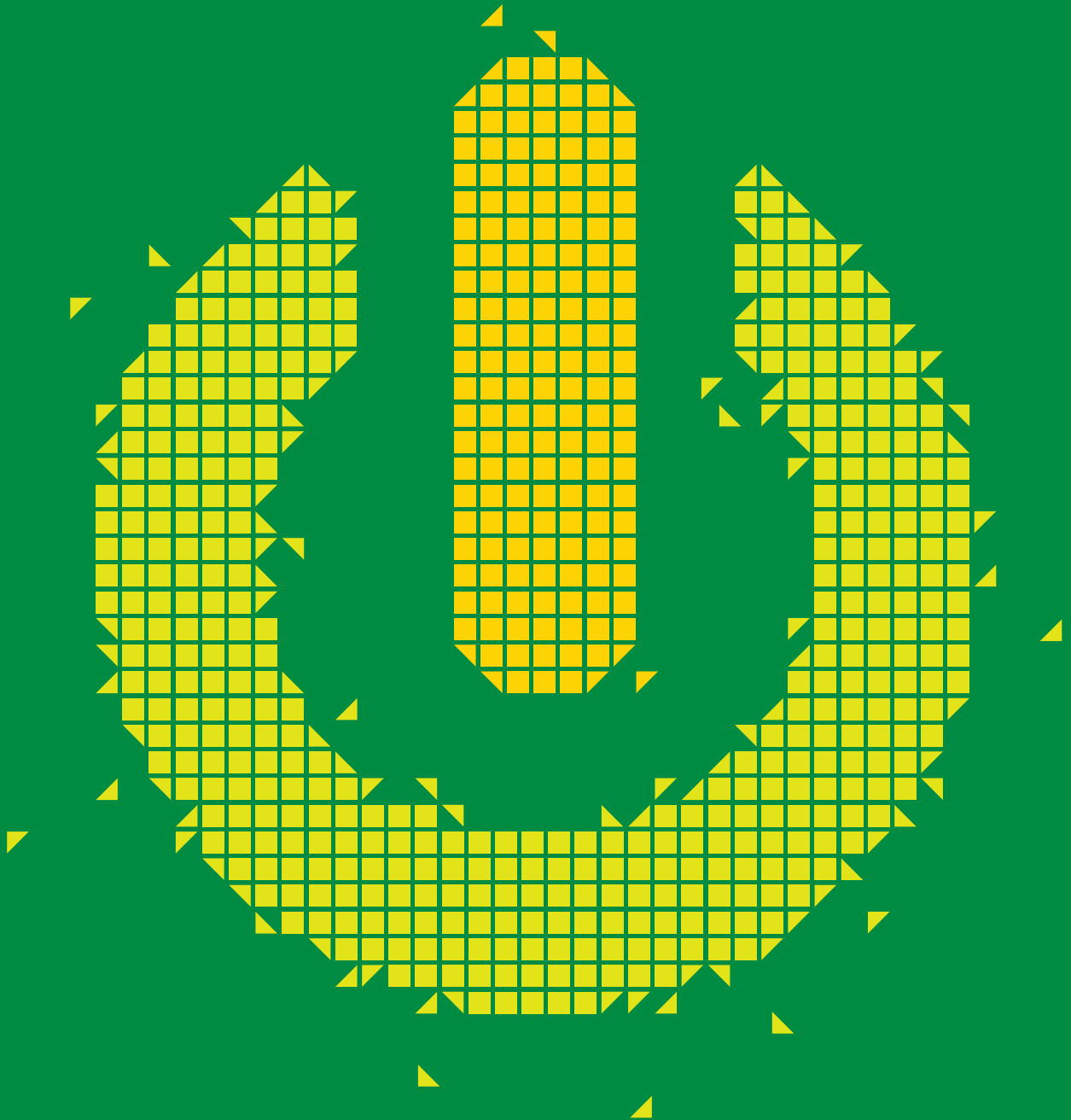


Are you ready for I-SEM?



