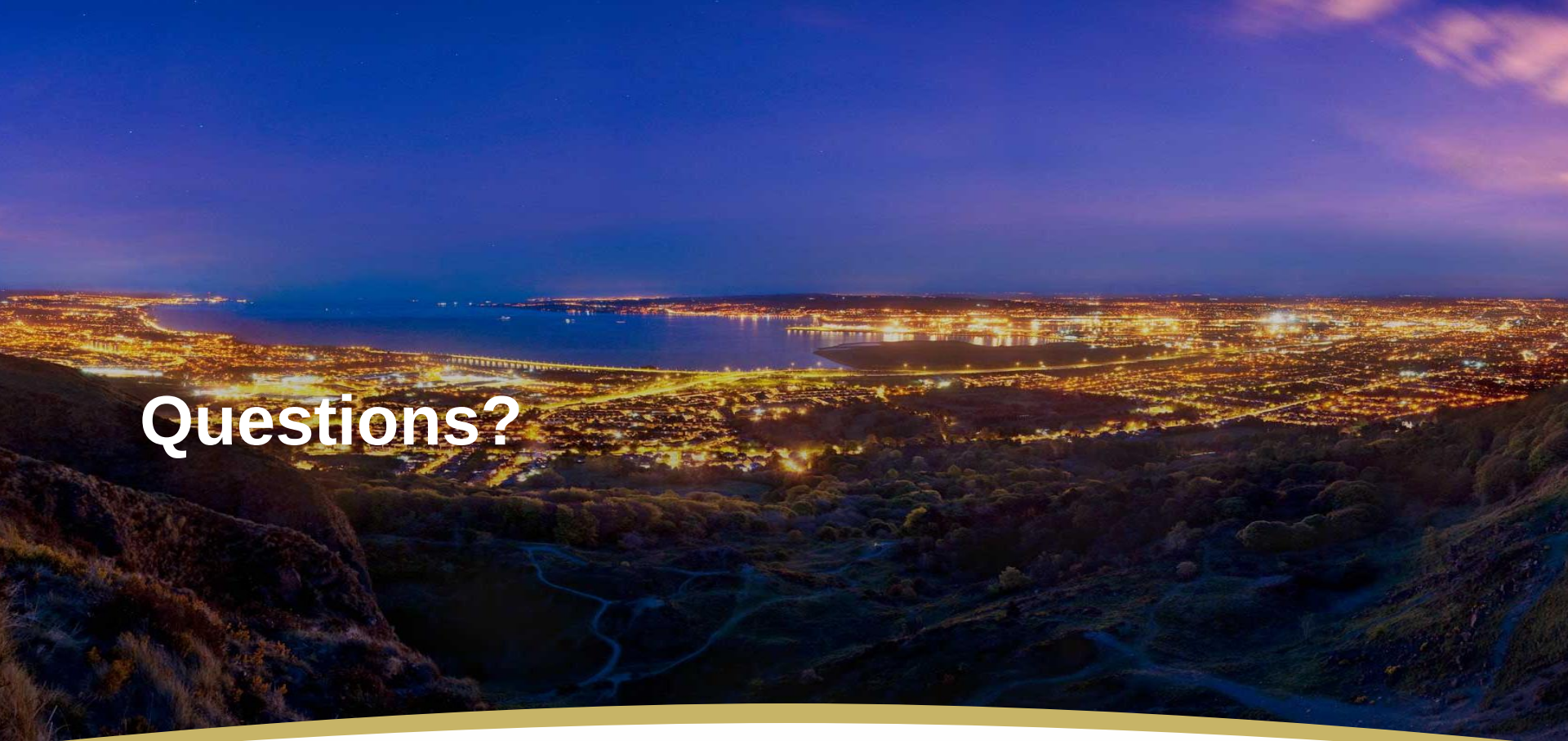
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Next Steps



Next Steps

- TSOs to submit assessment to the SEMC with a high-level recommendation
- SEMC will review and may issue a Direction to the TSOs to prepare a detailed proposal for this procurement process
- If approved by the SEMC, TSOs will publish the detailed proposal for public consultation
- Timeline for consultation/decision will need to take into account CRM auction timeline dependencies (aligned with T-4 auctions)



Questions?