Gemserv

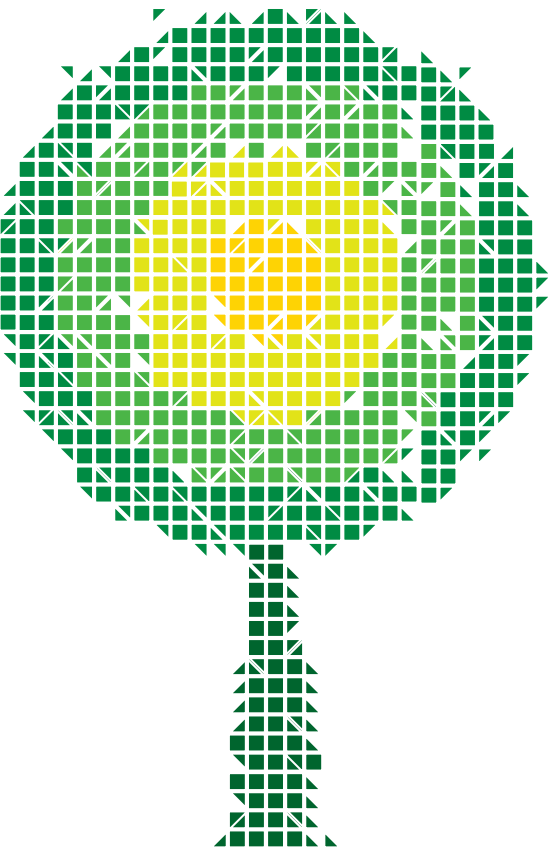


About Gemserv

Gemserv is a specialist market design, governance and assurance service provider. We provide high quality, impartial advice to competitive utility and environmental markets, and their participants.

We deliver high quality end-to-end services to our clients: from policy development and initial governance frameworks; through to solution design, build and maintenance; as well as accreditation and assurance schemes; and secretariat provision. In addition we advise clients on a wide range of information security and data protection issues including security strategies, cyber security and benchmarking to quality standards such as ISO27001 (Information Security Management).

Operating in Ireland and Northern Ireland since 2005, work we have delivered includes: market readiness assurance for the Single Electricity Market (SEM); advice to the Utility Regulator on a range of matters including the SEM; assurance activities in the retail electricity market; and data protection and information security advisory services to the National Smart Metering Programme (NSMP).



GLOSSARY OF TERMS

BM	Balancing Market
CMP	European Congestion Management Procedures
CPM	Capacity Payment Mechanism
CRM	Capacity Remuneration Mechanism
DAM	Day Ahead Market
EPC	European Price Coupling
ETM	European Target Model
GDPR	General Data Protection Regulator
ICO	Interconnector Owners
IDM	Intra Day Market
I-SEM	Integrated Single Electricity Market
MDP	Meter Data Providers
NEMO	Nominated Electricity Market Operator
NSMP	National Smart Metering Programme
RA	Regulatory Authorities
SEM	Single Electricity Market
SEMO	Single Electricity Market Operator
TSO	Transmission System Operator



Enter the I-SEM

INTRODUCTION

The Integrated Single Electricity Market (I-SEM) will profoundly change the wholesale electricity trading arrangements in Ireland and Northern Ireland. Market participants, both current and future, will need to adapt their organisations, systems and practices to deal with this new reality, due in the fourth quarter of 2017. Companies with low levels of readiness for this market risk being left behind.

Gemserv, has prepared this paper to help market participants consider their options in getting ready for I-SEM. It summarises the new market, and outlines the areas that companies should consider in preparing for their market readiness activities. The aim of this paper is to help companies answer the question: “are you ready for I-SEM?”

I-SEM TRADING ARRANGEMENTS

The current SEM is a gross mandatory pool market with a Capacity Payment Mechanism (CPM). The I-SEM, however, will involve multiple trading platforms across different timescales, with auctions for capacity and *ex ante* price and quantity setting. The resulting increased complexity will present new challenges, and opportunities, to market participants.

Figure 1 of this paper sets out a conceptual map of the trading arrangements for a given trading day.

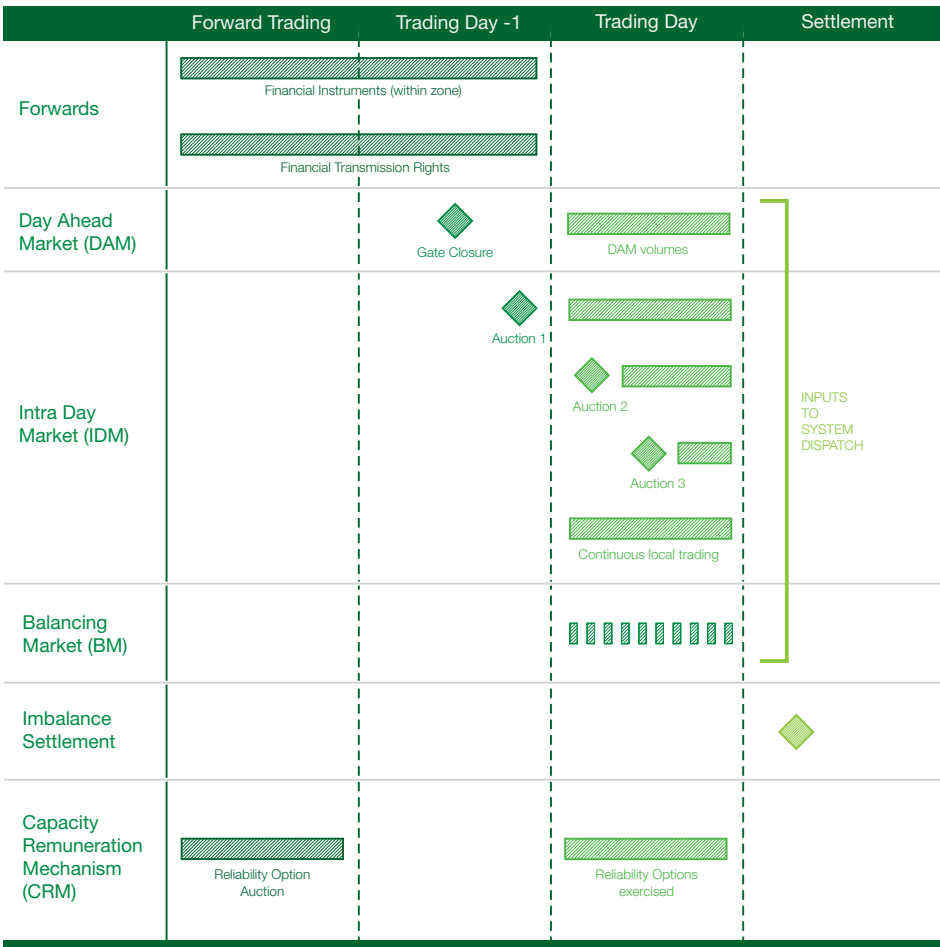


Figure 1: I-SEM trading arrangements



What do I need to do?

PARTICIPANT READINESS

To adapt to the new trading arrangements, and fulfil their roles in I-SEM (see Figure 2 of this paper), market participants will need to consider market readiness across three areas:

- System Readiness;
- Organisational Readiness; and
- Information Security.

These areas are explained in more detail on the page opposite.

CENTRAL MARKET READINESS

While this paper focuses on participant readiness, the Single Electricity Market Operator (SEMO) is responsible for implementing measures to ensure the market is ready for live operation. The Regulatory Authorities (RA) will determine if the market is ready to go live. SEMO aims to achieve market readiness through a programme of activities including:

- **Market Readiness Reporting** – participants perform self-assessments and report against the SEMO-defined criteria with SEMO periodically reporting on the market’s status;
- **EUPHEMIA Trialling** – trialling the European day ahead pricing algorithm (EUPHEMIA) to be used in the I-SEM Day Ahead Market (DAM); and
- **Market Trialling** – a full scale “as live” operational trial of all market systems and processes. Its function is to demonstrate that the market systems and interfaces are operating appropriately, allowing participants to acclimatise to the new market design.

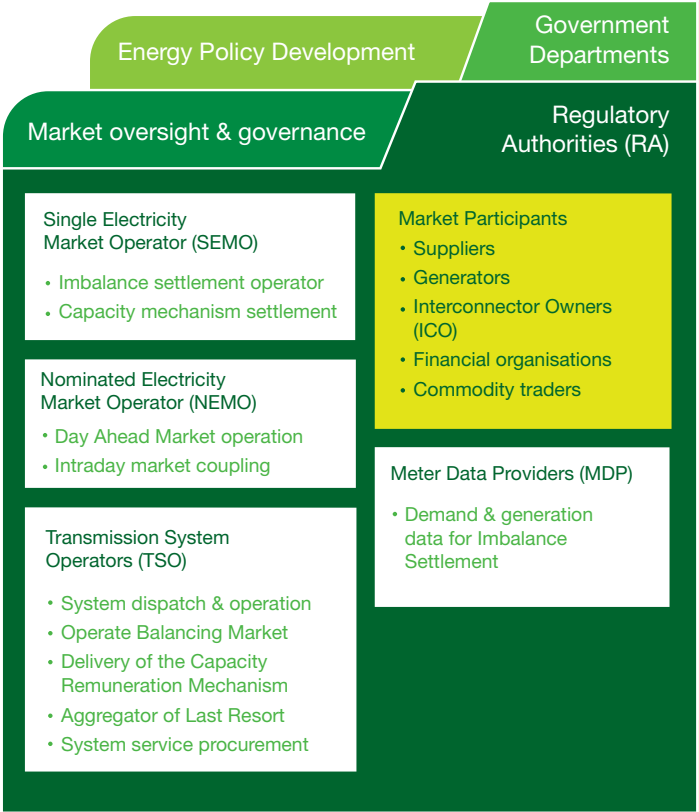


Figure 2: Summary of I-SEM roles and areas of market readiness



System Readiness

While ensuring their systems can interact with the central market, companies should be assured that their internal systems are functionally appropriate in the context of I-SEM. In addition, as discussed in the Business-IT alignment literature¹, the systems developed or installed should benefit the financial performance of the company.

Business activities which may need to be scoped into an organisation's system readiness plan include:

- Internal systems
- Interfaces with central market systems
- Power plant operation
- Trading and settlement systems

Organisational Readiness

Aligned with developing market systems, market participants should give consideration to the people, practices and processes that make use of that system and support the business interacting with the market. Below are listed some business activities relevant to ensuring organisational readiness for the I-SEM.

- Business procedures
- Settlement procedures
- Project management & quality procedures
- Commercial & financial activities
- Governance
- Management
- Staff training
- Third party interfaces
- Meeting regulatory obligations

Information Security & Data Protection

The digitalisation of the energy sector is creating new interfaces between customers and energy company operation, for example smartphone apps facilitating customer control of demand. This process will include possible information security risks. With the increased trading volumes expected in I-SEM, the impact of a possible information security breach could be high.

It is best practice for companies to consider "privacy by design" in line with the new General Data Protection Regulation (GDPR) and to ensure that all new systems and processes are fully compliant in preparation for 2018.

A 2015 UK Government survey² illustrates that the potential cost of a breach is increasing year on year. 90% of large organisations had a security breach within the previous year with the average cost ranging from £1.46m-£3.14m an increase from £600k-£1.5m the year before. 74% of small businesses reported breaches in the range of £75k-£311k, increasing from £65k-£115k the previous year.

Business activities pertinent to data protection and information security risk within I-SEM include:

- Trading activities
- Information transfer and storage
- Customer engagement and data protection
- Website operation
- Commercial and financial systems

¹ Famously discussed in: Henderson, J.C. & Venkatraman, N., 1993. Strategic alignment: Leveraging information technology for transforming organizations

² UK Department of Business Innovation and Skills, 2015. Information Security Breaches Survey

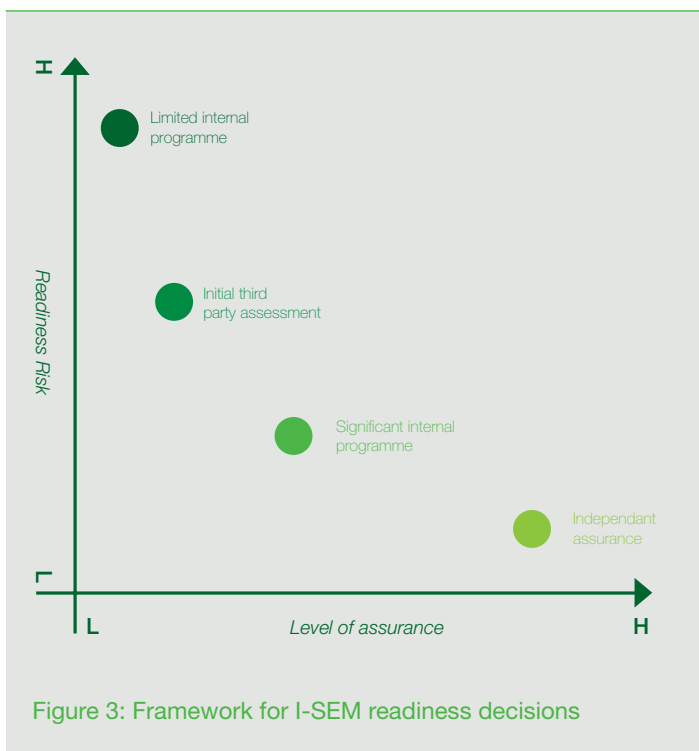


Where to now?

DECISION TIME

In addition to meeting the minimum SEMO readiness requirements, market participants will have to make three judgements about their own readiness for I-SEM. Those decisions are:

- 1. How extensive should their I-SEM readiness activities be?** Figure 3 of this paper suggests a possible framework for this decision, comparing the level of assurance against a company's appetite for readiness risk, and maps a number of options against that framework;
- 2. What business activities should be included within their I-SEM market readiness plans?** Companies may wish to review the areas outlined on the previous page; and
- 3. When to invest in readiness?** In a context where the detailed market rules may not be finalised, participants have to balance: whether to make anticipatory investment in their systems and capacity; or wait for full clarity and run the risk of delay due to the timelines involved in procuring, installing and testing those systems.



As these decisions relate to companies' systems, organisational preparedness and information security practices, they have real consequences for businesses.

LESSONS FROM EUROPE

The key rationale for I-SEM, from the RAs' perspective, is to implement the European Target Model (ETM) in the Irish and Northern Irish context. In thinking about getting ready for I-SEM, it may be instructive for companies to consider the lessons learned from implementing the ETM, or aspects of it. A number of these considerations are set out below:

- Implementation of a complex market design may be more challenging than originally envisaged. 2014 was the original target date for achieving European Price Coupling (EPC), a simultaneous European DAM. According to the Agency for the Cooperation of Energy Regulators (ACER)³ in 2015, this initiative covered 85% of Europe's electricity demand. I-SEM, under special derogation from the European Commission (EC), has a go live date of the fourth quarter of 2017. The wider European experience suggests that the target dates will be challenging for market participants.
- Companies should tailor their readiness programmes to their own strategic and personal requirements. Different players will have different needs within the I-SEM, needs that may be relatively bespoke to the individual market participant. For example⁴, different actors interact in a distinct fashion with the European forward markets: established players may use them to manage risk; new entrant generators may be looking to lock in long-run prices; new entrant suppliers may aim to lock in their wholesale prices; and commodity traders may see them as part of a larger trading portfolio.

3. ACER, 2016. ACER Regional Initiatives Status Review Report 2015

4. Taken from: ACER/CEER, 2015. Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2014



- iii. Companies should take account of the practical organisational realities of implementing a market design. For example, while technical challenges were experienced during the European intraday market coupling, significant issues arose through governance matters and the conflicting interests of a number of the parties involved⁵. Market preparation should incorporate stakeholder, governance and project management concerns, in addition to technical considerations.
- iv. Participants should factor in the capacity of networks into their strategies. The limits of the physical infrastructure constrains the ability of electricity to flow, impacting on the operation of the power market. For example, intraday market coupling (i.e. cross border trading within day) will struggle where interconnector flows are limited. This limitation is evident from the European experience: nearly 17% of interconnector points⁶ under the European Congestion Management Procedures (CMP) were congested in 2015.

CONCLUSION

Much work has gone into developing I-SEM, with all indications being that the RAs intend on delivering to schedule in the fourth quarter of 2017. Market participants who do not undertake sufficient internal market readiness programmes risk being left behind. Companies should consider market readiness across three areas: Systems Readiness; Organisational Readiness; and Information Security. Gemserv would be happy to meet with market participants to discuss their requirements.

WHAT ABOUT BREXIT?

There is no essential reason why Brexit should significantly impact on the development of I-SEM, as the SEM Committee itself has acknowledged⁷. In fact, there are a number of very good reasons why the market should deploy as planned, some of which are set out below:

- The UK is interconnected with a number of European markets (France, the Netherlands, and Ireland). Greater alignment across the different trading regimes would facilitate increased volumes of cross border trades.
- If Northern Ireland was to be removed from I-SEM, an alternative regime would have to be designed and implemented, entailing cost, delay, and legislative change. Creating two different sets of trading arrangements on the island would introduce inefficiency into the market.
- Any alternative would create significant uncertainty across the island's energy sector, including for companies that have invested both north and south of the border, and potentially creating losses for them.

5. ACER, 2015. ACER Regional Initiatives Status Review Report 2014

6. ACER, 2016. ACER annual report on contractual congestion at interconnection points

7. SEM Committee, 5th July, 2016. SEM Committee meeting 30 June 2016



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